

**ENVIRONMENTAL IMPACT STUDY
PROPOSED TWO LOT SEVERANCE**

- MRS. SHARON MOORE -

**465 Cooper Road
Lot 15, Concession 3, Dummer Township
County of Peterborough, Ontario**

March 19, 2021

Reference No.: R20-842

Prepared for
Otonabee Region Conservation Authority

On Behalf Of
Mrs. Sharon Moore



GRACE & ASSOCIATES INC.
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April 2, 2021

Otonabee Region Conservation Authority
250 Milroy Drive
Peterborough, Ontario
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Attention: Ms. Alex Bradburn, Planner

**Re: Scoped Environmental Impact Assessment Summary
Proposed Two Residential Lot Severance
465 Cooper Road, Part Lot 15, Concession 3, Township of Douro-Dummer
County of Peterborough, Ontario**

1.0 INTRODUCTION

Grace & Associates Inc. was retained by Mrs. Sharon Moore, property owner and proponent, to complete a Scoped Environmental Impact Study (EIS) in support of a two (2) lot severance from the southeast corner of the property located at 465 Cooper Road. The proposed severances will front 4th Line Dummer Road in Lot 15, Concession 3, Dummer Township, County of Peterborough, Ontario.

The proposed lot severance is approximately 0.81 hectares (2 acres) located within an agricultural field. The site is actively farmed (ie. hay) and is lined with mature deciduous treed hedgerows. There are no structures on the proposed severed lots.

The EIS summarizes the results of the site investigation and analysis conducted on the subject property to determine potential impacts to natural heritage features and functions present on and within 120 metres of the proposed two (2) residential lot severance. Potential impacts to natural heritage features, that either exist or may exist on the site, are discussed along with mitigation measures.

This letter report summarizes the results of a records search, field investigation, and analysis conducted by Grace & Associates Inc., in conjunction with our associate biologists of Blazing Star Environmental, to determine the impact of the proposed development on the on-site and surrounding natural heritage features and functions. The complete EIS report, including mitigative measure for lot development, is presented in Appendix A.

2.0 POLICIES

This scoped environmental impact study has been undertaken to meet the requirements of governing policies developed to protect natural features and functions, including:

- Provincial Policy Statement, 2020
- County of Peterborough Official Plan
- A Place to Grow - Growth Plan for the Greater Golden Horseshoe, 2020
- Endangered Species Act, 2007
- Conservation Authorities Act, 2019
- Migratory Birds Convention Act, 1994
- Fisheries Act (1985)

3.0 EIS SUMMARY

Following a records review of available provincial and municipal records of natural heritage features and provincial SAR within 10 km of the property, the field investigation conducted on June 12, 2020 included:

- Ecological land classification (ELC) completed following 1998 ELC standards (Lee et al. 1998);
- Two unevaluated wetland boundaries were delineated adjacent to the subject property following the Ontario Wetland Evaluation System (OWES) (OMNRF 2014) guidelines for wetland delineation by certified wetland evaluators Monique Aarts and Michelle Hill;
- Surveys to assess suitability of habitat for Significant Wildlife Habitat (SWH) and Species At Risk (SAR) habitat; and
- Incidental observations of wildlife species were recorded during all field investigation surveys.

3.1 Natural Heritage Features

The three vegetation communities identified on the proposed severed lots include open agriculture, deciduous thicket, and mixed swamp Ecosites. The site investigation identified natural heritage features and suitable SWH and SAR habitat present on the site or within 120 metres of the property which include the following:

Natural Heritage Features present or within 120 metres of the property:

- no provincially or locally significant wetlands on, or within, 120 metres of the site;
- an unevaluated wetland is located adjacent to the subject property;
- woodland within the study area is not significant based on the significant woodland size criteria;
- no significant valleylands, ANSI or fish habitat on, or within, 120 metres of the site;
- fish habitat within 120 metres of the site within the unevaluated wetland.

Significant Wildlife Habitat (SWH) present or within 120 metres of the property:

- seeps and springs may occur within 120 metres of the proposed severance;
- amphibian breeding habitat (woodland) may occur within the vernal pools present within 120 metres that meets the minimum size criteria.

