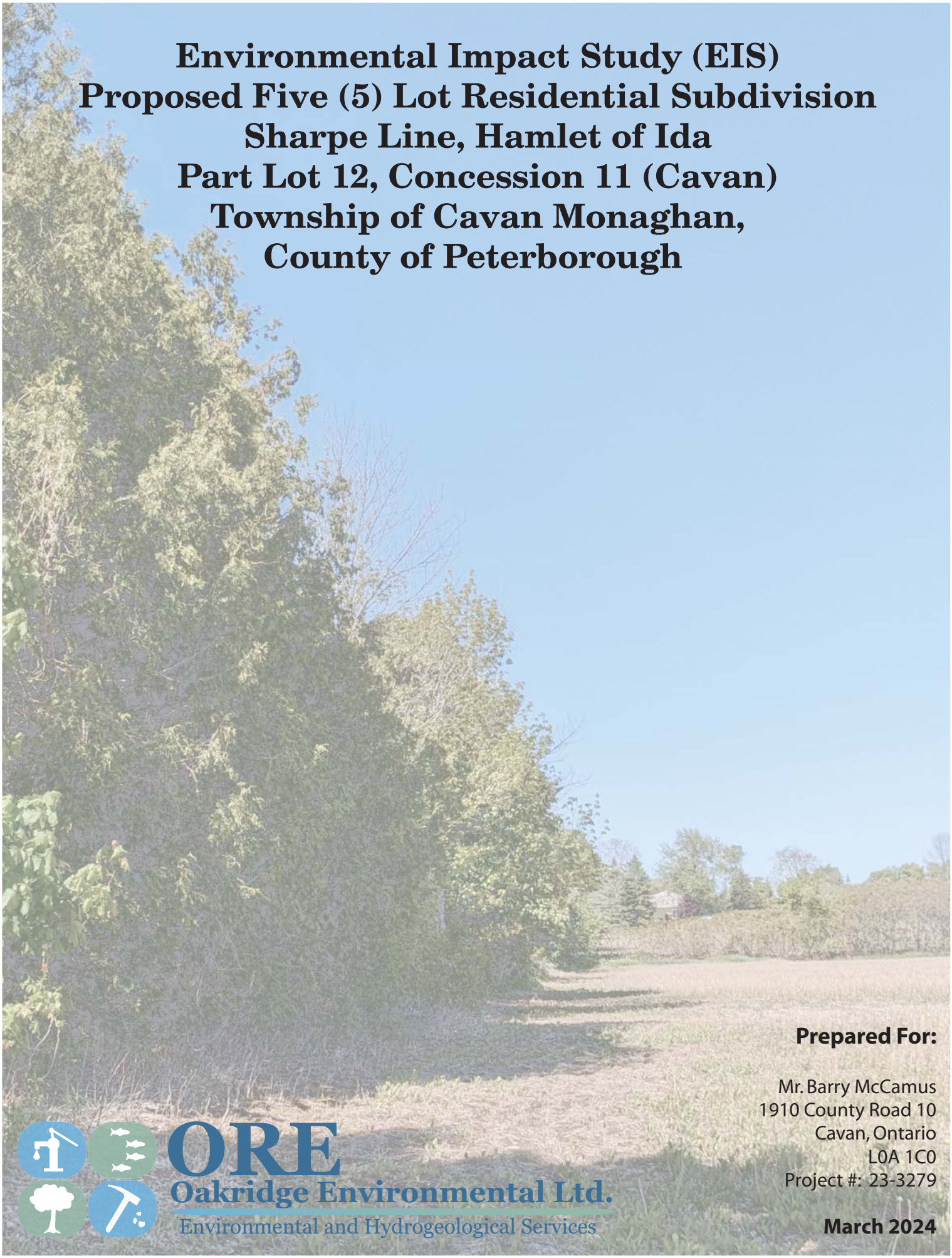
Environmental Impact Study (EIS)
Proposed Five (5) Lot Residential Subdivision
Sharpe Line, Hamlet of Ida
Part Lot 12, Concession 11 (Cavan)
Township of Cavan Monaghan,
County of Peterborough



Prepared For:

Mr. Barry McCamus
1910 County Road 10
Cavan, Ontario
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Project #: 23-3279

March 2024

ORE
Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

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March 11th, 2024

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Attention: **Mr. Barry McCamus**

Re: Environmental Impact Study (EIS)
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Part Lot 12, Concession 11 (Cavan)
Township of Cavan Monaghan, County of Peterborough
ORE File No. 23-3279

Oakridge Environmental Ltd. (ORE) is pleased to provide this Environmental Impact Study (EIS) for the above-referenced property, located in the Township of Cavan Monaghan. The subject site occurs within the settlement area of Ida and would therefore be subject to the Township of Cavan Monaghan Natural Heritage System (NHS) which supercedes the Growth Plan NHS.

ORE staff previously completed a series of seasonal inspections during the spring, summer and fall of 2017 (as reported in 2018). At that time, a tributary feature was noted to occur within the road allowance of County Road 10. This minor intermittent stream possesses some minor wetland vegetation abutting the west side of County Road 10. The system mainly collects surface water runoff from the subject site and conveys these flows through a culvert towards a small headwater stream area located on the adjacent parcel to the east. An update inspection was completed during the 2023 growing season, to review any changes to the site conditions, and to collect additional data.

It is our opinion that the proposed five (5) lot residential subdivision will not have any impact on the tributary feature and headwater area east of the Sharpe Line/County Road 10 intersection on an adjacent neighbouring parcel, provided the recommendations in this report are implemented at the site.

If you have any questions, please contact the undersigned.

Yours truly,
Oakridge Environmental Ltd.

Rob West, HBSc.
Senior Ecologist

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1.0 Introduction

1.1 General

Oakridge Environmental Ltd. (ORE) is pleased to provide this Environmental Impact Study (EIS) for the above-referenced development proposal, situated in the Township of Cavan Monaghan (Figure 1).

It is understood that the proponent wishes to submit an application for a five (5) lot residential subdivision. The lots are proposed to be severed from the existing farm property. This same property was the subject of a two (2) lot severance application (directly east of this proposed 5 lot subdivision) in 2018, which was approved. ORE completed the EIS for the application at that time.

For the previous application, information collected during a pre-consultation with Otonabee Region Conservation Authority (ORCA) revealed that the subject site falls within the "Area of Influence of a Hydrologically Sensitive Feature" (HSF). The HSF was revealed to be a small coldwater tributary that drains southward within the west side ditch of County Road 10. This feature triggered an EIS under their regulation, and consequently required the study to demonstrate that the proposed two (2) lot severance could proceed without impacting this sensitive environmental feature in 2018. A review for Species at Risk (SAR) was also completed, and revealed no SAR or associated habitat were noted at the subject site or on adjacent lands.

For this development proposal, the five (5) lots are further removed (105 m west) of the small tributary. Nevertheless, an updated inspection was conducted to confirm any changes to the site conditions, and to collect additional data such as SAR occurrences and habitat either on, or within the vicinity of the proposed development.

1.2 Site Description, Location and Access

The subject site is located in the Hamlet of Ida at municipal address 1910 County Road 10. The legal description for the site is Part of Lot 12, Concession 11 (Cavan), in the Township of Cavan Monaghan, County of Peterborough (Figures 1 & 2).

The site is accessed from Provincial Highway 115 by exiting at County Road 10. The Hamlet of Ida is located approximately 4.5 km north of the juncture of County Road 10 and Highway 115. The subject site occurs in the northwest corner of the intersection

between County Road 10 and Sharpe Line. One existing entrance off of County Road 10 currently services a residential farmhouse (#1910) which is occupied by the proponent.

The total area of the farm property is 40.86 ha (~101 acres). The proposed subdivision development will consist of five (5) lots comprised of approximately 0.7 acres (0.28 ha) each, with frontage on Sharpe Line. The lots are located immediately west of the previous two (2) lot severance.

The subject site has a land use designation of Agricultural (A) under the Township Official Plan and falls within a settlement area (Hamlet of Ida). The existing use at the site is primarily agricultural (i.e., row cropland), possessing the associated farm residence, farm equipment, and related outbuildings.

2.0 Policy Framework

2.1 Provincial Policy Statement

The 2020 Provincial Policy Statement (PPS) provides policy direction on matters of provincial interest related to land use planning and development. This document stresses the need for appropriate development while protecting natural heritage resources of provincial interest, public health and safety, and the quality of natural heritage features. Section 3 of the Planning Act requires that planning authorities shall be consistent with the PPS when exercising any authority that affects municipal planning matters.

ORE is knowledgeable of, and has reviewed Section 2.1 (Natural Heritage) of the PPS (Appendix A) with specific applicability of the Policy to the subject site.

2.2 Greater Golden Horseshoe Growth Plan

The NHS for the Greater Golden Horseshoe does not apply to the subject site as it occurs within the Hamlet of Ida settlement area. Instead, the Township of Cavan-Monaghan's Natural Heritage System (NHS) is applicable in this instance.

As such, the requirements for an EIS are provided by the County of Peterborough and the Township of Cavan-Monaghan (see below). The Clark Consulting Services (Feb. 2024) Planning Justification report states that the Growth Plan prefers to direct development within the rural settlement areas if development is proposed in rural Ontario. The hamlet of Ida is considered a settlement area, therefore, the proposed residential subdivision should comply with the Growth Plan in that regard.

2.3 Peterborough County Official Plan

The Official Plan (OP) of Peterborough County states the relevant requirements for all studies to be completed in support of a proposed development application. The OP lists certain criteria that must be met for an "Environmental Impact Assessment" (synonymous with an EIS). The applicable excerpts from the OP are included in Appendix B.

The County's requirements are consistent with the 2020 Provincial Policy Statement. Therefore, any/all Natural Heritage Features (NHF) relevant to the site must be detected and reviewed in the context of potential impacts on any such features.

The County's OP also requires the proponent to detect any/all Threatened and Endangered species either on or directly adjacent to the subject site that could be impacted by the proposed development.

2.4 Township of Cavan Monaghan

Section 6.7.1 of the Township's OP states that an EIS is required for any development proposed within an Area of Influence of a Hydrologically Sensitive Feature. It is understood that the Township of Cavan Monaghan may rely on the County of Peterborough to review the EIS and determine whether the natural heritage objectives have been adequately addressed in this report.

According to Schedule B, the sensitive hydrological feature (tributary) situated across County Road 10 does not occur on the subject site. The tributary appears to be mapped as a headwater area located on the adjacent parcel to the east. The mapping also suggests that there is a significant woodland associated with this feature. The significant woodland does not extend onto the subject site.

The applicable Township OP excerpts are provided in Appendix B.

2.5 Otonabee Region Conservation Authority (ORCA)

The proposed development occurs with the 120 m adjacent lands of a mapped waterway, therefore, could be subject to ORCA's Regulation pertaining to alterations and disturbances in and around waterways.

This study has been prepared to meet the requirements outlined in Ontario Regulation 167/06, Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses.

3.0 Scope of Work

The following scope of work was completed for this study:

- Relevant background information regarding the site (air photos, topographic mapping, etc.) were updated, and reviewed. Queries of the following databases were completed: Natural Heritage Information Centre (NHIC); iNaturalist; eBird, and the Ontario Breeding Bird Atlas (OBBA).

- Site features were mapped using a Global Positioning System (GPS). A base plan (using geo-referenced aerial photography) was prepared and updated, and all site information (i.e., vegetation and sensitive features) was plotted.

- One (1) site inspection was completed in the growing season, to update previous field work conducted in 2018. A biological inventory of flora and fauna of the property was completed and/or updated. Basic vegetation communities were identified, where possible.

  Any significant environmental features or important wildlife species were identified and their positions/boundaries were determined utilizing a dGPS.

- All data have been interpreted and this report has been prepared.

4.0 Physical Setting

4.1 Topography and Drainage

Based on published topographic mapping, drainage across the subject site trends in a west to east direction with total relief being approximately eight (8) metres. Through discussions with the proponent, it is understood that the site has numerous tile drains (consisting of "big-o-pipe"), that capture runoff and convey flows eastward towards a roadside ditch/tributary that runs parallel to County Road 10.

The site is devoid of any significant woodlands or wetland features, however, the ditch/tributary along County Road 10 possesses some minor patches of wetland vegetation. The ditch/tributary, drains beneath County Road 10 and discharges to a small headwater area immediately east of the subject site. The Township's mapping indicates that the flows from this headwater area drain southward beneath Sharpe Line and eventually discharge within a small unevaluated wetland complex, located approximately 1 km from the site. The watercourse appears to be a tributary of Cavan Creek which is known to possess coldwater fish species.

According to the LIO database mapping there is a permanent stream feature that

occurs across the northern portion of the proposed lots. This feature was not detected during the site inspections and therefore does not exist within the proposed lots. This area consists of flattened/graded farm field and has been used to plant annual row crops for many years.

Topographic mapping for the subject site is illustrated on Figure 2.

4.2 Surficial Geology

According to published surficial geology mapping (Figure 3), the proposed development lots occur within a small, isolated zone of modern alluvial deposits consisting mainly of gravelly sands. These types of deposits are formed through fluvial processes (river deposits) that occurred post-glaciation. As such, this material would be some of the youngest soils in the area.

The majority of the surficial soils in the site area consist of stone-poor till that is likely part of the Newmarket Till Complex. These soils typically have a low permeability based on the composition (i.e., silts and sands) and form a regional aquitard. Several drumlins (likely comprised of this material) are also located northeast and southwest of the site. The till forms the main substrate upon which most other surficial units (including the alluvium) were deposited.

Fore-shore glaciolacustrine deposits, consisting of sand and gravel occur south and east of the subject site, representing the remnants of ancient glacial lakeshore environments. These materials were deposited over the Newmarket Till, occupying troughs and depressions. These materials tend to be highly permeable and promote groundwater recharge. The small tributary immediately east of the site occurs within these deposits and likely receives some baseflow from them.

5.0 Background Data

5.1 Natural Heritage Information Centre (NHIC)

The NHIC provides an online database managed by the Ministry of Natural Resources and Forestry (MNRF). Within the database, Ontario has been divided into a grid consisting of 1 km^2 areas or regional squares, each given a unique identifier. The squares can be searched for species of conservation concern, plant communities, wildlife concentration areas and natural areas. This search includes 120 m of adjacent lands around the property.

The search area falls within four (4) of the 1 km^2 squares: 17QJ0099, 17QK0000, 17QJ0199, and 17QJ0100.

The query indicates that six (6) Species at Risk (SAR) have been recorded in the area:

Common Name	**Scientific Name**	**SAR Status**
Bobolink	*Dolichonyx oryzivorus*	Threatened
Eastern Meadowlark	*Sturnella magna*	Threatened
Eastern Wood-Pewee	*Contopus virens*	Special Concern
Golden-winged Warbler	*Vermivora chrysoptera*	Special Concern
Midland Painted Turtle	*Chrysemys picta marginata*	Special Concern[1]
Western Chorus Frog[2]	*Pseudacris maculata pop. 1*	NAR[3]

1 COSEWIC status only
2 Great Lakes, St. Lawrence, Canadian Shield population
3 Not at Risk (SARO) - Threatened (SARA/COSEWIC).

Brief descriptions of the species above and their preferred habitats are included in Appendix C. Our site inspections included targeted searches for potential SAR habitat of these species. An excerpt from the NHIC's website illustrating the location of the squares relative to the 120 m search area around subject site is also included in Appendix D.

5.2 Ontario Breeding Bird Atlas (OBBA)

The OBBA[1] provides up-to-date reliable information on birds within Ontario. The information includes species descriptions, habitats, range, documented sightings, etc. The subject site occurs within two of the 10 km^2 areas mapped as 17TQJ09 and 17TQK00, Region 17, Northumberland. The Summary Sheets for this atlas area are provided in Appendix E.

From our review of the information, significant breeding species that could potentially be associated with habitats in the site area include the following:

Common Name	**Scientific Name**	**SARO Status**
Bank Swallow	*Riparia riparia*	Threatened
Barn Swallow	*Hirundo rustica*	Special Concern
Bobolink	*Dolichonyx oryzivorus*	Threatened
Canada Warbler	*Cardellina canadensis*	Special Concern
Chimney Swift	*Chaetura pelagica*	Threatened

[1] managed by Bird Studies Canada.

Common Nighthawk	*Chordeiles minor*	Special Concern
Eastern Meadowlark	*Sturnella magna*	Threatened
Eastern Whip-poor-will	*Antrostomus vociferus*	Threatened
Eastern Wood-Pewee	*Contopus virens*	Special Concern
Golden-winged Warbler	*Vermivora chrysoptera*	Special Concern
Grasshopper Sparrow	*Ammodramus savannarum*	Special Concern
Least Bittern	*Ixobrychus exilis*	Threatened
Red-headed Woodpecker	*Melanerpes erythrocephalus*	Endangered
Wood Thrush	*Hylocichla mustelina*	Special Concern

Brief descriptions of the listed species and their preferred habitats are included in Appendix C. The site inspections included a review of potential SAR habitat and targeted searches for the listed species.