Species at Risk (SAR) Habitat present or within 120 metres of the property:

- suitable habitat occurs on the site for bobolink and eastern meadowlark;
- suitable habitat within 120 metres of the site for butternut and eastern meadowlark;
- potential habitat exists on-site for eastern wood-pewee, grasshopper sparrow, monarch, and wood thrush;

- potential habitat present within 120 metres of the proposed development for:
 - Canada warbler (*Cardellina canadenses*) in the south east corner of forest swamp;
 - eastern wood-pewee (*Contopus virens*) in forested area southeast of the site;
 - grasshopper sparrow (*Ammodramus savannarum*) in open grassland, hayfields and pasture areas with well-drained, sandy soil;
 - monarch (*Danaus plexippus*) in habitats that provide wildflowers to feed on;
 - red-headed woodpecker (*Melanerpes erythrocephalus*) in the forested area southeast of the site in dead trees and snags;
 - snapping turtle (*Chelydra serpentina*) in wet areas within the forested area southeast of the site;
 - wood thrush (*Hylocichla mustelina*) in the forested area southeast of the site;
 - little brown myotis, northern myotis and tri-colored bat in the forested area southeast of the site.

3.2 Species at Risk Habitat

3.2.1 Bobolink

Bobolink (*Dolichonyx oryzivorus*) and their habitat may be negatively affected by development since they nest on the ground and forage in grasslands and agricultural fields of 5-50 hectares. A bobolink was observed during the field investigation in the northeastern field.

3.2.2 Butternut

Three butternut (*Juglans cinerea*) were observed in the forested area north of the proposed severances. Soil conditions in the area are appropriate for the species. Butternut may occur in the mixed swamp in the southeast corner of the study area.

3.2.3 Canada warbler

Suitable habitat for Canada warbler (*Cardellina canadenses*) may occur within 120 metres of the project footprint in the southeast corner of forest swamp. Canada warbler nests on or close to the ground on roots or mossy logs, along stream banks or on hummocks, often hidden by the dense shrub layer. No observations of Canada warbler, or signs of their presence, were found during the field investigation.

3.2.4 Eastern meadowlark

Eastern meadowlark (*Sturnella magna*) are obligate grassland species that nest on the ground, and forage in tall grasslands and open areas including pastures and hay fields. The minimum area requirement to support breeding of this species is 5 hectares. Suitable habitat for eastern meadowlark was observed and territorial calls were heard on-site and within the northeastern field.

3.2.5 Eastern wood-pewee

Eastern wood-pewee (*Contopus virens*) The on-site deciduous forest and mixed swamp appeared to be suitable habitat for this species. No observations of eastern wood-pewee, or signs of their presence, were found on the property.

3.2.6 Grasshopper sparrow

Grasshopper sparrow (*Ammodramus savannarum*) typically nest and forage in open grassland, hayfields and pasture areas with well-drained, sandy soil. No observations of grasshopper sparrow, or signs of their presence, were found on the project footprint during the field investigation.

3.2.7 Little brown myotis

Little brown myotis (*Myotis lucifugus*) and their habitat was not observed on the site, however, mature decaying trees with exfoliating bark suitable for roosting within 120 metres of the site may be present in the forested area to the southeast. No observations of little brown myotis, or signs of their presence, were found on the site during the field investigation.

3.2.8 Monarch

The mixed meadow contains suitable monarch (*Danaus plexippus*) foraging habitat. No observations of monarchs, or signs of their presence, were found on the property.

3.2.9 Northern myotis

Northern myotis (*Myotis septentrionalis*) and their habitat may be negatively affected by this project. Northern myotis roost in hollow trees, tree crevices, and under exfoliating bark. No suitable snag trees were observed on the site, however, suitable habitat may be present within the forested area to the southeast of the site. No observations of northern myotis, or signs of their presence, were found on the site during the field investigation.