5.3 eBird

eBird is a citizen science database, whereby birding individuals can attend public areas referred to as "hotspots" and list species of bird they detect each time they visit the hotspot location. According to the eBird Geographic Information System (GIS) database, the nearest hotspot is the Stewart Line Willow Swamp (L15089650) site, located approximately <1 km west of the site. A total of thirty-two (32) species were recorded at this hotspot (Appendix F). Of the 32, one (1) is a SAR and listed below:

Common Name	**Scientific Name**	**Status**
Rusty Blackbird	*Euphagus carolinus*	Special Concern

A brief description of this SAR and its preferred habitat is included in Appendix C.

5.4 iNaturalist

The iNaturalist database provides a geographical site map which contains individual species occurrences. The NHIC version of the iNaturalist database is specific to those species tracked by the NHIC. These include SAR as per those identified in the Species at Risk Ontario website and also provincially rare species that the NHIC tracks in their records. The occurrence data includes the professional/surveyors name, confirmation identification by other professionals, occurrence photos, and the date the rare species was observed. The search extent is an approximate 2 km radius from the approximate property boundary.

The iNaturalist database was reviewed to determine if any SAR sightings of research grade have occurred either on, or within the vicinity of the subject site. One (1) SAR species was reported either directly on or in the general vicinity of the subject site. The SAR occurrence has been compiled below:

Common Name	**Scientific Names**	**SAR Status**
Black Ash	*Fraxinus nigra*	Endangered

Rare species were reported as follows:

Common Name	**Scientific Name**	**S-Rank**
Northern Bush Katydid	*Scudderia septentrionalis*	S3?

The descriptions of the SAR species occurrences are provided in Appendix C.

One (1) of the databases the MECP SAR Prescreen refers to is the Herp Atlas data. This database is no longer current (up to 2019) and the data had been incorporated into iNaturalist afterward. More recently, Nature Ontario released a new version of the Reptile & Amphibian Atlas (NORAA) on-line, and is similar in appearance to the OBBA. However, the NORAA is still a very generalized database whereby it indicates which counties the herp can occur within in according to the maps. ORE staff anticipates survey data (similar to the OBBA) will be collected in years to come which will more accurately identify where certain herps occur within the counties of Ontario.

6.0 Inspection Methodologies

6.1 Vegetation

The site has been characterized by its various vegetation communities using the methodologies included in the *Ecological Land Classification (ELC) - First Approximation and It's Applications* (1998). The 1998 Ecological Land Classification - First Approximation is a guide used by Ecologists to standardize the classification of different vegetation community types across Ontario. The classification system enables an ecologist to identify vegetation communities based on the species present, soil materials and moisture regimes.

There have been a number of updates to the ELC to further refine the classification of Ecosites throughout Ontario. As a result, the 2008 *Draft* ELC Guide provides a further breakdown of the 1998 ELC Guide and includes many new communities to index from. The 2008 ELC scheme also provides a cross-reference to the 1998 guide communities.

This report uses a combination of both the 1998 ELC communities (which are considered the primary vegetation communities) and the 2008 Draft ELC to supplement the vegetation community lists.

Prior to conducting the site inspection, aerial photography of the subject site was analysed to roughly delineate communities based on recognizable vegetation differences. Each identified community was subsequently inspected through soil and vegetation analysis. If necessary, these communities were further broken down into sub-communities based on the field inspections. Dominant vegetation types were recorded and boundaries of the various communities were mapped using a dGPS.

Soil characteristics were determined using the methods outlined in the *Field Manual for Describing Soils in Ontario* (2009) and the results were used to further classify the ecological community.

In addition to identifying and mapping the ELC communities, ORE staff assessed each vegetation community from the perspective of whether they are hydrologically sensitive, and/or whether they may contain a Species at Risk.

6.2 Avifauna Surveys

Avifauna surveys were previously carried out in 2017 (as reported in 2018), in accordance with the field methods described in the Atlas of the Breeding Birds of Ontario, 2001-2005 (2007). One (1) additional inspection was conducted during the breeding bird period in 2023. Point count surveys were conducted during the early morning, for a duration of five (5) minutes or more.

The number of point count locations was determined based on the site's area. All of the surveys were completed during clear, low wind weather conditions. Bird calling devices and "pishing and squeaking" were also used to attract bird species from within the forest communities.

All species overheard or observed during the surveys were recorded regardless of status.

6.3 Herptiles

The subject site does not contain any significant wetlands or permanent watercourses, therefore, nocturnal amphibian surveys were not conducted. Although the County Road 10 ditch/tributary possesses some minor wetland vegetation, it did not possess flows during the previous or current inspections. Nevertheless, any observations during the daytime inspections were recorded.

6.4 Mammals

Mammals were detected utilizing the methodologies outlined in the MNRF's March 1998 - Wildlife Monitoring Programs and Inventory Techniques for Ontario. Mammals were generally identified by either direct observation or via their tracks and/or scat droppings at the site.

No live traps were set/installed at the site as a permit is necessary to trap mammals. This was deemed unnecessary as no SAR mammals are known to occur within this region. Tracking and other signs to detect mammals were sufficient for the purpose of this study.

The subject site does not contain any deer wintering habitat nor any other significant mammal wildlife habitat for those species outlined in the MNRF's January 2015, Significant Wildlife Habitat Criteria Schedules For Ecoregion 6E.

6.5 Fish

A ditch/creek system occurs within the road allowance alongside County Road 10, approximately 105 m east of the proposed development. Although the segment of tributary/ditch is very short (tens of meters) it may temporarily support fish during the early spring spawning period. However, it is questionable as to whether the fish would navigate beneath County Road 10, considering the length of culvert/pipe present and the absence of visible light at the end of the pipe. ORE suspects that fish would navigate the waterway only to the headwater area on the east side of County Road 10.

Based on the preceding, it was deemed unnecessary to obtain a permit to collect fish from the tributary.

7.0 Site Inspection Data

7.1 General

For this EIS, ORE staff conducted inspections on the following dates:

Date of Inspection	Time of Inspection	Temp. ^{O}C	Beaufort (Wind) Scale	Conditions
June 8th, 2017	5:30 AM - 9:00 AM	23	1 (Light Air)	Sunny and Clear, ideal for detecting avian.
July 3rd, 2017	5:00 AM - 8:30 AM	25	2 (Light Breeze)	Sunny and Clear, ideal for detecting avian.
August 30th , 2017	9:00 AM - 1:00 PM	19	2 (Light Breeze)	Sunny with Minor Cloud Cover. Ideal for detecting vegetation.
November 24th , 2017	10:00 AM - 1:00 PM	5	4 (Moderate Breeze)	Sunny Day with Minor Cloud. Cold with breeze.
May 25th, 2023	8:30 AM - 10:00 AM	6	3 (Gentle Breeze)	Sunny with 20% Cloud Cover.

From the site inspection data, a map of the general vegetation communities and habitats occurring on the property has been prepared (see Figure 4).

The inspections in 2017 were conducted as part of an application for a two (2) lot severance by the same proponent, immediately east of the five (5) lot subdivision. However, data were also collected for the five (5) lot subdivision at that time. An additional inspection was conducted in 2023 to update the previous data collected, and to confirm site conditions.

The inspections were conducted during the optimum times to observe both flora and fauna, and during the ideal window to apply the Ontario Wetland Evaluation System (Southern Manual) to map the boundary of the ditch/tributary feature. Our November 2017 inspection was completed to observe stream flows within the County Road 10 ditch/tributary feature. The inspection was completed during a wet period prior to the onset of winter conditions.

7.2 Ecological Land Classification (ELC)

Based on our site inspections, the following vegetation communities have been identified on the subject site:

On-site Cultural Communities

1. Agricultural - Annual Row Crops (OAGM1)
2. Mineral Fencerow (TAGM5)
3. Rural Property (CVR_4)

Off-site County Road 10 Ditch / Tributary

4. Mixed Mineral Meadow Marsh (MAMM3-1)

These communities are briefly described below. Photos of the site and vegetation conditions are illustrated in Appendix G

On-site Cultural Communities:

1. Agricultural - Annual Row Crops (OAGM1)

No description is provided in the draft May 2008 Ecological Land Classification for Southern Ontario

This community dominates the majority of the subject site. The watercourse mapped by the MNRF (Figure 2) in the LIO appears to be a low point in the elevation and may contribute to drainage. There is no standing nor running water. There was no presence of gley or mottling within the soils. The soil is expected to have been disturbed regularly based on it being part of the arable lands on the property.

No SAR were detected during the 2017 or recent inspection in 2023.

2. Mineral Fencerow (TAGM5)

The 2008 Draft ELC does not provide any further description regarding this community and there is no community in the 1998 ELC Guide that defines this type of Ecosite.

The Mineral Fencerow vegetation community occurs along the southern and western boundary of the site. Tree and shrub species appear to dominate this community in various clusters. Species include: Eastern White Cedar (*Thuja occidentalis*), American Basswood (*Tilia americana*), American Elm (*Ulmus americana*), Box Elder (*Acer negundo*), Norway Maple (*Acer platanoides*), Common Buckthorn (*Rhamnus cathartica*), Common Lilac (*Syringa vulgaris*) and Apple (*Malus sp.*).

Continual disturbances are evident in this community based on the degree of

invasive/exotic plant species, such as Garlic Mustard (*Alliaria petiolata*), Dog Strangling Vine (*Vincetoxicum rossicum*), Riverbank Grape (*Vitis riparia*) and Virginia Creeper (*Parthenocissus quinquefolia*).

No soil explorations were completed for this community as it was a relatively thin swath along the roadside and the west property boundary.

3. Rural Property CVR_4

No description is provided for the CVR_4 in the draft May 2008 Ecological Land Classification for Southern Ontario.

This community is associated with the on-site residential component of the farm on the subject property. It occurs to the northeast of the proposed 5 lot subdivision.

In addition, this community also occurs withing the existing dwellings associated with the two (2) severances that are off-site but directly to the east across the subject site's boundary. These are not included within the subject property, but are relevant in the sense that they are a type of existing residential use between the proposed lots and the only watercourse/KHF identified proximal to the subject property.

Off-site County Road 10 Ditch / Tributary:

4. Mixed Mineral Meadow Marsh (MAMM3-1)

According to the ELC (2008), MAMM3-1 communities can experience variable flooding regimes and water depths of up to 2 m. These zones typically have mineralized substrates, and are seasonally flooded. They are dominated by a mixture of hydrophytic graminoid and forb species.

Notable species observed in this community include: Broad-leaved Cattail (*Typha latifolia*), Canada Goldenrod (*Solidago canadensis*), Spotted Jewel-weed (*Impatiens capensis*), Purple Loosestrife (*Lythrum salicaria*) and Spotted Joe-Pye Weed (*Eutrochium maculatum*).

This meadow marsh habitat occurs as a very thin strip (1 m to 2 m wide) in a man-made ditch feature on the west side of County Road 10 that bypasses the subject property. The flows originate from a ditch on the east side of County Road 10 (north of the subject property), cross beneath County Road 10 onto the west side of the roadway and then conveyed south toward the northwest corner of the intersection of County Road 10 and Sharpe Line. The flows are then directed beneath County Road 10 via a culvert and directed eastward along Sharpe Line. Another culvert beneath Sharpe Line directs the

flows south.

Based on the local on-site topography and tile-drain network, surface water runoff is directed towards the westerly ditch feature that is aligned with County Road 10. County Road 10 acts as a barrier to the stream and runoff is funnelled from the farm fields toward the southeast corner (particularly during the spring freshet).

No soil excavations were completed within this community so as to not further disturb this feature, thereby avoiding sediment being deposited in the downstream headwater area. This feature also occurs outside of the property limits.

7.3 Fauna

All faunal species identified during the site inspections were recorded. The list of faunal species observed at the site is presented in Appendix H. Relevant observations of faunal activities on and adjacent to the site are briefly discussed below.

7.3.1 Avifauna

ORE staff completed two (2) inspections during the breeding bird period to detect avifauna at the site in 2017. During the 2023 inspection, one additional survey was conducted to confirm conditions.

The inspections on June 8th and July 3rd (2017) were both completed between 5 AM and 9 AM. All avifauna species detected during the inspections were recorded according to their vocalizations and/or sightings, including Species at Risk avian either on or directly adjacent to the site. The additional survey on May 25, 2023 was conducted near the end of the early morning timing window to detect breeding bird species, which is sufficient in this regard as most avian call up until 9 AM or 9:30 AM. An evening inspection was not completed as no nocturnal SAR were detected during the SAR prescreen conducted as per the Ministry of the Environment, Conservation and Parks' protocol.

ORE noted that both the 2017 and the 2023 inspections were conducted during ideal conditions and the level of calling avifauna was high. Therefore, the probability of detecting all bird species was high.

No Species at Risk were detected. ORE staff made a concerted effort to detect SAR avian such as Bobolink and Eastern Meadowlark. None were observed nor overheard on the site or in the surrounding area.

7.3.2 Herptiles

Herptiles include salamanders, lizards, turtles and snakes species. General searches for herptile species were conducted on-site where these species could potentially occur.

ORE staff observed beneath wood debris in the fencerow, entered the creek corridor, and inspected roadways for potential road-kill, to determine if any herptiles were present on or near the subject site. In general, the primary focus of these surveys was to detect herptiles listed within the ESA (i.e., SAR).

Amphibian surveys were not completed as per the standard protocol and only daytime detections were recorded as part of this study. The ditch-bed on-site is an ephemeral feature, and ORE staff did not observe water in this feature during the June 8th, July 3rd, or the August 30th, 2017 site visits. However, flows were observed within this feature on the November 24th, 2017 site visit outside of the period to detect amphibian species. The flows were observed in this feature just after some significant precipitation events in early November.

It is possible that some amphibian species may be associated with the site or potentially utilize the ditch as a migratory corridor to access isolated wetlands to the northeast of the subject site, across County Road 10. ORE staff did not detect any amphibians calling on-site during the very early morning inspections either in 2017 or in 2023. However, amphibians were overheard calling from within the wetland complex feature to the south of Sharpe Line.

No other herptile species were detected on-site.

7.3.3 Mammals

Mammals include species such as fox, coyote, white-tailed dear, racoon, skunk, bats, etc.

The province's Species at Risk Ontario (SARO) website lists very few species of mammal within south-central Ontario as either Endangered, Threatened, or Special Concern with the exception of certain bat species. The majority of the listed mammals occur within Northern and Southern Ontario regimes. Very few of those mammal species listed within the website occur in the Peterborough region, other than bat species.

The subject site does not possess suitable habitat for bat roosting other than within the barn buildings and farmhouse associated with the retained lands (which are expected to remain intact). ORE staff did not conduct bat surveys as they were not detected in the SAR prescreen, and if a SAR bat does occur in the area it would likely be Little Brown Myotis, which roosts within barns, attics of residences and within bat snags in woodlands. The proposed five (5) lots occur within farm field habitats. Other than the

access lanes, both the trees along the road frontage and the trees within the west fencerow will be retained. Therefore, the lots would not encroach or remove the habitat of any Endangered bat species.

None of the mammals detected on-site are species that have a provincial status of either Special Concern, Threatened or Endangered.

7.4 Species at Risk (Special Concern, Threatened and Endangered)

ORE staff completed a thorough search of all potential SAR on the subject property during the inspections. This included a concerted effort to identify any SAR avian listed in the prescreen databases, as well as a thorough search for Butternut trees (*Juglans cinerea*), along the road frontage and west fencerow habitat.

The fencerows (comprised of tall trees and shrubs) were thoroughly inspected for Butternut, and none were identified. Although suitable terrain and soil conditions are present to support Butternut, the competition in this area would be too great to support this species. Invasive species, such as Box Elder (*Acer negundo*), Common Buckthorn (*Rhamnus cathartica*), and Norway Maple (*Acer platinoides*) were observed to dominate the southern fencerow. The fencerow between the farm field and Sharpe Line is also constantly being trimmed by road crews and the proponent, therefore, making it difficult for any new trees/shrubs to establish themselves. However, the west fencerow contains more native tree species and it is possible that Butternut could germinate in this area, if another Butternut occurs within 50 m of this fencerow and the seed was transported by squirrels/chipmunks. ORE staff did not observe any Butternuts within 50 m of the west fencerow.

The surveys were predominantly focussed on detecting open field SAR birds, including Eastern Meadowlark and Bobolink, as the area where the lots are proposed (and to the north of this area) contains farm field (row crops). ORE staff attended the site during the optimum diurnal period to detect these SAR avian. The row crops and fencerows (in the area) were scanned utilizing binoculars, even though neither the Eastern Meadowlark or the Bobolink nest within these types of habitats.

These species prefer hayfield type habitat whereas the subject site consisted of planted rows of Soy Bean, which are not typically utilized by either species during their life cycle. The retained farm lands to the north of the proposed development contained the same row-type crops. No Endangered or Threatened SAR avian were detected on or directly adjacent to the subject site during the surveys.