3.2.10 Tri-colored bat

Tri-colored bat (*Perimyotis subflavus*) use older dense to open forests to form day roosts and maternity colonies. During the study area investigation, no suitable snag trees were observed on the project footprint. However, there may be such trees in the forested area to the southeast which could be suitable habitat for tri-colored bat. No observations of tri-colored bat, or signs of their presence, were found on the site during the field investigation.

3.2.11 Snapping turtle

Snapping turtle (*Chelydra serpentina*) may occur within 120 metres in the forested area to the southeast of the site. Snapping turtles breed, forage, and hibernate in wetlands, preferring shallow waters with leaf littered soft, muddy bottoms to hide. No observations of snapping turtle, or signs of their presence, were found on the project footprint during the field investigation.

3.2.12 Wood thrush

Suitable habitat for wood thrush (*Hylocichla mustelina*) may occur within 120 metres of the project footprint as there is a forested area south east of the project footprint that fits the habitat description required. Wood thrush nest in large forest mosaics with mature moist deciduous and mixed forests with well-developed undergrowth of variable sizes, preferring to build their nests in living saplings, shrubs, or trees. No observations of wood thrush, or signs of their presence, were found on the project footprint during the field investigation.

4.0 IMPACT ASSESSMENT

The potential impacts of the proposed development of two (2) residential lots on the natural heritage features that are, or are likely, present on and within 120 metres of the property include:

- Release of any contaminants (e.g., gasoline, oil, sediments) in surface water and groundwater during driveway development activities may impact turtle wintering areas, snapping turtle habitat, butternut habitat, and unevaluated wetlands;
- Loss of roosting, nesting and perching habitat used by wood thrush, eastern wood pewee, and bats where development will occur;
- Lot development activities (e.g., vegetation clearing, grading, fill placement) may disturb nesting birds; and,
- Increased vulnerability of the property to invasion by non-native species.

4.1. Wetland Impact

The proposed two residential lot severance will not impact the adjacent unevaluated wetland. All development will occur a minimum of 30 metres from the forested area to the southeast in the open fields.

The 30 metre vegetated buffer will prevent nutrients, sediment, and pollutants from entering the woodlot and unevaluated wetland. Lot development, including the recommended avoidance and mitigation measures, will not negatively impact the overall ecological functioning of the adjacent woodlot or wetland features.

Future residents are encouraged to landscape using native plant species such as native flowering herbaceous plants, shrubs and trees. Planting a variety of native flowering species with different bloom times will provide monarchs with the nectar and pollen needed to reproduce in the spring and summer and migrate in the fall. Other options that will support monarch breeding include native milkweed species such as common milkweed (*Asclepias syriaca*), swamp milkweed (*Asclepias incarnata*), and butterfly milkweed (*Asclepias tuberosa*).

5.0 AVOIDANCE AND MITIGATION MEASURES

To ensure there are no negative impact resulting from the proposed development, the following measures are presented:

- Limit tree clearing to minimal area required for a standard residential driveway and entrance and avoid large trees where possible;
- Maintain a minimum 30 metre vegetated buffer between the development and the woodlot to the southeast of the site;
- Develop and implement an erosion and sediment control plan following provincial best practices outlined in *Erosion and Sediment Control for Urban Construction* guideline to prevent

contamination of surface and groundwater during driveway development;

- Conduct vegetation removal outside of the breeding bird season (April 15th to July 31st) and avoid removing large trees; and,
- Ensure heavy machinery used during road construction has been cleaned following the *Clean Equipment Protocol for Industry* (Halloran 2013) to prevent establishment of non-native species in the significant woodland.

6.0 DEVELOPMENT CONSIDERATIONS

Excavated material, such as topsoil, will be used as soil cover and/or backfill in other areas of the site. All proposed works shall be completed with due diligence and with consideration to minimize adverse effects to the natural environment. Mitigative measures will be undertaken to reduce or eliminate soil loss and erosion from wind and/or water during construction.

The natural environment at the site should be preserved as best as possible, with the following considerations to be followed:

- The exact location of the proposed developments shall be staked in the field prior to any site preparation activities to confirm the location is outside the environmental buffer.
- Existing vegetation shall be maintained on-site where possible.
- No fill shall be placed outside of the any of the proposed development areas. If fill is added to the site, it should be stabilized and vegetated as soon as possible.
- Diffuse and directional lighting shall be implemented to further minimize the intrusion of light pollution into the forest edge.
- Roof leaders shall outlet onto the grassed surfaces to allow for infiltration. Roof leaders should not be directed to the steep slope along the eastern edge of the proposed lots as this may erode and destabilize the slope.

6.1 Fill Characterization

For construction of any future residences and other on-site structures, including driveways, only inert, contaminant free fill material shall be obtained from a licensed pit for the development of the severed lots. If requested, the proponent should be prepared to provide proof of the origin and quality of the fill material to ensure the control of pollution and the conservation of land are not adversely affected. Best management practices shall be implemented to maintain water balance and for sediment and erosion control.

The importation of clean granular fill will maintain the recharge capabilities of the site. On-site fill will be graded to allow for infiltration of surface runoff. Permeable fill will maintain, or enhance the recharge characteristics, to ensure the development will have no significant impact on the natural heritage features or impact the hydrologic function of the wetland on adjacent lands.

A Fill Placement, Excavation, Grade Modifications permit will be required from Otonabee Conservation.

The permit will be for the importation of fill greater than 20 m³ and less than 500 m³.

6.2 Soil Erosion Control Measures

During construction, care should be taken to reduce the potential for soil erosion of any stockpiled fill on the property. Erosion rates vary depending on the slope, precipitation, wind (speed, directions, and velocity), and the season of the year. To reduce the potential for soil erosion, work plans should be designed to minimize the length of time and amount of fill that is stockpiled on the property. Stockpiled material should be covered where practical.

Siltation curtains will be installed and maintained around the entire construction area until construction is complete and the site is stabilized to ensure sediment laden runoff does not enter the roadside ditches or have an opportunity to flow towards the wetland and lake.

Care should be taken to avoid excavating within the drip lines of mature deciduous trees to ensure that roots and surrounding soil remain undisturbed. Soil conditions at the base of the trees should not be altered or compacted.

6.3 Grading and Drainage

The driveways will be sloped to convey surface water away as sheet flow where possible in order to minimize channelized flow, erosion and sedimentation.

6.4 Revegetation Plan

Establishment of a vegetative cover on disturbed areas as soon as practical after the completion of the construction will reduce soil loss and improve the appearance of the altered site. Revegetation of the area disturbed by construction should be conducted by seeding or sodding.

7.0 CONCLUSIONS AND RECOMMENDATIONS

The proposed two residential lot development is not anticipated to negatively impact the natural heritage features, potential significant wildlife habitat, unevaluated wetland and woodlands in the adjacent lands, provided avoidance and mitigation measures are followed. The impacts are avoidable and are not anticipated to lead to residual effects if on-site works are completed in accordance with the best management practices and mitigative measures.

Potential impacts are to be avoided by following the avoidance and mitigation measures presented, but not limited to, maintaining a minimum 30 metre vegetation buffer between the southern lot and the forested area to the southeast, developing and implementing an erosion and sediment control plan to prevent contamination of habitat during future construction, as well as limiting any tree removal to the minimal area required for a standard residential driveway. In addition to the feature setback, the following mitigation measures are recommended:

1. Construction activities for driveway and any future residential development shall be limited during the breeding bird season (April 15th to July 31st). During that period, it is recommended that heavy machinery will be minimized on-site. Light duty work, should be acceptable, as these noises are typically heard within existing residential areas. Workers should be vigilant and check work areas for the presence of breeding birds and nests containing eggs and/or young.
2. Erosion and sediment controls are to follow provincial best practices outlined in *Erosion and Sediment Control for Urban Construction Guideline* to prevent contamination of habitat during construction (GGHA CAs 2006).
3. All proposed work should be completed with due diligence and with consideration to minimize adverse effects to the natural environment. Implementation of recommended construction measures will minimize soil erosion during construction:
4. The driveways are to be sloped to convey surface water away as sheet flow where possible in order to minimize channelized flow, erosion and sedimentation.
5. A siltation fence/curtain shall be installed and maintained and remain in place until construction is completed and the site is stabilized to protect the neighbouring vegetated areas from erosion and sedimentation.
6. Implementation of recommended construction measures will minimize soil erosion during construction. These measures include (i) reducing the amount of disturbed and stockpiled soil, (ii) covering stockpiled soil, and (iii) re-seeding immediately upon completion of construction.
7. Best management practices shall be applied to this development by limiting negative impacts by (i) including directional lighting and (ii) no introduction of exotic or invasive species for landscaping.

It is in our opinion that the proposed severance will not negatively impact the natural heritage features, including significant wildlife habitat, species at risk, adjacent wetlands and fish habitat, provided that the mitigation and avoidance measures are implemented.

8.0 STATEMENT OF QUALIFICATIONS

This document was prepared by Grace & Associates Inc., a geological and environmental consulting firm that provides services to meet the demands of government regulations within an urban setting. Grace & Associates Inc. specializes in the principle disciplines of the earth sciences - geology, hydrogeology and engineering. Relocated to Lindsay in 1991 from Brooklin (Whitby), the firm has undertaken numerous geological and environmental studies throughout Ontario, Eastern Canada and South America during the past thirty (30) years. Our services have been provided on many of these studies on behalf of other respected engineering firms, private companies and individuals.

Our environmental consultants have extensive experience in environmental and geological studies, and are constantly upgrading their knowledge of current environmental practices and legislation. The study outlined herein was conducted by an experienced environmental geologist who has received the professional designations of *Professional Geoscientist* by the Association of Professional Geoscientists of Ontario, *Certified Environmental Consultant* by the Environmental Assessment Association and is a *Certified Engineering Technician* by the Ontario Association of Certified Engineering Technicians and Technologists.

The site investigation was conducted by our associate biologists, Mr. John Urquhart M.Sc., Sr. Biologist, Ms. Monique Aarts, Conservation Biologist, and Kaitlyn Hall, Species at Risk Ecologist with Blazing Star Environmental. Mr. Urquhart and Ms. Aarts are qualified Biologist/Ecologists with over 10 years experience completing Environmental Impact Studies and Species at Risk assessments throughout Ontario.

9.0 STATEMENT OF LIMITATIONS

This letter report was prepared by Grace & Associates Inc. for use of the property owner, Mrs. Sharon Moore, and any use of this report by a third party, or reliance upon it for a decision based upon it, is the sole and exclusive responsibility of the third party. Grace & Associates Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of any decisions, actions made, or reliance based upon this report.

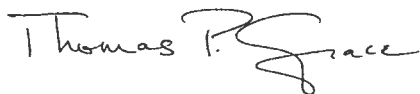
Notwithstanding any provisions with this study to the contrary the obligations and liabilities to Grace & Associates Inc. under the study, whether based upon breach of contract, tort, including negligence, infringement of patents and indemnities, trade secrets or other intellectual property rights, fundamental breach or otherwise, shall be limited in the aggregate to an amount not exceeding the total amount of the fee payment to Grace & Associates Inc. pursuant hereto.

This letter report is based upon the best information available to Grace & Associates Inc. within the time constraints and scope of the assessment. Material presented within this report reflects the best professional judgement of Grace & Associates Inc. personnel given the amount of information available at the time of preparation. This report has been produced using the information supplied by Mrs. Moore, and various government agencies.

- o o o -

We trust the preceding is sufficient for your present needs. Should you have any questions, or require additional information, please do not hesitate to contact the undersigned.

Respectfully submitted,
GRACE & ASSOCIATES INC.