ORE staff conducted surveys for dead-on-road (DOR) SAR such as Eastern Milksnake (*Lampropeltis triangulum*), turtles, etc. No other SAR were detected on the roadway or directly adjacent to the site.

8.0 Impact Assessment

8.1 Sensitive Environmental Features

The only environmental feature that could be impacted by the proposed five-lot severance is the ditch/tributary feature alongside County Road 10 within the road allowance. Potential impacts considered herein include the following:

- potential impacts to surface water quality from the additional septic systems (in addition to the 2 new lots) being introduced to this area;
- potential impacts to water quality from erosion and sedimentation during the construction phase;
- potential diversion of surface water runoff that contributes seasonal sheet flows to the nearby headwater watercourse as concentrated flows via a new ditch or on-site drainage;
- potential impacts resulting from impervious surfaces on-site such as dwellings and potential garages, etc;
- potential impacts from importation of fill needed to raise and level the site for development purposes, and
- potential impacts from introduction of invasive non-native species during construction and in the post construction era.

Specific recommendations for mitigating potential impacts to the ditch/tributary feature are provided in a following section.

8.2 NHIC Species

ORE staff completed specific inspections to detect whether any of the NHIC species listed in the database query were present on-site. The list includes the following SAR:

- Bobolink - prefers large farm fields that have not been planted (rotated field) - *habitat is not present on-site and in the adjacent fields to the west as the property tends to plant row crops every year.*
- Eastern Meadowlark - similar to Bobolink habitat; and not present on-site.
- Eastern Wood-Pewee - mature woodland areas with some understory trees and shrubs - *habitat not present on-site;*

- Golden-winged Warbler - willow dominated shrubby/thicket wetland areas. *Habitat is not present on-site*.

- Midland Painted Turtle - watercourses and wetlands - *Habitat is not present on-site*.

- Western Chorus Frog - watercourses, wetlands and spring freshette inundated fields - *Habitat is not present on-site*.

None of the above-mentioned species in the NHIC were detected on-site nor within the neighbouring properties.

Unless the property owner rotates the fields and annual row crops are not planted in the field where the proposed subdivision is proposed, no mitigation is required.

8.3 OBBA Species

- Barn Swallow - prefers waterfront properties and farmlands. It was not present on the subject property and could be associated with the neighbouring farm properties that contain barns and outbuildings - *habitat not present on-site. The proposed residences on each lot and/or their potential outbuildings could become nesting habitat for this Special Concern species once constructed. It could, therefore, serve as a net benefit to Barn Swallow*.

- Bank Swallow - prefers rivers and streams with banks, and wooded slopes associated with valleys. None observed in the area of the proposed five (5) lots. No open sections where Bank Swallow nests were present within 50 m of the subject property - *habitat not present on-site*.

- Bobolink - addressed above in NHIC.

- Eastern Meadowlark - addressed above in NHIC.

- Canada Warbler - prefers conifer and mixed wooded areas overlooking wetlands and waterways. -*habitat is not present on-site*.

- Chimney Swift - typically associated with small rural settlement areas. It may utilize lightning struck trees that have been hollowed-out in woodland habitats. However, ORE staff did not detect this species within 120 m of the proposed subdivision area during the inspections - *habitat may be marginal in the west fencerow however Chimney Swift was not detected*

during the surveys.

- Common Nighthawk - prefers open alvars, shrubby sand barrens and rock barren habitats adjacent to waterways - *habitat not present on-site*.
- Eastern Whip-poor-will - mature late succession woodlands and pine barrens - *habitat is not present on-site*.
- Eastern Wood-Pewee - typically prefers better quality woodlands - *habitat is not present on-site*.
- Golden-winged Warbler - addressed in NHIC above.
- Grasshopper Sparrow - similar to Bobolink and Eastern Meadowlark - *habitat is present on the subject property*.
- Least Bittern - cattail and emergent reedy marshes - *habitat not present on the subject site*.
- Red-headed Woodpecker - prefers wooded areas such as mature sugar maple/oak savannah type stands - *habitat is not present on-site*.
- Wood Thrush - secondary succession woodland areas can be mixed or deciduous dominated - *habitat is not present on-site*.

None of the above-mentioned species were identified during the site inspections. Therefore, no specific mitigation is required.

8.4 eBird

There was only one (1) species of SAR detected in the eBird database - Rusty Blackbird. Rusty Blackbird prefers open field environments that contain wetland and watercourses - the subject site contains suitable habitat for Rusty Blackbird.

Rusty Blackbird was not identified during the site inspections, therefore, no specific mitigation is required for Rusty Blackbird. This species typically occurs in disturbed edges such as fencerows, agricultural fields and waterways, therefore, Rusty Blackbird can coexist with a certain level of development as long as the three (3) elements above are present.

8.5 iNaturalist

There was only one (1) species of SAR detected in the iNaturalist database - Black Ash. Black Ash prefers wooded swamp environments. According to our communications with a Species at Risk Biologist (SARB) at the Ministry of Environment, Conservation and Parks (MECP), there are no requirements yet for Black Ash. It is still protected due to its Endangered status, however, there are no health assessment criteria to apply to this species to differentiate between retainable versus non-retainable trees. Black Ash typically occurs within wetland communities. Therefore, the tree would be somewhat protected already given wetland are typically protected habitats in any case.

Black Ash was not identified during the site inspections, therefore, no specific mitigation is required for this species to meet any ESA provisions.

8.6 Construction

General potential impacts related to eventual construction activities are listed below:

- noise and vibration from operation of equipment;
- negative impacts due to site alterations/disturbances;
- erosion and sedimentation generated by exposed unconsolidated soils during excavation and grading activities on-site;
- mismanagement of excess imported materials and presence of construction debris or waste materials; and
- importation of materials containing invasive/exotic species.

To mitigate the potential for impacts associated with the above, appropriate construction scheduling and specific construction measures will need to be considered. In addition, careful attention to the limits associated with building/grading envelopes and maintaining buffers/Vegetation Protection Zones (VPZ) will be required.

Specific recommendations for mitigation of impacts associated with construction activities are provided in a following section.

8.7 Future Use/Occupation

Potential impacts related to future occupation and use of the site include the following:

- improper handling of wastes, chemical, pesticides, garden wastes, or other deleterious materials;

- disturbance related to minor alterations, further clearing of land (e.g., to extend lawns, gardens, laneways, etc.), and

- sensitivity with respect to potential impacts associated with servicing requirements (e.g., nutrients released by wastewater treatment systems).

General recommendations for mitigation of impacts associated with the above are provided below.

9.0 Conclusions

9.1 The proposed five (5) lot subdivision should be permitted as no significant natural heritage features will be negatively impacted by the expected site alterations. The proposed lots will be consistent with the Growth Plan for the Greater Golden Horseshoe, whereby residential growth shall be targeted within the municipally designated settlement areas. The proposed lot layout is also consistent with the Township of Cavan-Monaghan's Official Plan and Natural Heritage System (NHS), whereby the proposed development would occur in an area that would not impact any significant Natural Heritage areas.

This EIS is consistent with the requirements outlined by the County of Peterborough's Official Plan for an Environmental Impact Assessment/EIS. Mitigation is provided in the recommendations section of this EIS.

9.2 Historical species data from the SAR prescreen databases suggest that several SAR have been detected in the general area of the subject property including Eastern Meadowlark and Bobolink (both are Threatened species) in the past, either on or adjacent to the subject site. As such, targeted searches were conducted for these species, resulting in the following conclusions:

- Eastern Meadowlark - was not detected during the surveys. Suitable habitat does not occur directly on-site as the farm fields have been utilized for row crops from year to year, as opposed to hay, which is preferred by this species.

- Similarly, Bobolink is also a species of concern as the subject site possesses farm fields which, if rotated to hay crop, are preferred by this species. Potentially suitable habitat occurs within the vicinity of the subject site. Bobolink - was not detected during the surveys. Suitable habitat does not

occur directly on-site as the fields possess row crops from year to year.

As the subject site does not possess suitable habitat for either of these SAR birds, no mitigation is required in this regard. The lands that possess potentially suitable habitat occur hundreds of metres from the subject site. ORE staff did not detect any of the other SAR species that were captured in the SAR prescreen.

9.3 According to the LIO database mapping there is a permanent stream feature that occurs across the northern portion of the proposed lots. This feature was not detected during the site inspections and therefore does not exist within the proposed lots. This area consists of flattened/graded farm field and has been used to plant annual row crops for many years.

10.0 Recommendations

10.1 Creation of the five (5) proposed lots will have no negative impacts on the sensitive natural areas on the subject site, provided the following recommendations are adhered to.

Considering the headwater area across County Road 10 is the most sensitive feature in the general area of the site (situated approximately 150 m east of the most easterly proposed lot), a 30 m vegetation protection zone (VPZ) has been applied from this feature toward the subject site. The 30 m VPZ has been applied to the western limit of this feature, as shown on Figure 5.

Maintaining a 30 m VPZ from the ditch/tributary provides the widest buffer between the sensitive watercourse features in the area and the proposed five (5) lot subdivision area. The 30 m VPZ will mitigate any potential disturbances to the ditch/tributary and headwater zone during construction and occupancy. Additionally, this distance would provide an adequate flow path for septic effluent to naturally attenuate nutrients prior to reaching this sensitive feature. The 30 m setback is two times the minimum recommended distance in the Ontario Building Code from a watercourse.

The “no negative impact test” is consistent with the 2020 Provincial Policy Statement (PPS), the Growth Plan and the County of Peterborough Official Plan.

10.2 No SAR were detected directly within the subject site nor neighbouring/retained lands. Therefore, there are no ESA implications and it will not be necessary to obtain a SAR permit from the Ministry of Environment, Conservation and Parks (MECP).

If a SAR is detected during construction, the MECP must be contacted to determine the

next steps and whether a permit is required. Under the Endangered Species Act, the proponent/property owner must not harm, harass or cull a Threatened or Endangered SAR.

10.3 Proper erosion/sedimentation controls will be required at all times while heavy equipment is in operation. Heavy-duty silt fencing (single-row) must be installed to identify the boundaries of the approved development envelope (i.e., work areas) and to serve as barriers to prevent construction activities from working outside this limit. Heavy-duty silt fence has a dual-fold purpose, it not only contains unconsolidated soils, it is an exclusion fence for turtles and other wildlife. Light-duty silt fence does not serve as an exclusion fence. Turtles and other wildlife could utilize the intermittent ditch flows to access the subject site, the properly installed exclusion fence would prevent turtles from entering the lots under construction.

Bales of straw should be strategically located inside the silt fencing, especially in areas where heavier sediment loads may occur during precipitation events. The bales can also be used at the corners of the silt fence to improve stability. Construction should not continue during heavy precipitation events. After any such events, the fence and bales should be checked to ensure their effectiveness. Appendix I illustrates how a heavy-duty silt fence material is to be installed on-site as per the Ontario Provincial Standards (see Drawing 219.130). There are other more effective alternatives to hay bales, the contractor should explore these options if it is necessary to convey concentrated flows off-site.

The silt fence and straw bales provide a solution to mitigate sheet runoff, not concentrated flows. Therefore, if a concentrated flow results from the construction on-site, this may require another type of erosion/sedimentation control such as a rock check dam with geotextile filter cloth to ensure any sediment laden runoff is prevented from leaving the construction area(s). The new lot owner's contractor should incorporate any erosion controls in their Site Plan/Grading Plan to ensure the ephemeral creek corridor feature is not impacted by sediment laden runoff during construction.

Only clean fill should be imported to the site. The fill should not contain organic materials such as plant debris or topsoil that may carry with it exotic or invasive species that could out-compete native species in the on-site wetland. If imported topsoil is required, then screened topsoil should be the only material applied as top dressing.

10.4 ORE presumes the main construction access will be located directly off of Sharpe Line. Therefore, it is possible that construction vehicles will track soil onto the roadway during the construction period. As a means of mitigating this condition, we recommend that the Erosion Control Plan include a mud mat at the construction exit/entrance.

The mats are to be maintained/checked on a daily basis, depending on the frequency of site egress/regress and weather conditions during this period. The roadway should also be scraped on a regular basis to remove soil deposits from the surface.

As a means of ensuring non-native and exotic species are not transported to the subject site on machinery, the contractor should consult the province's Clean Equipment Protocol for Industry - Inspecting and cleaning equipment for the purposes of invasive species prevention.

10.5 To mitigate the potential for impacts resulting from vegetation removal during the breeding bird and migratory period that could flush nesting birds, no vegetation removal/stripping will be allowed to occur on-site between May 1st and July 31st, to comply with the Migratory Bird Convention Act requirements.

10.6 Following any construction, all disturbed areas shall be quickly seeded or sodded with native grass species to re-establish the root structure within the upper soils. The new lot owners are encouraged to plant native trees and shrubs within the buffers and/or along the edge of the lots. Once the seeding or sodding is determined to be a success and the soils are stable, the erosion/sedimentation controls can be removed.

ORE staff recommend that lot level stormwater practices be applied to the site incorporating a Low Impact Development (LID) approach. Each lot should ensure that sediment traps and native vegetation be used to naturally filter on-site stormwater prior to being discharged into the ephemeral creek corridor on-site. This approach will improve the quality of runoff being conveyed to the headwater.

The stormwater plan should incorporate the lot level stormwater controls in their submission to the authorities.

10.7 The following post-construction considerations are relevant to the site and would eventually apply to any future owners of the most eastern lot:

- The proposed subdivision occurs proximal to a fencerow and a watercourse feature (along County Road 10) which could possess light sensitive species. The new lot owner should refrain from directing excessive lighting toward these areas. It is recommended that they use only low wattage lighting to light driveways, the rear yard and paths.

- If the five (5) lots are approved, the property owners should not dispose of annual non-native/exotic species either on the farm field or within the fencerow areas. They should be disposed of/contained within an enclosed composting unit

(preventing access to sunlight) to ensure both the plant pieces and any seed decompose to the point where they are no longer viable.

- In regards to applications of herbicides and pesticides the County of Peterborough references the provincial requirements on the County's website:

  "*Ontario's Cosmetic Pesticide Ban and Excepted Uses Ontario prohibits the use of certain pesticides for cosmetic (non-essential) purposes.*

  Only low risk pesticides and biopesticides may be used for cosmetic purposes such as in lawns and gardens, and these are listed in the publication "List of Active Ingredients Authorized for Cosmetic Uses (Allowable List)"

  Should any future lot owners wish to apply a pesticide to the site to deter non-native and exotic species, they should consult with the allowable list and/or contact the MECP as per the Ministry of Agriculture's website:

  https://omafra.gov.on.ca/english/crops/resource/using-pesticides.htm

- The above mentioned information should be included in a homeowners environmental guide as a means of awareness and education on rural living in the Peterborough area.

10.8 The recommendations provided in this report should be incorporated into the Planning Justification report for the subdivision and form part of the development conditions.

The Building Department may also include these recommendations/conditions in the building permit that each property owner should implement/adhere to at the site.

It is the applicant's responsibility to ensure certain recommended mitigation measures outlined in this report are implemented at the site during the construction phase. The contractor can be asked to adhere to the conditions, however the property owner is ultimately responsible to ensure that the conditions are met. ORE staff can be contacted during any phase of the construction to provide direction/recommendations in regards to the mitigation measures outlined in this EIS.

* end of report *

Yours truly,
Oakridge Environmental Limited

Rob West, HBSc.
Senior Ecologist

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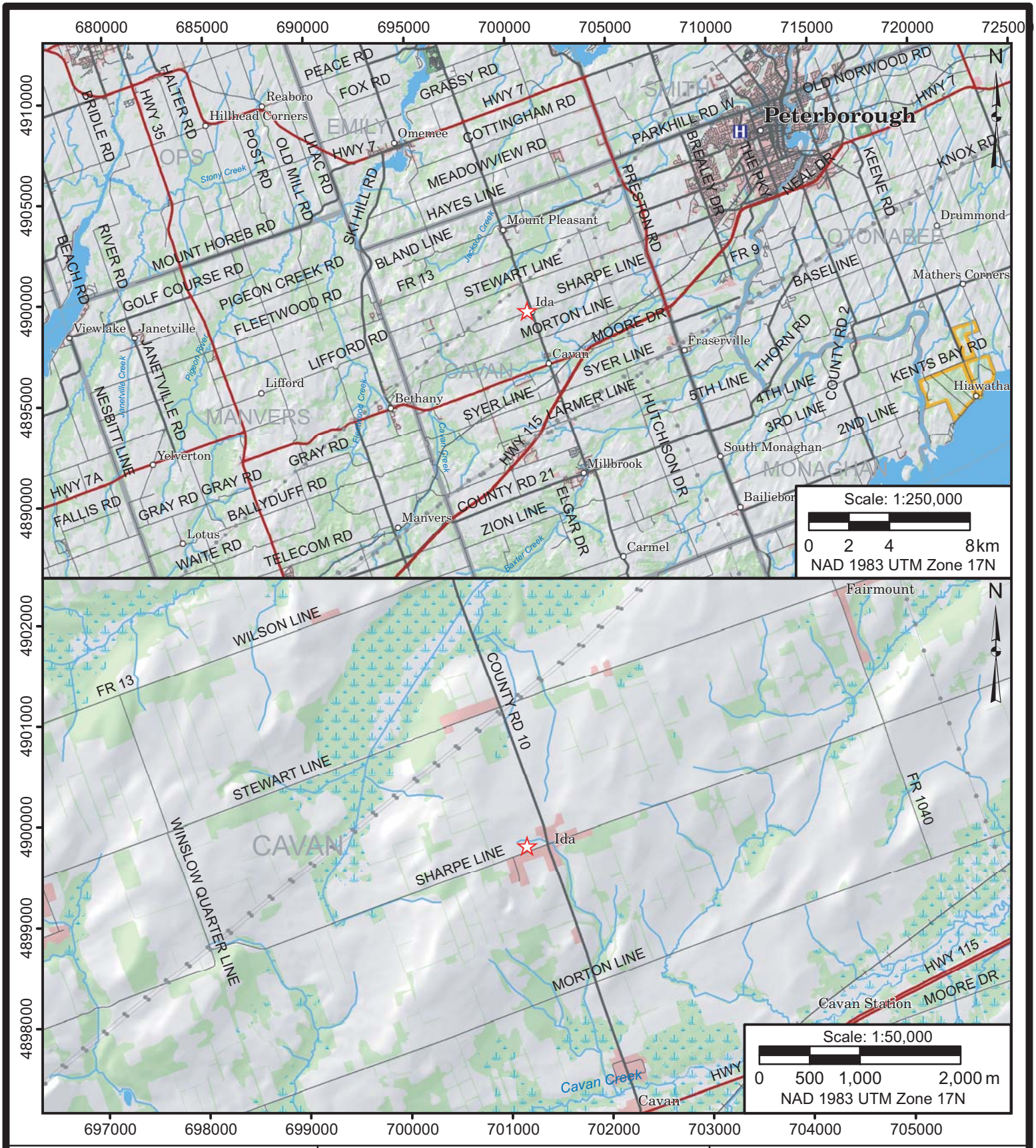
Figures



☆ Approximate Site Location

Notes: Base maps provided by Land Information Ontario and Natural Resources Canada (2023)

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Environmental Impact Study (EIS)
Proposed Five (5) Lot Residential Subdivision
Sharpe Line, Hamlet of Ida
Part Lot 12, Concession11 (Cavan)
Township of Cavan Monaghan, County of Peterborough

North American Datum (NAD) 1983

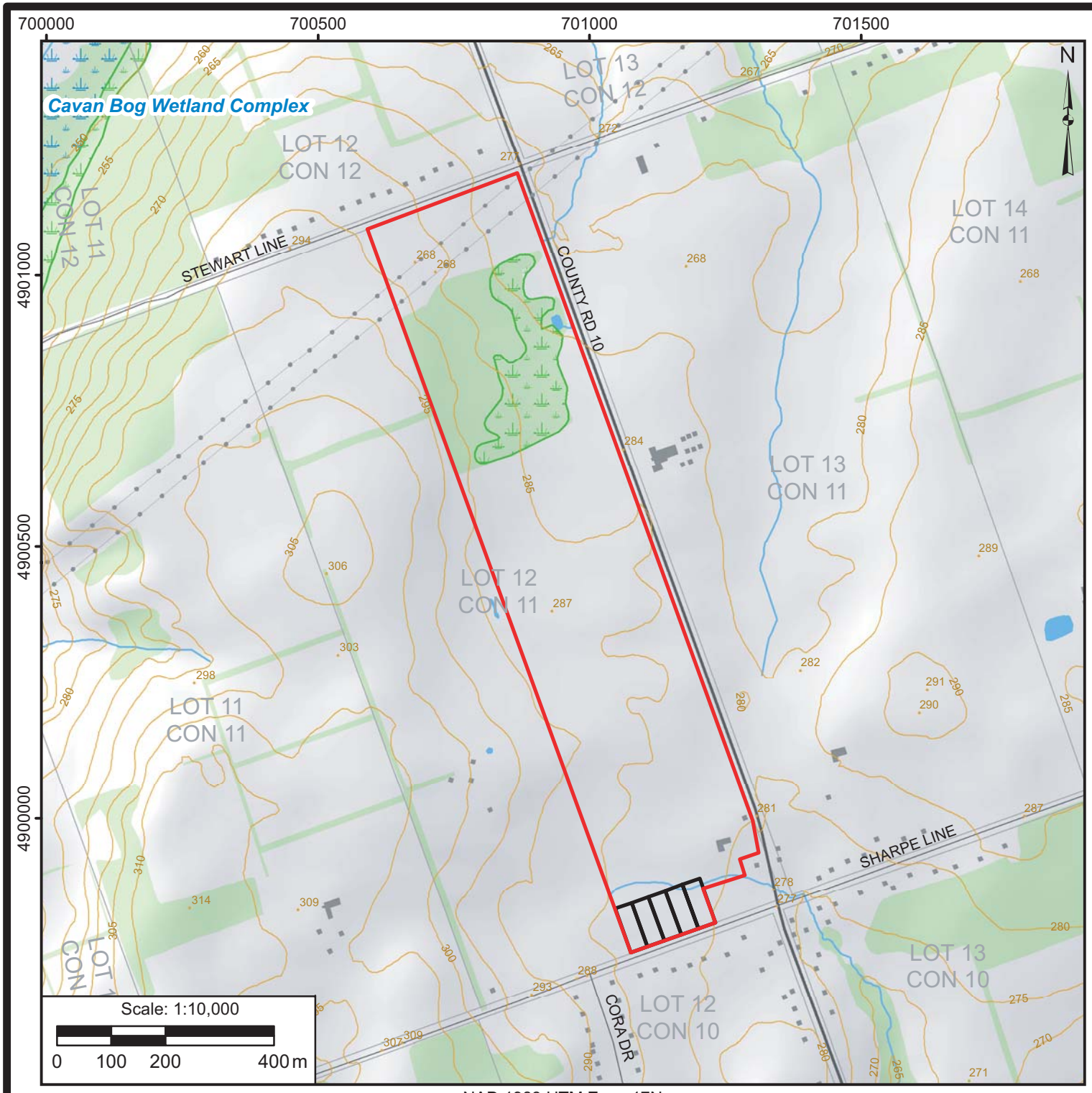
TITLE
General Location

ORE
Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

PROJECT # 23-3279

DATE March 2024

FIGURE NO. **1**



Environmental Impact Study (EIS)
Proposed Five (5) Lot Residential Subdivision
Sharpe Line, Hamlet of Ida
Part Lot 12, Concession11 (Cavan)
Township of Cavan Monaghan,
County of Peterborough

- Approximate Property Boundary
- Proposed Lots
- Wooded Area
- Waterbody
- Wetland (Unevaluated)
- Wetland (Provincially Significant)
- Watercourse
- Contour (5m Intervals)
- Spot Height (m asl)
- Building (symbol)
- Building (to scale)
- Transmission Line
- Arterial Road
- Road
- Geographic Lot Fabric

Notes: Base maps provided by Land Information Ontario and Natural Resources Canada (2023)

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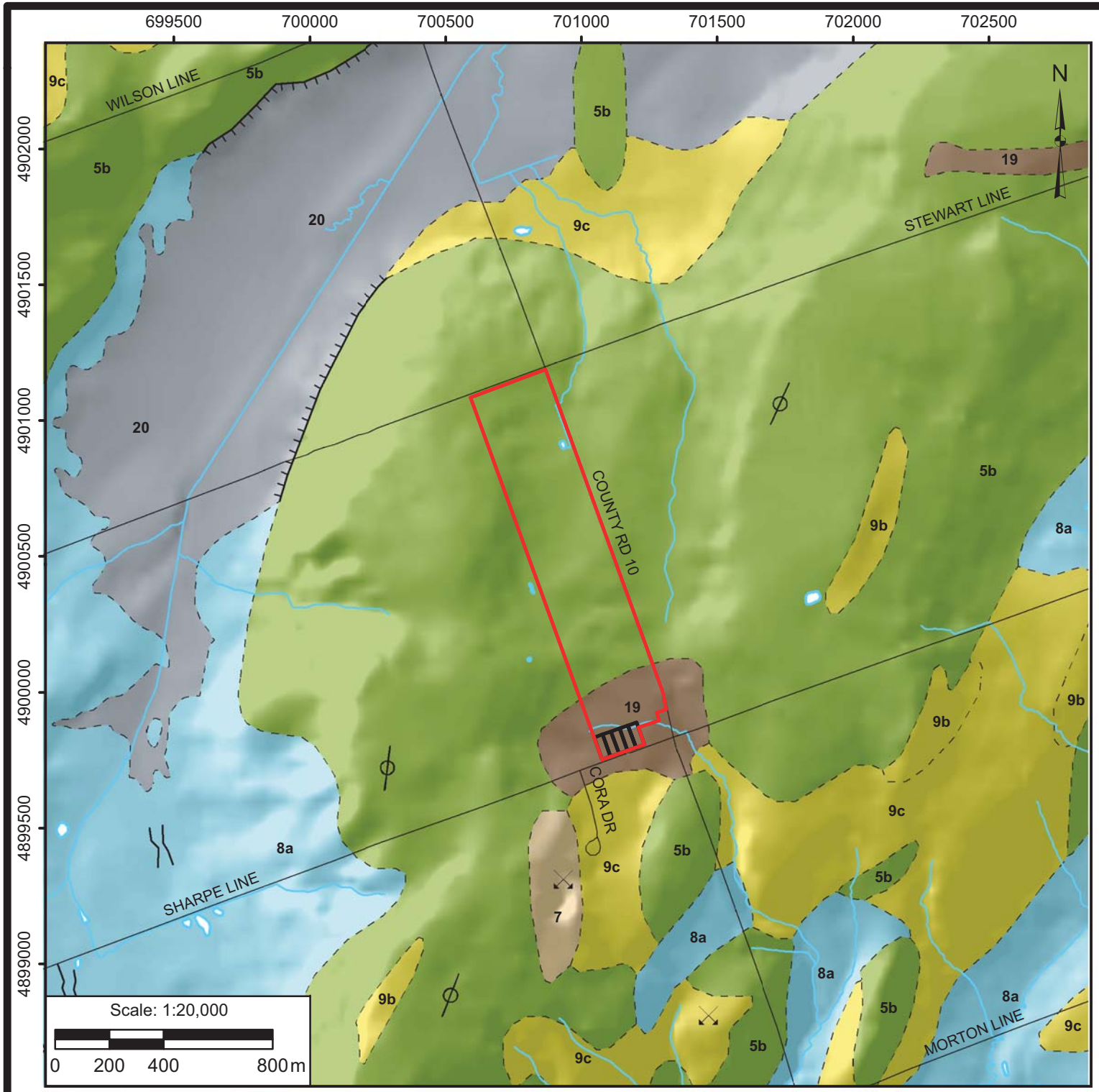
TITLE

Topography and Drainage

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

PROJECT #	FIGURE NO.
23-3279	**2**
DATE	
March 2024	

Environmental Impact Study (EIS)
Proposed Five (5) Lot Residential Subdivision
Sharpe Line, Hamlet of Ida
Part Lot 12, Concession11 (Cavan)
Township of Cavan Monaghan,
County of Peterborough



NAD 1983 UTM Zone 17N

- Approximate Property Boundary
- Proposed Lots
- Sand and Gravel Pit
- Drumlin or Drumlinoid Ridges
- Ribbed or Rogen Moraine (arrows indicate direction of ice flow)
- Fluvial Terrace
- Contact (approximate/assumed)
- 5b — Glacial Deposits (Till): Stone-poor, carbonate-derived silty to sandy till
- 7 — Glaciofluvial deposits
- 8a — Fine-textured glaciolacustrine deposits: Massive-well laminated
- 9b — Coarse-textured glaciolacustrine deposits: Littoral-foreshore deposits
- 9c — Coarse-textured glaciolacustrine deposits: Foreshore-basinal deposits
- 19 — Modern alluvial deposits
- 20 — Organic deposits

Notes: Base maps provided by Land Information Ontario and Natural Resources Canada (2023)

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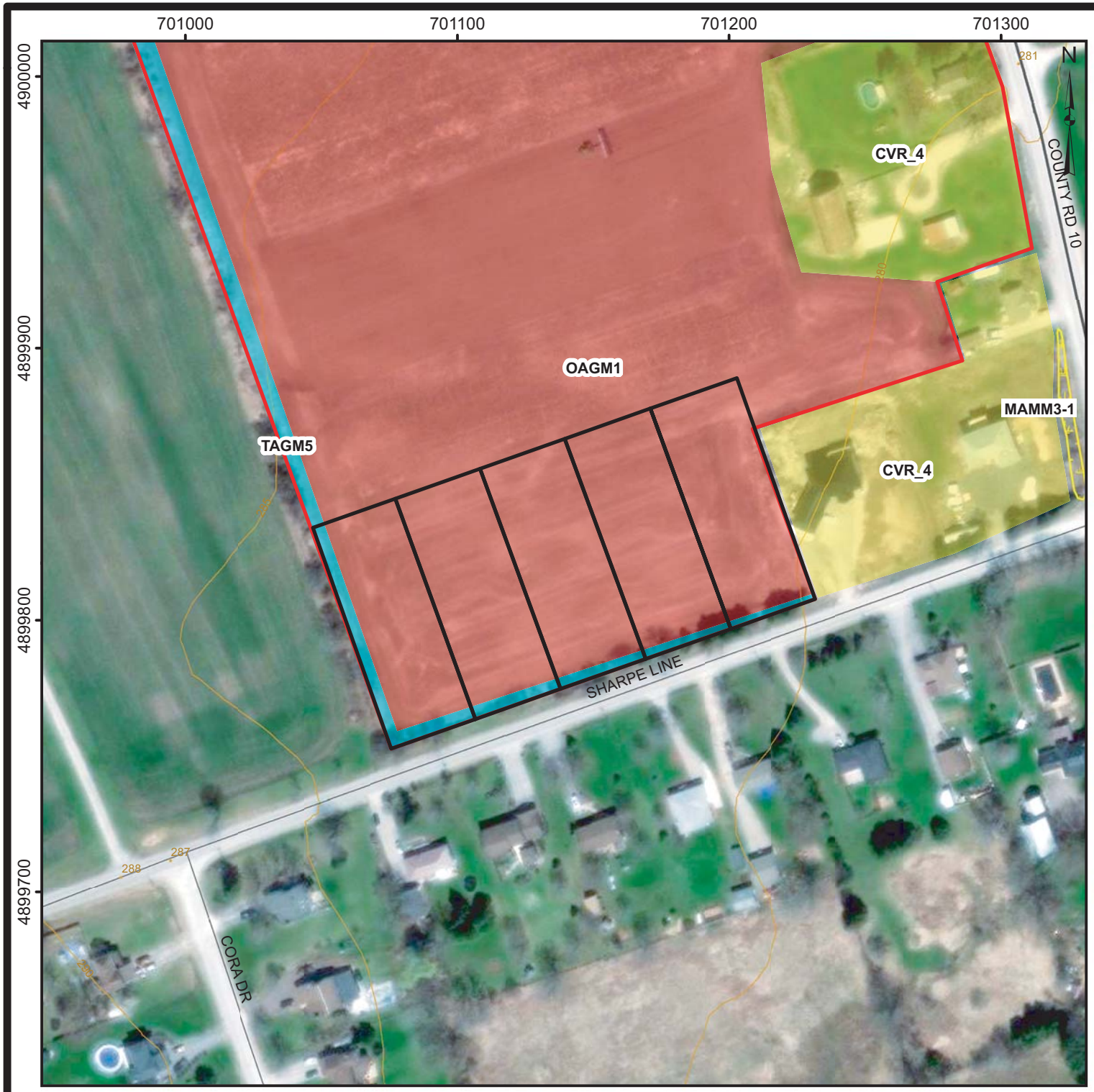
TITLE

Surficial Geology

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

PROJECT #	FIGURE NO.
23-3279	3
DATE	
March 2024	



NAD 1983 UTM Zone 17N

Environmental Impact Study (EIS)
Proposed Five (5) Lot Residential Subdivision
Sharpe Line, Hamlet of Ida
Part Lot 12, Concession11 (Cavan)
Township of Cavan Monaghan,
County of Peterborough

- Approximate Property Boundary
- Proposed Lots
- Annual Row Crops (OAGM1)
- Mineral Fencerow (TAGM5)
- Rural Property (CVR_4)
- Wetland (ORE) - Mixed Mineral Meadow Marsh (MAMM3-1)
- Road
- Contour (5 m Intervals)
- Spot Height (m asl)

Scale: 1:2,000

0 20 40 80 m

Notes: Base maps provided by Land Information Ontario and Natural Resources Canada (2023)

Imagery provided by ESRI (2022)

Feature locations determined by differential GPS (+/- 3.0 m)

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TITLE

Vegetation

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

PROJECT #	FIGURE NO.
23-3279	4
DATE	
March 2024	

NAD 1983 UTM Zone 17N

Environmental Impact Study (EIS)
Proposed Five (5) Lot Residential Subdivision
Sharpe Line, Hamlet of Ida
Part Lot 12, Concession11 (Cavan)
Township of Cavan Monaghan,
County of Peterborough

- Approximate Property Boundary
- Proposed Lots
- Wetland (ORE)
- Wetland VPZ (30 m)
- LIO Watercourse Not Present
- Arterial Road
- Road
- Contour (5 m Intervals)
- Spot Height (m asl)

Scale: 1:2,000

0 20 40 80 m

Notes: Base maps provided by Land Information Ontario and Natural Resources Canada (2023)

Imagery provided by ESRI (2022)

Feature locations determined by differential GPS (+/- 3.0 m)

Optimized for Oakridge Environmental Ltd. printing

TITLE

Constraints

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

PROJECT #	FIGURE NO.
23-3279	5
DATE	
March 2024	

Appendix A

Excerpt from the 2020 Provincial Policy Statement (PPS)

The following has been copied from the 2014 Provincial Policy Statement (PPS):

"*2.1 Natural Heritage*

2.1.1 Natural features and areas shall be protected for the long term.

2.1.2 The diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features.

2.1.3 Natural heritage systems shall be identified in Ecoregions 6E & 7E1, recognizing that natural heritage systems will vary in size and form in settlement areas, rural areas, and prime agricultural areas.

2.1.4 Development and site alteration shall not be permitted in:
a) significant wetlands in Ecoregions 5E, 6E and 7E1; and
b) significant coastal wetlands.

2.1.5 Development and site alteration shall not be permitted in:
a) significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E1;
b) significant woodlands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River)1;
c) significant valleylands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River)1;
d) significant wildlife habitat;
e) significant areas of natural and scientific interest; and
f) coastal wetlands in Ecoregions 5E, 6E and 7E1 that are not subject to policy 2.1.4(b) unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions. Ecoregions 5E, 6E and 7E are shown on Figure 1.

2.1.6 Development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements.

2.1.7 Development and site alteration shall not be permitted in habitat of endangered species and threatened species, except in accordance with provincial and federal requirements.

2.1.8 Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.4, 2.1.5, and 2.1.6 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.

2.1.9 Nothing in policy 2.1 is intended to limit the ability of agricultural uses to continue."

Appendix B

OP Excerpt

The following has been copied from the County of Peterborough Official Plan:

- *"a description of the proposal and statement of rationale for the undertaking;*
- *a description of the existing land use(s) on site and adjacent lands;*
- *the land use designation on site and adjacent lands, as identified by the County and local municipal Official Plans;*
- *a description of alternative development proposals for the site as well as the environmental impacts of the alternatives;*
- *a comprehensive description of the proposal including its direct and indirect effect on the environment and considering both the advantages and disadvantages of the proposal;*
- *an identification of environmental constraint areas;*
- *an environmental inventory of the area under development consideration (plant life, land-based and aquatic wildlife, wetlands, natural landforms, surface waters, hydrogeological features);*
- *a statement of environmental and ecological significance of the area affected by the proposed development;*
- *a statement on how the development will establish or facilitate the establishment of linkages between natural areas within the watershed and adjacent watersheds and how these linkages will contribute to the preservation and enhancement of the natural areas;*
- *a detailed description of mitigating effects;*
- *any additional information requested by the local municipality;*
- *an assessment of options for servicing the development with full municipal or communal water and sewage services as well as the environmental impacts of the servicing options.*

An environmental impact assessment for proposed development within or adjacent to a significant natural heritage feature will include as its study area the natural heritage feature plus the area surrounding that feature as follows:

- *significant wetlands - all lands within 120 metres;*
- *significant portions of the habitat of endangered and threatened species - all lands within 50 metres;*
- *fish habitat - all lands within 30 metres of the high water mark of all watercourses;*

- *significant wildlife habitat - all lands within 50 metres;*

- *significant woodlands south of the southern limit of the Canadian Shield - all lands within 50 metres;*

- *significant valleylands south of the southern limit of the Canadian Shield - all lands within 50 metres;*

- *significant areas of natural and scientific interest (ANSI) - all lands within 50 metres.*"

Appendix C

Species Descriptions

Birds

Bank Swallow (*Riparia riparia*) is listed as "Threatened" by *Species at Risk Ontario* (SARO) and is protected under the *Endangered Species Act* (ESA). This avian species nests in burrows into the banks of silt and sand deposits. Nests tend to be found on the shorelines of rivers and lakes. The Bank Swallow may also inhabit sand and gravel pits. Typically, this species forages on insects in flight, but will also glean insects off the water.

Barn Swallow (*Hirundo rustica*) is listed as "Special Concern" by SARO and is not protected under the ESA. The Barn Swallow inhabits open-rural and urban sites where buildings are situated near watercourses. Nesting is typically sporadic within loose colonies on building structures, bridges and other suitable overhanging structures. The cup-like mud nest is adhered to areas beneath the roof of the structure to conceal the nest from predators and keep it dry. The Barn Swallow feeds on insects by catching them on the wing.

Bobolink (*Dolichonyx oryzivorus*) is listed as "Threatened" by SARO and is protected under the ESA. The Bobolink prefers large tracts of tallgrass areas, either true prairies or hay fields, as it forages low to the ground in search of larvae and seeds.

Canada Warbler (*Cardellina canadensis*) is listed as "Special Concern" by SARO, and is not protected under the ESA. It prefers large tracts of mixed forests on bottomlands within wetlands or drainage courses. The species nests within the upper extremities of the canopy in deciduous and coniferous trees. The Canada Warbler feeds on beetles, caterpillars and common insects. Typically, this species prefers creeks and mixed forests with a coniferous edge along a moving creek, tributary or river system.

Chimney Swift (*Chaetura pelagica*) is listed as "Threatened" by SARO and is protected under the ESA. The Chimney Swift is a somewhat generalist species. It will utilize empty cavity nests found in dead trees within fencerows or may utilize unused chimneys as suggested by its common name. This species is most active in early morning and early evening (i.e., dawn and dusk). It will venture outside of the nesting area and feast on insects during those times. It then flies back to the nesting site, entering the nest one after another in an orderly funnel-shaped sequence.

Common Nighthawk (*Chordeiles minor*) is listed as "Special Concern" by SARO, and is not protected under the ESA. The Common Nighthawk is part of the Nightjar family which prefers forest openings, bogs and sometimes open field/meadow areas. Nesting is on bare ground where both adults feed the young. Feeding can take place during day or night, while the species constantly forages for all types of

insects.

Eastern Meadowlark (*Sturnella magna*) is listed as "Threatened" by SARO and is protected under the ESA. The Eastern Meadowlark is similar to Bobolink, as this species also prefers large tracts of agricultural fields or tallgrass prairies to nest within. Eastern Meadowlark is a ground nester, thus requires the tall grass to conceal its nest and eggs. Feeding includes beetles, crickets and spiders.

Eastern Whip-poor-will (*Anthrostomus vociferus*) is listed as "Threatened" by SARO and is protected under the ESA. The Whip-poor-will prefers a combination of large natural tracts of secondary succession forest, watercourses and edge habitat consisting of meadow areas, with open deciduous and pine woodlands. The Whip-poor-will does not construct a nest, but rather uses the soft leaf litter on the ground to form a nest and lay the eggs directly on the ground. The Whip-poor-will is a nighttime hunter, calling its own name while searching for large flying insects, beetles, moths, mosquitos and sometimes grasshoppers. The Whip-poor-will often choose pine species adjacent to waterways to call from.

Eastern Wood-Pewee (*Contopus virens*) is listed as "Special Concern" by SARO and is not protected under the ESA. This species prefers mixed deciduous and coniferous woodlands which are open or considered edge habitat. Nesting occurs on a tree branch as the species catches insects from a perch.

Golden-winged Warbler (*Vermivora chrysoptera*) is listed as "Special Concern" by SARO and is not protected under the ESA. The Golden-winged Warbler prefers woodland edge habitat with young successional tree species and moist shrubby fields. This species gleans insects on shrubs and the forest floor and nesting occurs on the ground.

Grasshopper Sparrow (*Ammodramus savannarum*) is listed as "Special Concern" by SARO and is not protected under the ESA. The Grasshopper Sparrow prefers large (greater than 5 ha) grassland habitats where it breeds. Grassland habitats include pastures, hayfields, natural prairies, alvars. Nests are typically hidden within the grassland and its preferred diet in the summer is large insects (i.e., Grasshoppers).

Least Bittern (*Ixobrychus exilis*) is listed as "Threatened" by SARO and is protected under the ESA. The Least Bittern inhabits freshwater marshes where tall, impenetrable stands of emergent vegetation are utilized for coverage. The Least Bittern may build up a hunting platform in search of small fish, insects, and amphibians.

Red-headed Woodpecker (*Melanerpes erythrocephalus*) is listed as "Endangered" by SARO and is protected under the ESA. It prefers a combination of deciduous forests and rural development areas, similar to a park-like setting. The deciduous

species can be oak or maple, however, the understory must be meadow-like or maintained lawnspace in parklands. This species will either roost within cavities constructed by other woodpeckers, or create its own cavity. It feeds on beetles, caterpillars and common insects that are found within the bark of trees.

Rusty Blackbird (*Euphagus carolinus*) is listed as "Special Concern" by SARO and is not protected under the ESA. It breeds in habitats that are dominated by coniferous forest with wetlands nearby including bogs, marshes and beaver ponds. During the winter, it is found in wet woodlands, swamps and pond edges and often forages in agricultural lands.

Wood Thrush (*Hylocichia mustelina*) is listed as "Special Concern" by SARO and is not protected under the ESA. The Wood Thrush enjoys relatively undisturbed, mature woodlands. Nesting occurs low in the fork of a tree as this species forages for berries and insects at ground level. Similar to the Eastern Wood-Pewee, this species prefers large tracts of woodland.

Amphibians & Reptiles

Midland Painted Turtle (*Chrysemys picta marginata*) is listed as "Special Concern" by COSEWIC and is currently under review by COSSARO. Midland Painted Turtles spend the majority of their lives in water. They prefer shallow water with aquatic vegetation, soft mud, and leaf litter at the bottom. Typically found basking on logs, rocks, and shorelines in sunlight. Midland Painted Turtles nest between mid-spring and early summer. They tend to choose gravely, sandy and loam soils for nesting.

Western Chorus Frog - Great Lakes - St. Lawrence - Canadian Shield population (*Pseudacris maculata pop. 1*) is listed as "Not at Risk" by SARO, however is listed as "Threatened" by SARA and COSEWIC. The Western Chorus Frog is a small frog which is brown to olive gray in colour. It has three dark lines on its back, a wider line on each side, and broad line across the eyes. Its call is a "cre-ee-ee-eek" sound similar to a fingernail being dragged across a comb. The Western Chorus prefers lowland habitats with open or discontinuous canopy. Also preferring areas which can become vernal pools in the spring. Vegetation to typical to find Western Chorus Frogs are: sedges (*Carex spp.*), cattails (*Typha spp.*), Reed Canary Grass (*Phalaris arundinacea*), Red Osier Dogwood (*Cornus stolonifera*), willows (*Salix spp.*), Speckled Alder (*Alnus incana ssp. rugosa*), Black Ash (*Fraxinus nigra*), and Red Maple (*Acer rubrum*).

Plants

Black Ash (*Fraxinus nigra*): is listed as "Endangered" by SARO and will be protected under the ESA with an exemption for areas without Emerald ash borer (*Agrilus planipennis*). Black Ash is a shade tolerant species that prefers moist alkaline soil. Black Ash occurs in and around swamp type environments, areas which have seasonal flooding, and moist upland forests.

Appendix D

NHIC Database

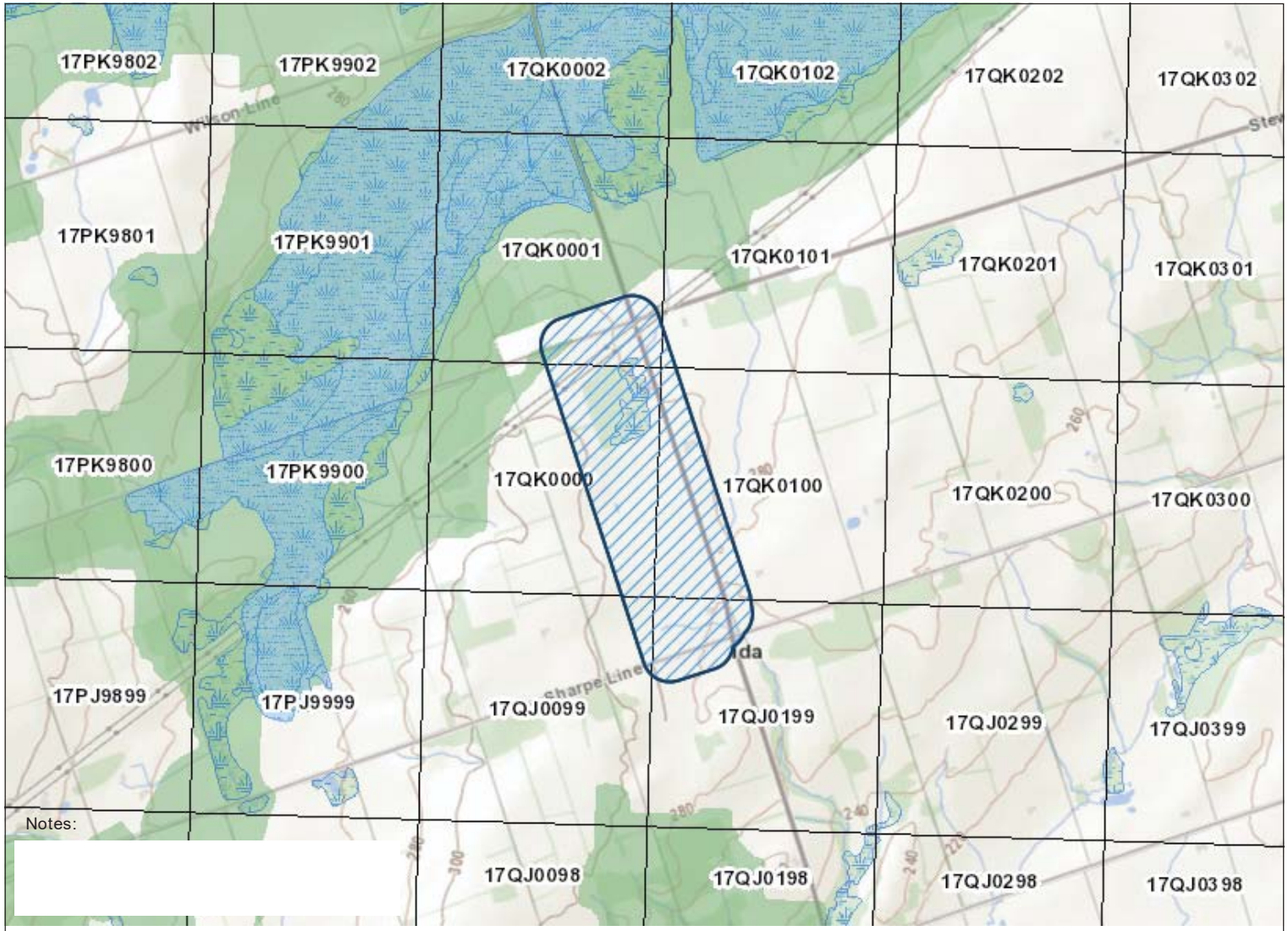
Ontario

Ministry of Natural Resources and Forestry

Make-a-Map: Natural Heritage Areas

NHIC Map

Map created:5/16/2023



Legend

- NHIC 1 Km Grid
- ANSI
- Earth Science Provincially Significant/sciences de la terre d'importance provinciale
- Earth Science Regionally Significant/sciences de la terre d'importance régionale
- Life Science Provincially Significant/sciences de la vie d'importance provinciale
- Life Science Regionally Significant/sciences de la vie d'importance régionale
- Evaluated Wetland
- Provincially Significant/considérée d'importance provinciale
- Non-Provincially Significant/non considérée d'importance provinciale
- Unevaluated Wetland
- Conservation Reserve
- Provincial Park
- Natural Heritage System

1.3 0 0.66 1.3 Kilometres

Absence of a feature in the map does not mean they do not exist in this area.

NHIC Data

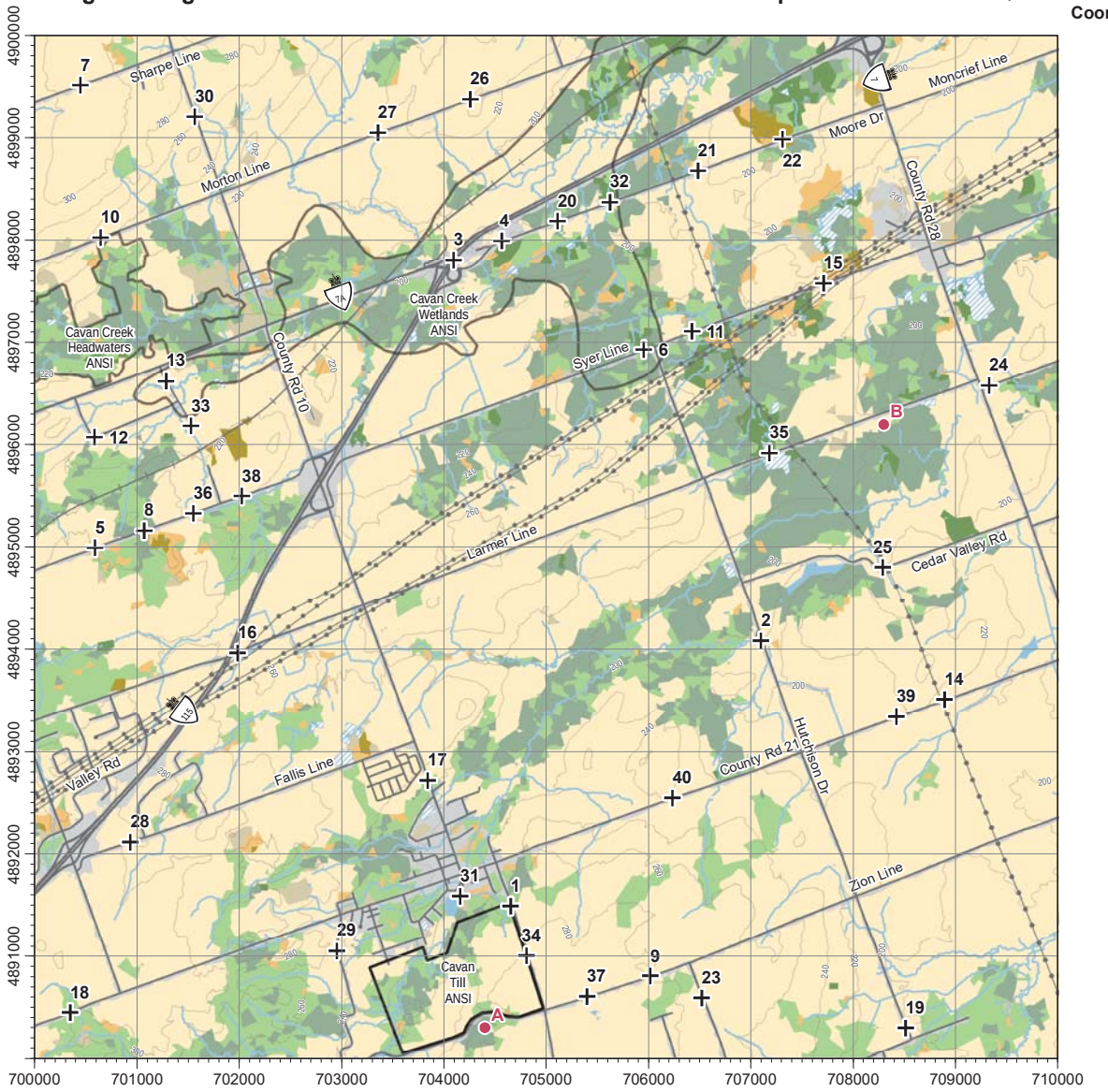
To work further with this data select the content and copy it into your own word or excel documents.

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT	COMMENTS
1055835	SPECIES	Midland Painted Turtle	Chrysemys picta marginata	S4		SC	17QK0001	
1055835	SPECIES	Eastern Wood-pewee	Contopus virens	S4B	SC	SC	17QK0001	
1055835	SPECIES	Western Chorus Frog - Great Lakes - St. Lawrence - Canadian Shield population	Pseudacris maculata pop. 1	S4	NAR	THR	17QK0001	
1055835	SPECIES	Golden-winged Warbler	Vermivora chrysoptera	S3B	SC	THR	17QK0001	
1055835	SPECIES	Bobolink	Dolichonyx oryzivorus	S4B	THR	THR	17QK0001	
1055834	SPECIES	Bobolink	Dolichonyx oryzivorus	S4B	THR	THR	17QK0000	
1055743	SPECIES	Eastern Meadowlark	Sturnella magna	S4B,S3N	THR	THR	17QJ0099	
1055743	SPECIES	Bobolink	Dolichonyx oryzivorus	S4B	THR	THR	17QJ0099	
1055845	SPECIES	Eastern Wood-pewee	Contopus virens	S4B	SC	SC	17QK0101	
1055845	SPECIES	Golden-winged Warbler	Vermivora chrysoptera	S3B	SC	THR	17QK0101	
1055845	SPECIES	Bobolink	Dolichonyx oryzivorus	S4B	THR	THR	17QK0101	
1055844	SPECIES	Eastern Meadowlark	Sturnella magna	S4B,S3N	THR	THR	17QK0100	
1055844	SPECIES	Bobolink	Dolichonyx oryzivorus	S4B	THR	THR	17QK0100	
1055753	SPECIES	Eastern Meadowlark	Sturnella magna	S4B,S3N	THR	THR	17QJ0199	
1055753	SPECIES	Bobolink	Dolichonyx oryzivorus	S4B	THR	THR	17QJ0199	

Appendix E

OBBA Database

Region / Région: 17 **Square / Parcelle: 17TQJ09**



Predefined point count coordinates
Coordonnées des points d'écoute prédéterminés

POINT +	EASTING UTM Est	NORTHING UTM Nord
1	704653	4891489
2	707099	4894084
3	704096	4897805
4	704565	4897991
5	700591	4894994
6	705954	4896930
7	700448	4899513
8	701070	4895161
9	706020	4890805
10	700647	4898026
11	706423	4897109
12	700587	4896073
13	701284	4896623
14	708895	4893509
15	707710	4897577
16	701987	4893964
17	703841	4892718
18	700346	4890446
19	708510	4890294
20	705112	4898187
21	706484	4898678
22	707313	4898987
23	706521	4890590
24	709330	4896582
25	708291	4894800
26	704256	4899376
27	703357	4899050
28	700934	4892115
29	702955	4891051
30	701567	4899207
31	704160	4891584
32	705622	4898371
33	701527	4896183
34	704810	4891004
35	707184	4895917
36	701552	4895330
37	705400	4890604
38	702025	4895497
39	708423	4893341
40	706237	4892546

Number of off-road point counts
Nombre de points d'écoute hors route

Broadleaf forest:	2	Grassland:	0
Coniferous forest:	0	Wetland:	0
Mixed forest:	3	Shrubland:	0

Predefined / Prédéterminés: 20
Off-road / Hors route: 5

Atlas-2 off-road point ● **Point hors route Atlas-2**

0 1 km

Atlas des oiseaux nicheurs Ontario Breeding Bird Atlas

Legend **Légende**

Expressway or highway	Autoroute ou route nationale (asphaltée)
Regional or local road	Route régionale ou locale (asphaltée ou non)
Resource / Recreation	Ressource / route récréative
Rail line	Chemin de fer
Utility corridor	Ligne de transport d'énergie
Watercourse	Rivière ou ruisseau
Protected or conserved area	Zone protégée ou conservée
Fire disturbance since 2000	Incendie perturbé depuis 2000
Broadleaf forest 11	Forêt de feuillus
Coniferous forest 1	Forêt de conifères
Mixed forest 13	Forêt mixte
Shrubland 2	Milieu arbustif
Grassland	Prairie
Barren 1	Dénudé
Wetland	Milieu humide
Agriculture 65	Milieu agricole
Water	Eau
Developed area 7	Zone développée
Unclassified	Non classifié

The approximate percent coverage of each habitat type is indicated by the numbered box in the legend.

La couverture approximative est indiquée en pourcentage dans le rectangle coloré de la légende.

Cartographic production by Birds Canada
Production cartographique par oiseaux Canada

Note: The project partners are in no way responsible for any inaccuracies, mistakes or omissions in the information that appears on this map.

Avis : Les responsables du projet d'atlas ne peuvent être tenus responsables de toute inexactitude, erreur ou omission concernant les informations apparaissant sur cette carte.

6° Universal Transverse Mercator (UTM) Projection; Zone 17, Central Meridian -81°; North American Datum 1983 (NAD 83)

Projection universelle transverse de Mercator (UTM) 6° Zone 17, méridien central -81°; Système de référence géodésique nord-américain 1983 (NAD 83)

BIRDS CANADA OISEAUX CANADA

March 2021 / mars 2021

https://www.birdsontario.org/

17TQJ09

Northumberland

Region / Région: 17

BIRDS CANADA
OISEAUX CANADA

Square Summary (17TQJ09) [change]

	#species				#hours		#pc done	
	poss	prob	conf	total	total	peak	road	offrd
Curr.	38	33	16	87	40.4	10.2	0	0
Prev.	36	34	42	112	87.1	—	37	

Region summary (#17: Northumberland, ON)

#squares	#sq with data	#species	#squares (pc)	
			target	compl.
41	45	163	41	9
41	41	187	0	40

Target number of point counts in this square: 25 in total: 20 road side, 5 off road (Broadleaf Forest in 2, Mixed Forest in 3). Please try to ensure that each off-road station is located such that the entire 100m radius circle is within the prescribed habitat.

SPECIES	Prev.	Code	%
Canada Goose	FY	AE	71
Mute Swan			22
Trumpeter Swan			22
Wood Duck	FY		60
Blue-winged Teal §	FY	H	13
Northern Shoveler ‡			0
Gadwall			2
American Wigeon ‡			2
Mallard	FY	FY	66
American Black Duck ‡			0
Northern Pintail ‡			0
Green-winged Teal ‡			2
Redhead †			0
Hooded Merganser			26
Common Merganser ‡			4
Red-breasted Merganser ‡			0
Ruddy Duck ‡			0
Wild Turkey	NE	D	75
Ruffed Grouse	FY	T	73
Ring-necked Pheasant ‡	H		11
Pied-billed Grebe			22
Rock Pigeon (Feral Pigeon)	AE	H	73
Mourning Dove	AE	T	93
Yellow-billed Cuckoo			33
Black-billed Cuckoo	H	H	51
Common Nighthawk §	H		8
Eastern Whip-poor-will §	S		22
Chimney Swift §	V		26
Ruby-throated Hummingbird	H	H	46
King Rail †			0
Virginia Rail	A	FY	37
Sora	A		17
Common Gallinule §			13

SPECIES	Prev.	Code	%
American Coot ‡			0
Sandhill Crane ‡		H	13
Piping Plover †			2
Killdeer §	FY	DD	75
Upland Sandpiper †			8
American Woodcock	S		53
Wilson's Snipe	S	S	26
Spotted Sandpiper	H	H	42
Ring-billed Gull §			11
Herring Gull §			6
Great Black-backed Gull †			0
Caspian Tern ‡			4
Black Tern †			4
Common Tern § ‡			2
Common Loon	H		11
Double-crested Cormorant §			11
American Bittern	S	S	33
Least Bittern †			17
Great Blue Heron §	H		35
Great Egret †			4
Green Heron §	H	H	53
Black-crowned Night-Heron †			4
Turkey Vulture	P	H	68
Osprey	V	AE	46
Northern Harrier	T	V	35
Sharp-shinned Hawk	H		13
Cooper's Hawk	H		37
Northern Goshawk ‡			4
Bald Eagle ‡			4
Red-shouldered Hawk			15
Broad-winged Hawk	H	H	53
Red-tailed Hawk	DD	H	68
Eastern Screech-Owl	A	H	35

SPECIES	Prev.	Code	%
Great Horned Owl	H	T	31
Barred Owl	S	H	33
Long-eared Owl ‡			0
Northern Saw-whet Owl			2
Belted Kingfisher	T	T	73
Yellow-bellied Sapsucker	A	T	75
Red-headed Woodpecker †			24
Red-bellied Woodpecker		AE	75
Downy Woodpecker	N	S	84
Hairy Woodpecker	N	S	84
Pileated Woodpecker	H	H	77
Northern Flicker	AE	T	91
American Kestrel §	P	T	64
Merlin		H	51
Peregrine Falcon ‡			4
Olive-sided Flycatcher §			0
Eastern Wood-Pewee §	D	S	84
Yellow-bellied Flycatcher ‡			0
Alder Flycatcher	S	S	71
Willow Flycatcher	A	T	48
Least Flycatcher	T	S	48
Eastern Phoebe	N	T	80
Great Crested Flycatcher	T	S	86
Eastern Kingbird	D	FY	91
Yellow-throated Vireo ‡			8
Blue-headed Vireo			28
Warbling Vireo	P	T	84
Red-eyed Vireo	NE	S	95
Loggerhead Shrike †			0
Blue Jay	A	H	91
American Crow	CF	T	93
Common Raven		T	75
Black-capped Chickadee	A	T	93

SPECIES	Prev.	Code	%
Horned Lark §	FY	S	22
Northern Rough-winged Swallow	H		40
Purple Martin §	H		17
Tree Swallow	NY	AE	80
Bank Swallow §	AE		17
Barn Swallow §	CF	V	88
Cliff Swallow §	N	AE	28
Golden-crowned Kinglet			15
Red-breasted Nuthatch	S	T	71
White-breasted Nuthatch	FY	T	82
Brown Creeper	H	S	35
Blue-gray Gnatcatcher			6
House Wren	AE	T	91
Winter Wren	S	S	51
Sedge Wren ‡			4
Marsh Wren	S	H	37
Carolina Wren ‡			13
European Starling	AE	CF	93
Gray Catbird	A	A	88
Brown Thrasher	A	T	91
Northern Mockingbird ‡			8
Eastern Bluebird	CF	CF	64
Veery	S	S	73
Hermit Thrush	A		26
Wood Thrush §	NY	S	80
American Robin	NY	NE	95
Cedar Waxwing	FY	H	88
House Sparrow	CF	T	68
House Finch	S	S	42
Purple Finch	A	S	60
Red Crossbill ‡			0
White-winged Crossbill ‡			0
Pine Siskin ‡			2

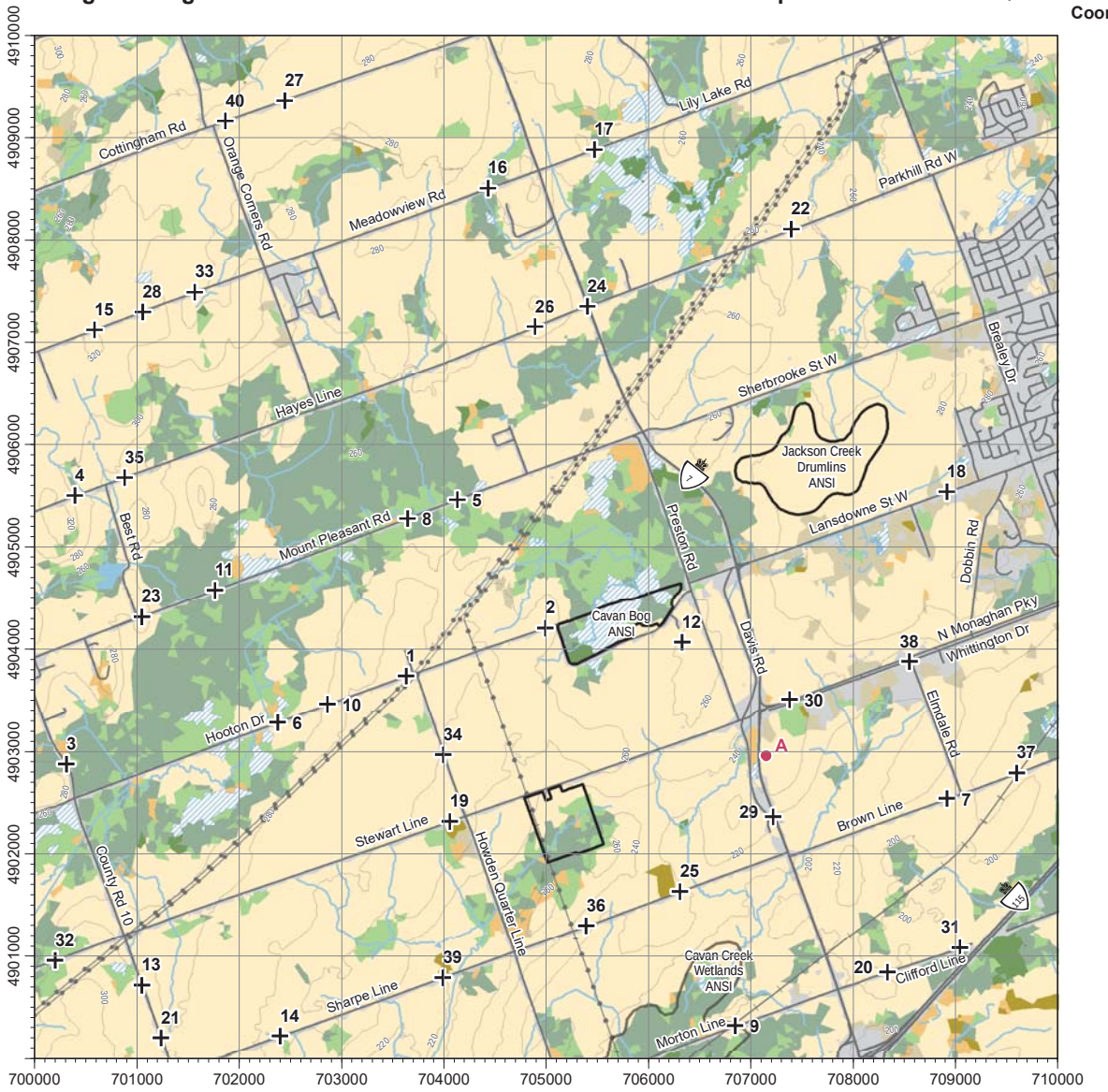
SPECIES	Prev.	Code	%
American Goldfinch	T	FY	93
Grasshopper Sparrow §	CF		55
Chipping Sparrow	CF	T	91
Clay-colored Sparrow	S		26
Field Sparrow §	CF		77
Dark-eyed Junco ‡			0
White-throated Sparrow	A		60
Vesper Sparrow	CF	T	62
Savannah Sparrow	FY	T	86
Song Sparrow	FY	T	100
Lincoln's Sparrow ‡			0
Swamp Sparrow	S	T	75
Eastern Towhee §	S		64
Bobolink §	P	S	68
Eastern Meadowlark §	CF	NB	84
Orchard Oriole			31
Baltimore Oriole	CF	T	88
Red-winged Blackbird	CF	CF	95
Brown-headed Cowbird	P	T	73
Common Grackle	CF	CF	91
Ovenbird	NY		73
Louisiana Waterthrush †			0
Northern Waterthrush	A	S	55
Golden-winged Warbler †	V		8
Blue-winged Warbler			31
Black-and-white Warbler	A	S	75
Nashville Warbler	H		42
Mourning Warbler	S	S	48
Common Yellowthroat	DD	T	95
Hooded Warbler ‡			0
American Redstart	P		82
Cerulean Warbler †			0
Northern Parula ‡			0

SPECIES	Prev.	Code	%
Magnolia Warbler	S		11
Blackburnian Warbler			20
Yellow Warbler	DD	T	88
Chestnut-sided Warbler	S		73
Black-throated Blue Warbler			22
Pine Warbler	S		66
Yellow-rumped Warbler			26
Black-throated Green Warbler	A		53
Canada Warbler §			22
Scarlet Tanager	A		57
Northern Cardinal	FY	T	91
Rose-breasted Grosbeak	N	S	82
Indigo Bunting	S	T	82

This list includes all breeding species expected in the region #17 (Northumberland). Underlined species are those that you should try to add to this square (17TQJ09). They have not yet been reported in this square, but have been reported in more than 50% of the squares in this region so far. "Prev." is the code for the highest breeding evidence for that species in square 17TQJ09 in the previous atlas. "Code" is the code for the highest breeding evidence for that species in square 17TQJ09 over the last 5 years. The % columns give the percentage of squares in that region where that species was reported (this gives an idea of the expected chance of finding that species in region #17). Rare/Colonial Species Report Forms should be completed for species marked: § (Species of interest), ‡ (regionally rare), † (provincially rare). An up-to-date version of this sheet is available from https://naturecounts.ca//nc//atlas/squaresummaryform.jsp?squareID=17TQJ09&lang=EN Data current as of **15/05/2023 16:26**.

Region / Région: 16

Square / Parcelle: 17TQK00



Predefined point count coordinates
Coordonnées des points d'écoute prédéterminés

POINT +	EASTING UTM Est	NORTHING UTM Nord
1	703631	4903738
2	704994	4904208
3	700309	4902878
4	700395	4905502
5	704133	4905464
6	702377	4903286
7	708916	4902540
8	703647	4905280
9	706848	4900321
10	702863	4903462
11	701765	4904576
12	706329	4904069
13	701047	4900716
14	702398	4900216
15	700585	4907124
16	704432	4908507
17	705470	4908887
18	708917	4905541
19	704060	4902316
20	708337	4900844
21	701237	4900201
22	707393	4908107
23	701048	4904317
24	705401	4907353
25	706311	4901632
26	704890	4907153
27	702444	4909365
28	701053	4907300
29	707220	4902363
30	707380	4903506
31	709047	4901083
32	700200	4900958
33	701564	4907491
34	703994	4902967
35	700882	4905679
36	705391	4901294
37	709598	4902791
38	708549	4903878
39	703992	4900790
40	701863	4909164

Number of off-road point counts
Nombre de points d'écoute hors route

Broadleaf forest:	2	Grassland:	0
Coniferous forest:	0	Wetland:	0
Mixed forest:	3	Shrubland:	0

Predefined / Prédéterminés: 20
Off-road / Hors route: 5

Atlas-2 off-road point ● **Point hors route Atlas-2**

0 1 km

Atlas des oiseaux nicheurs Ontario Breeding Bird Atlas

Legend **Légende**

Expressway or highway	Autoroute ou route nationale (asphaltée)
Regional or local road	Route régionale ou locale (asphaltée ou non)
Resource / Recreation	Ressource / route récréative
Rail line	Chemin de fer
Utility corridor	Ligne de transport d'énergie
Watercourse	Rivière ou ruisseau
Protected or conserved area	Zone protégée ou conservée
Fire disturbance since 2000	Incendie perturbé depuis 2000
Broadleaf forest 7	Forêt de feuillus
Coniferous forest 1	Forêt de conifères
Mixed forest 14	Forêt mixte
Shrubland 1	Milieu arbustif
Grassland	Prairie
Barren 2	Dénudé
Wetland 2	Milieu humide
Agriculture 65	Milieu agricole
Water	Eau
Developed area 8	Zone développée
Unclassified	Non classifié

The approximate percent coverage of each habitat type is indicated by the numbered box in the legend.

La couverture approximative est indiquée en pourcentage dans le rectangle coloré de la légende.

Cartographic production by Birds Canada
Production cartographique par oiseaux Canada

Note: The project partners are in no way responsible for any inaccuracies, mistakes or omissions in the information that appears on this map.

Avis : Les responsables du projet d'atlas ne peuvent être tenus responsables de toute inexactitude, erreur ou omission concernant les informations apparaissant sur cette carte.

6° Universal Transverse Mercator (UTM) Projection; Zone 17, Central Meridian -81°; North American Datum 1983 (NAD 83)

Projection universelle transverse de Mercator (UTM) 6° Zone 17, méridien central -81°; Système de référence géodésique nord-américain 1983 (NAD 83)

BIRDS CANADA OISEAUX CANADA

March 2021 / mars 2021

https://www.birdsontario.org/

17TQK00

Peterborough

Region / Région: 16

BIRDS CANADA
OISEAUX CANADA

Square Summary (17TQK00) [change]

	#species				#hours		#pc done	
	poss	prob	conf	total	total	peak	road	offrd
Curr.	31	39	43	113	376.3	82.8	20	0
Prev.	35	29	31	95	41.9	—	37	

Region summary (#16: Peterborough, ON)

#squares	#sq with data	#species	#squares (pc)	
			target	compl.
60	60	169	60	24
60	60	185	0	60

Target number of point counts in this square: 25 in total: 20 road side, 5 off road (Broadleaf Forest in 2, Mixed Forest in 3). Please try to ensure that each off-road station is located such that the entire 100m radius circle is within the prescribed habitat.**Predef. completed:** [01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 14, 15, 16, 17, 19, 20, 22, 23]

SPECIES	Prev.	Code	%
Canada Goose	NE	AE	80
Mute Swan ‡			3
Trumpeter Swan		FY	23
Wood Duck	D	FY	78
Blue-winged Teal ‡	P	T	10
Northern Shoveler ‡			1
Gadwall ‡			0
American Wigeon ‡			0
Mallard	FY	FY	81
American Black Duck			5
Northern Pintail ‡			0
Green-winged Teal ‡	P		0
Redhead †			0
Ring-necked Duck			21
Lesser Scaup ‡			0
Hooded Merganser		H	56
Common Merganser ‡			21
Ruddy Duck ‡			0
Wild Turkey	H	D	88
Ruffed Grouse	FY	FY	85
Ring-necked Pheasant ‡			0
Pied-billed Grebe			23
Rock Pigeon (Feral Pigeon)	V	V	50
Mourning Dove	NY	AE	81
Yellow-billed Cuckoo			50
Black-billed Cuckoo		T	68
Coccyzus sp. ‡	S		0
Common Nighthawk §			21
Eastern Whip-poor-will §			33
Chimney Swift ‡			11
Ruby-throated Hummingbird	D	H	70
Virginia Rail	T	FY	56
Sora	S	A	18

SPECIES	Prev.	Code	%
Common Gallinule ‡		S	13
American Coot ‡			1
Sandhill Crane ‡			38
Killdeer §	NE	T	53
Upland Sandpiper †			15
American Woodcock	T	FY	55
Wilson's Snipe	S	D	48
Spotted Sandpiper		H	46
Ring-billed Gull § ‡			1
Herring Gull §			28
Caspian Tern ‡			0
Black Tern †			1
Common Tern § ‡			0
Common Loon	S		71
Double-crested Cormorant § ‡			5
American Bittern	S	T	66
Least Bittern †		FY	31
Great Blue Heron §	H	H	63
Green Heron §	P	T	48
Turkey Vulture	H	H	88
Osprey			50
Northern Harrier	H	D	26
Sharp-shinned Hawk	P	H	23
Cooper's Hawk		S	21
Northern Goshawk ‡	NY		6
Bald Eagle ‡			11
Red-shouldered Hawk	S		33
Broad-winged Hawk		FY	78
Red-tailed Hawk	A	H	48
Eastern Screech-Owl	T	S	11
Great Horned Owl ‡	S	H	21
Barred Owl			43
Long-eared Owl ‡			6

SPECIES	Prev.	Code	%
Short-eared Owl †			0
Northern Saw-whet Owl			6
Belted Kingfisher	CF	P	88
Yellow-bellied Sapsucker	FY	FY	96
Red-headed Woodpecker †		H	15
Red-bellied Woodpecker		FY	38
Black-backed Woodpecker ‡			1
Downy Woodpecker	A	FY	83
Hairy Woodpecker	P	FY	91
Pileated Woodpecker	S	T	90
Northern Flicker	S	T	91
American Kestrel §	T	P	50
Merlin		FY	45
Peregrine Falcon ‡			1
Olive-sided Flycatcher ‡			10
Eastern Wood-Pewee §	T	T	100
Yellow-bellied Flycatcher ‡			0
Alder Flycatcher	T	FY	91
Willow Flycatcher	T	T	36
Least Flycatcher	S	S	91
Eastern Phoebe	CF	NB	100
Great Crested Flycatcher	P	T	100
Eastern Kingbird	FY	T	90
Yellow-throated Vireo			31
Blue-headed Vireo		S	78
Philadelphia Vireo ‡			0
Warbling Vireo	T	S	75
Red-eyed Vireo	S	T	100
Loggerhead Shrike †			0
Canada Jay ‡			3
Blue Jay	FY	V	100
American Crow	CF	CF	95
Common Raven		AE	91

SPECIES	Prev.	Code	%
Black-capped Chickadee	FY	AE	98
Boreal Chickadee ‡			0
Horned Lark ‡	S		8
Northern Rough-winged Swallow		H	20
Purple Martin ‡			5
Tree Swallow	V	AE	81
Bank Swallow §			13
Barn Swallow §	FY	V	75
Cliff Swallow §		NB	18
Ruby-crowned Kinglet ‡			0
Golden-crowned Kinglet		S	30
Red-breasted Nuthatch		FY	93
White-breasted Nuthatch	S	T	88
Brown Creeper		T	71
Blue-gray Gnatcatcher ‡			3
House Wren	S	CF	76
Winter Wren	S	T	96
Sedge Wren ‡			10
Marsh Wren	S	S	46
Carolina Wren ‡			5
European Starling	NY	CF	80
Gray Catbird	CF	CF	80
Brown Thrasher	S	A	75
Northern Mockingbird ‡			3
Eastern Bluebird	CF	CF	53
Veery	S	CF	100
Swainson's Thrush			15
Hermit Thrush		S	76
Wood Thrush §	N	T	86
American Robin	NY	NE	98
Cedar Waxwing	N	FY	88
House Sparrow	P	H	38
Evening Grosbeak ‡			1

SPECIES	Prev.	Code	%
House Finch	S	S	18
Purple Finch	S	FY	96
Red Crossbill ‡			21
White-winged Crossbill ‡			3
Pine Siskin ‡	S		30
American Goldfinch	NY	FY	93
Grasshopper Sparrow §		S	21
Chipping Sparrow	FY	FY	95
Clay-colored Sparrow ‡			18
Field Sparrow §		T	61
Dark-eyed Junco ‡			3
White-throated Sparrow	T	T	96
Vesper Sparrow		A	28
Savannah Sparrow	CF	T	58
Song Sparrow	CF	T	100
Lincoln's Sparrow ‡			5
Swamp Sparrow	CF	CF	100
Eastern Towhee §		S	48
Bobolink §	FY	T	50
Eastern Meadowlark §	D	D	58
Orchard Oriole ‡			5
Baltimore Oriole	NY	A	75
Red-winged Blackbird	CF	FY	100
Brown-headed Cowbird	T	FY	63
Common Grackle	CF	CF	98
Ovenbird	NE	T	100
Northern Waterthrush	D	T	91
Golden-winged Warbler †		S	21
Blue-winged Warbler ‡			11
Black-and-white Warbler	S	T	96
Tennessee Warbler ‡			0
Nashville Warbler	S	T	90
Mourning Warbler	S		71

SPECIES	Prev.	Code	%
Common Yellowthroat	A	CF	100
Hooded Warbler ‡			0
American Redstart	T	T	96
Cape May Warbler ‡			0
Cerulean Warbler †			3
Northern Parula ‡			26
Magnolia Warbler	H	S	70
Bay-breasted Warbler ‡			0
Blackburnian Warbler		H	66
Yellow Warbler	CF	CF	85
Chestnut-sided Warbler	S	S	93
Black-throated Blue Warbler			58
Pine Warbler		S	93
Yellow-rumped Warbler	S	S	83
Prairie Warbler †			0
Black-throated Green Warbler	S	FY	93
Canada Warbler §	S	CF	61
Scarlet Tanager	S	H	95
Northern Cardinal	T	NB	50
Rose-breasted Grosbeak	S	FY	98
Indigo Bunting	T	S	95

This list includes all breeding species expected in the region #16 (Peterborough). Underlined species are those that you should try to add to this square (17TQK00). They have not yet been reported in this square, but have been reported in more than 50% of the squares in this region so far. "Prev." is the code for the highest breeding evidence for that species in square 17TQK00 in the previous atlas. "Code" is the code for the highest breeding evidence for that species in square 17TQK00 over the last 5 years. The % columns give the percentage of squares in that region where that species was reported (this gives an idea of the expected chance of finding that species in region #16). Rare/Colonial Species Report Forms should be completed for species marked: § (Species of interest), ‡ (regionally rare), † (provincially rare). An up-to-date version of this sheet is available from https://naturecounts.ca//nc//atlas/squaresummaryform.jsp?squareID=17TQK00&lang=EN Data current as of **15/05/2023 16:26**.

Appendix F

eBird

Change location | Year-round, All years

Stewart Line willow swamp

Peterborough County (/region/CA-ON-PB?yr=all&m=),
Ontario (/region/CA-ON?yr=all&m=),
CA (/region/CA?yr=all&m=)

Map(/hotspots?hs=L15089650&yr=all&m=)

Directions(https://www.google.com/maps/search/?api=1&query=44.2328414,-78.4987753)

Hotspot navigation

Overview (/hotspot/L15089650?yr=all&m=)

Illustrated Checklist (/hotspot/L15089650/media?yr=all&m=)

VIEW MY...

My eBird (/myebird/L15089650)

Life List (/lifelist/L15089650)

Target Species (/targets?r1=L15089650&bmo=1&emo=12)

Checklists (/mychecklists/L15089650)

EXPLORE...

Hotspot Map (/hotspots?hs=L15089650&yr=all&m=)

Bar Charts (/barchart?r=L15089650&yr=all&m=)

Media (https://ebird.org/media/catalog?regionCode=L15089650)

Printable Checklist (/printableList?regionCode=L15089650&yr=all&m=)

32
Species observed
(/hotspot/L15089650?yr=all&m=)

4
Complete checklists
(/hotspot/L15089650/activity?yr=all&m=)

1.	**Canada Goose** *Branta canadensis*	4	16 Apr 2023	Matthew Tobey
2.	**Wood Duck** *Aix sponsa*	1	16 Apr 2023	Matthew Tobey
3.	**Mallard** *Anas platyrhynchos*	1	16 Apr 2023	Matthew Tobey
4.	**Mourning Dove** *Zenaida macroura*	3	16 Apr 2023	Matthew Tobey
5.	**Wilson's Snipe** *Gallinago delicata*	5	16 Apr 2023	Matthew Tobey
6.	**Great Blue Heron** *Ardea herodias*	1	16 Apr 2023	Matthew Tobey
7.	**Yellow-bellied Sapsucker** *Sphyrapicus varius*	2	16 Apr 2023	Matthew Tobey
8.	**Downy Woodpecker** *Dryobates pubescens*	2	16 Apr 2023	Matthew Tobey
9.	**Pileated Woodpecker** *Dryocopus pileatus*	1	16 Apr 2023	Matthew Tobey
10.	**Northern Flicker** *Colaptes auratus*	2	16 Apr 2023	Matthew Tobey
11.	**Blue Jay** *Cyanocitta cristata*	4	16 Apr 2023	Matthew Tobey
12.	**American Crow** *Corvus brachyrhynchos*	7	16 Apr 2023	Matthew Tobey
13.	**Common Raven** *Corvus corax*	1	16 Apr 2023	Matthew Tobey
14.	**Black-capped Chickadee** *Poecile atricapillus*	3	16 Apr 2023	Matthew Tobey
15.	**Winter Wren** *Troglodytes hiemalis*	1	16 Apr 2023	Matthew Tobey
16.	**American Robin** *Turdus migratorius*	1	16 Apr 2023	Matthew Tobey
17.	**Purple Finch** *Haemorhous purpureus*	1	16 Apr 2023	Matthew Tobey
18.	**American Goldfinch** *Spinus tristis*	3	16 Apr 2023	Matthew Tobey
19.	**Chipping Sparrow** *Spizella passerina*	1	16 Apr 2023	Matthew Tobey
20.	**Song Sparrow** *Melospiza melodia*	5	16 Apr 2023	Matthew Tobey
21.	**Swamp Sparrow** *Melospiza georgiana*	4	16 Apr 2023	Matthew Tobey
22.	**Red-winged Blackbird** *Agelaius phoeniceus*	14	16 Apr 2023	Matthew Tobey
23.	**Brown-headed Cowbird** *Molothrus ater*	1	16 Apr 2023	Matthew Tobey
24.	**Rusty Blackbird** *Euphagus carolinus*	6	16 Apr 2023	Matthew Tobey
25.	**Northern Cardinal** *Cardinalis cardinalis*	2	16 Apr 2023	Matthew Tobey

26.	**Northern Shrike** *Lanius borealis*	1	5 Feb 2023	Matthew Tobey
27.	**American Tree Sparrow** *Spizelloides arborea*	2	5 Feb 2023	Matthew Tobey
28.	**Golden-crowned Kinglet** *Regulus satrapa*	1	27 Sep 2022	Patrick Kramer
29.	**Willow Flycatcher** *Empidonax traillii*	3	24 May 2021	Drew Monkman
30.	**Northern Waterthrush** *Parkesia noveboracensis*	3	24 May 2021	Drew Monkman
31.	**Common Yellowthroat** *Geothlypis trichas*	4	24 May 2021	Drew Monkman
32.	**Yellow Warbler** *Setophaga petechia*	2	24 May 2021	Drew Monkman

Appendix G

Site Photos

Photo A (Above): This photo was taken in the south-west corner of the site facing east along where the proposed severances are proposed on the north side of the fencerow.

Photo B (Above): This photo was taken in the south-west corner of the site facing east along where frontage of the proposed severances would occur along Sharpe Line.

Photo C (Above): This photo was taken in the south-west corner of the site facing north overlooking the area LIO presented as a watercourse feature within their mapping, which ORE staff deemed not present.

Photo D (Above): This photo was taken in the south-east corner of the site facing north-west to highlight conditions of the proposed severances.

Environmental Impact Study (EIS)
Proposed Five (5) Lot Residential Subdivision
Sharpe Line, Hamlet of Ida
Part Lot 12, Concession11 (Cavan)
Township of Cavan Monaghan, County of Peterborough

TITLE
Site Photos

Date taken: May 25, 2023

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

PROJECT # 23-3279

APPENDIX **G**

DATE March 2024

Optimized for Oakridge Environmental Ltd. printing

Appendix H

Species List

Species List

KINGDOM	Common Name	Scientific Name	SARO	SARA
Animalia				
	American Crow	Corvus brachyrhynchos		
	American Goldfinch	Spinus tristis		
	American Robin	Turdus migratorius		
	Baltimore Oriole	Icterus galbula		
	Black Rat	Rattus rattus		
	Black-capped Chickadee	Poecile atricapillus		
	Blue Jay	Cyanocitta cristata		
	Boreal Chickadee	Poecile hudsonicus		
	Brown Thrasher	Toxostoma rufum		
	Brown-headed Cowbird	Molothrus ater		
	Cabbage White	Pieris rapae		
	Canada Goose	Branta canadensis		
	Cedar Waxwing	Bombycilla cedrorum		
	Chipping Sparrow	Spizella passerina		
	Common Grackle	Quiscalus quiscula		
	Common Ground Dove	Columbina passerina		
	Coyote	Canis latrans		
	Dark-eyed Junco	Junco hyemalis		
	Deer Mouse	Peromyscus maniculatus		
	Eastern Chipmunk	Tamias striatus		
	Eastern Kingbird	Tyrannus tyrannus		
	Ebony Jewelwing	Calopteryx maculata		
	European Starling	Sturnus vulgaris		
	Gray Catbird	Dumetella carolinensis		
	Hobomok Skipper	Poanes hobomok		
	House Wren	Troglodytes aedon		

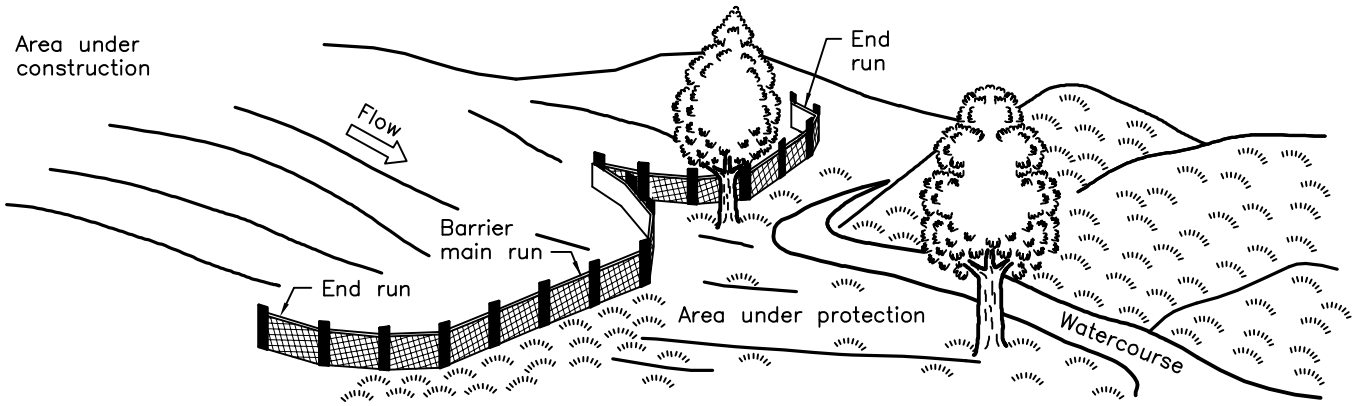
KINGDOM	Common Name	Scientific Name	SARO	SARA
	Indigo Bunting	Passerina cyanea		
	Killdeer	Charadrius vociferus		
	Mourning Dove	Zenaida macroura		
	Northern Cardinal	Cardinalis cardinalis		
	Northern Flicker	Colaptes auratus		
	Northern Pearly-Eye	Lethe anthedon		
	Orange Sulphur	Colias eurytheme		
	Purple Finch	Haemorhous purpureus		
	Red-tailed Hawk	Buteo jamaicensis	NAR	
	Red-winged Blackbird	Agelaius phoeniceus		
	Ring-billed Gull	Larus delawarensis		
	Ruby-throated Hummingbird	Archilochus colubris		
	Song Sparrow	Melospiza melodia		
	Star-nosed Mole	Condylura cristata		
	Striped Skunk	Mephitis mephitis		
	Tree Swallow	Tachycineta bicolor		
	Turkey Vulture	Cathartes aura		
	Viper's Bugloss Moth	Ethmia bipunctella		
	Warbling Vireo	Vireo gilvus		
	White-tailed Deer	Odocoileus virginianus		
	Wild Turkey	Meleagris gallopavo		
	Yellow Warbler	Setophaga petechia		
Plantae				
	Alsike Clover	Trifolium hybridum		
	Basswood	Tilia americana		
	Black Swallowwort	Vincetoxicum nigrum		
	Bladder Campion	Silene vulgaris		
	Bristle-leaved Sedge	Carex eburnea		
	Broad-leaved Cattail	Typha latifolia		
	Bull Thistle	Cirsium vulgare		

KINGDOM	Common Name	Scientific Name	SARO	SARA
	Canada Bluegrass	Poa compressa		
	Canada Goldenrod	Solidago canadensis		
	Chokecherry	Prunus virginiana		
	Coltsfoot	Tussilago farfara		
	Common Burdock	Arctium minus		
	Common Buttercup	Ranunculus acris		
	Common Dandelion	Taraxacum officinale		
	Common Lilac	Syringa vulgaris		
	Common Mullein	Verbascum thapsus		
	Common Ragweed	Ambrosia artemisiifolia		
	Common Sow-thistle	Sonchus oleraceus		
	Common St. John's-wort	Hypericum perforatum		
	Common Timothy	Phleum pratense		
	Dudley's Rush	Juncus dudleyi		
	Eastern Prickly Gooseberry	Ribes cynosbati		
	Eastern White Cedar	Thuja occidentalis		
	English Hawthorn	Crataegus monogyna		
	English Plantain	Plantago lanceolata		
	Eurasian Black Bindweed	Fallopia convolvulus		
	European Buckthorn	Rhamnus cathartica		
	Fern-leaved Yarrow	Achillea filipendulina		
	Field Pumpkin	Cucurbita pepo		
	Fireberry Hawthorn	Crataegus chrysocarpa		
	Flat-top White Aster	Doellingeria umbellata var. umbellata		
	Garden Asparagus	Asparagus officinalis		
	Garden Bird's-foot Trefoil	Lotus corniculatus		
	Garlic Mustard	Alliaria petiolata		
	Japanese Barberry	Berberis thunbergii		
	Lance-leaved Self-heal	Prunella vulgaris ssp. lanceolata		
	Manitoba Maple	Acer negundo		

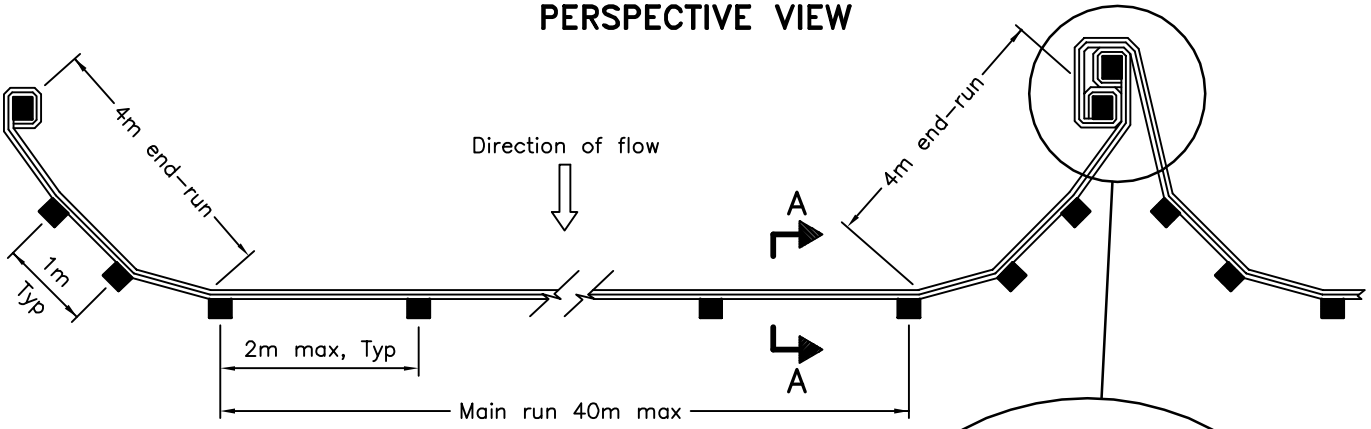
KINGDOM	Common Name	Scientific Name	SARO	SARA
	Meadow Ryegrass	Lolium pratense		
	Narrow-leaved Cattail	Typha angustifolia		
	New England Aster	Symphyotrichum novae-angliae		
	Northern Yellow-eyed-grass	Xyris montana		
	Norway Maple	Acer platanoides		
	Orchard Grass	Dactylis glomerata		
	Paper Birch	Betula papyrifera		
	Purple Loosestrife	Lythrum salicaria		
	Red Clover	Trifolium pratense		
	Riverbank Grape	Vitis riparia		
	Rugel's Plantain	Plantago rugelii		
	Smooth Crabgrass	Digitaria ischaemum		
	Spotted Jewelweed	Impatiens capensis		
	Spotted Joe Pye Weed	Eutrochium maculatum		
	Staghorn Sumac	Rhus typhina		
	Sulphur Cinquefoil	Potentilla recta		
	Sweet Crabapple	Malus coronaria		
	Tatarian Honeysuckle	Lonicera tatarica		
	Trembling Aspen	Populus tremuloides		
	Tufted Vetch	Vicia cracca		
	Upright Brome	Bromus erectus		
	Virginia Creeper	Parthenocissus quinquefolia		
	White Amaranth	Amaranthus albus		
	White Elm	Ulmus americana		
	Wild Carrot	Daucus carota		
	Wild Chicory	Cichorium intybus		
	Wild Strawberry	Fragaria virginiana		

Appendix I

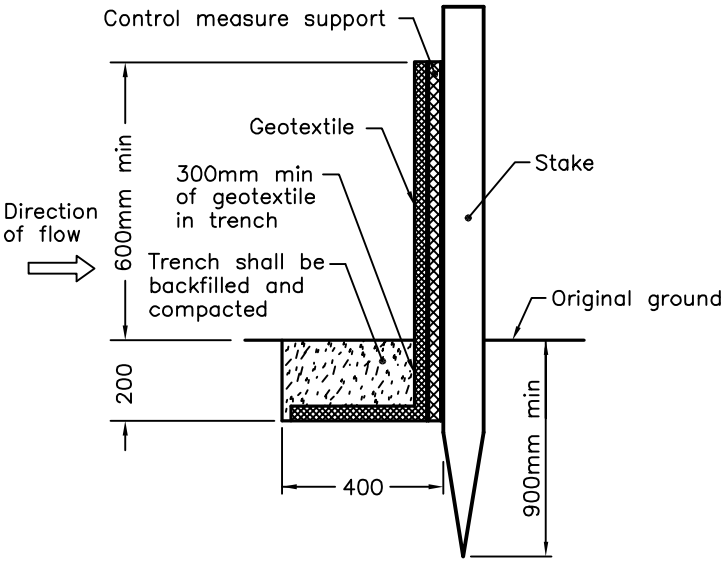
OPSD For Silt Fence Installation



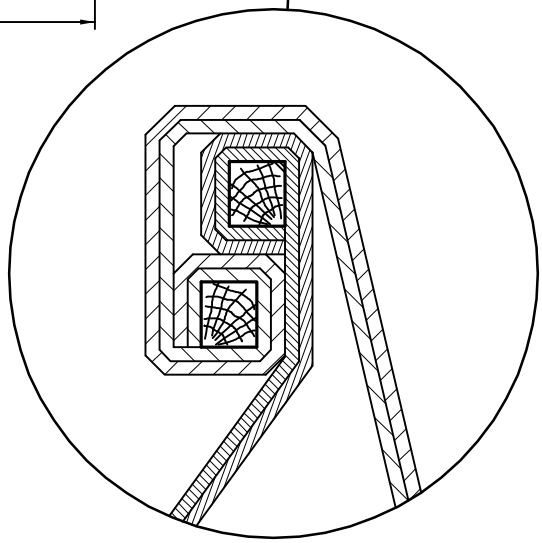
PERSPECTIVE VIEW



PLAN



SECTION A–A



JOINT DETAIL

NOTE:

A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev	2
HEAVY–DUTY SILT FENCE BARRIER			
	OPSD 219.130		