Thomas P. Grace C.E.T., B.Sc., P.Geo.
Environmental Geologist
Principal



cc. Ann Hamilton, Secretary-Treasurer, Land Division, County of Peterborough
Sharon Moore, Proponent

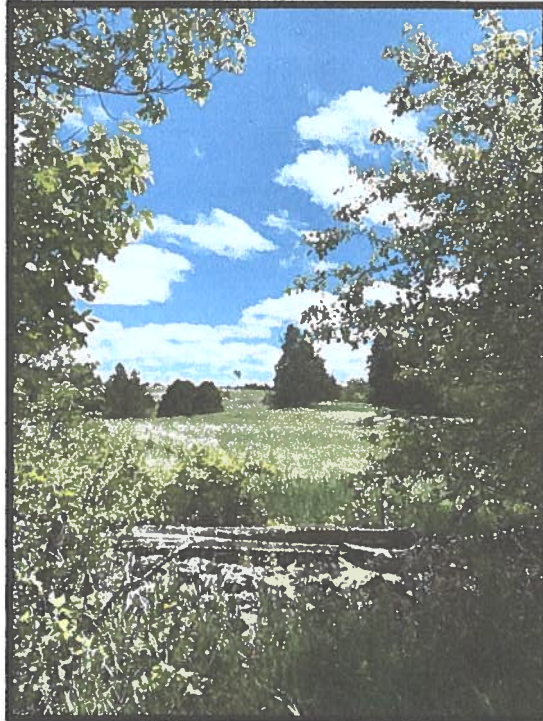
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APPENDIX A

EIS REPORT

**Scoped environmental impact study for proposed severance
for two residential lots on part of Lot 15, Concession 3,
Dummer Township, County of Peterborough**



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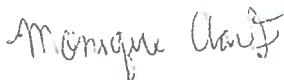
Date submitted: February 9, 2021

Contributors

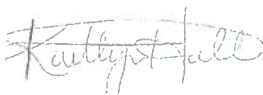
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Executive summary

This environmental impact study (EIS) outlines the potential impacts of the proposed severance for two residential lots on the surrounding natural heritage features and functions. This EIS provides mitigations for potential negative impacts identified. During the field investigation natural heritage features were identified within 120 m of the project footprint. Identified features that must be protected include seeps and springs, amphibian breeding habitat (woodland), species at risk (SAR) habitat, wetlands, and fish habitat.

A summary of significant wildlife habitat (SWH) present on and within 120 m of the project footprint and the type of anticipated impact are presented in Table 1. A summary of all SAR habitat present on and within 120 m of the project footprint and type of impact is presented in Table 2. A summary of natural heritage features present on and within 120 m of the project footprint and residual impact of development is presented in Table 3.

Potential impacts from the proposed project activities include:

- Loss of bird breeding and foraging habitat (approximately 2 hectares).
- Release of contaminants (i.e., sediments, salt, gasoline, oil, nutrients) in surface water from development activities and eventual residential activities that may pollute adjacent wetland, potential seep and spring habitat, fish habitat, and amphibian breeding grounds.
- Increased human activity may increase predator populations leading to increased predation of wildlife.
- Incidental mortality of bird offspring caused by nest destruction or disturbance during construction.
- Loss of bat foraging habitat where future development will occur.

Mitigation and avoidance measures to prevent these negative impacts are outlined in this EIS. We conclude that the proposed project, including the mitigation and avoidance measures, will not have a negative impact on the adjacent natural heritage features identified including, SWH, SAR habitat, wetlands, and fish habitat.

Table 1. Summary of SWH presence on and within 120 m of project footprint and residual impact of development.

Significant Wildlife Habitat	Presence on project footprint	Presence within 120 m of footprint	Residual Impact
Waterfowl stopover and staging areas (terrestrial)	X	X	X
Waterfowl stopover and staging areas (aquatic)	X	X	X
Shorebird migratory stopover area	X	X	X
Raptor wintering area	X	X	X
Bat hibernacula	X	X	X
Bat maternity colonies	X	X	X
Turtle wintering areas	X	X	X
Reptile hibernacula	X	X	X
Colonially-nesting bird breeding habitat (bank and cliff)	X	X	X
Colonially-nesting bird breeding habitat (trees/shrubs)	X	X	X
Colonially-nesting bird breeding habitat (ground)	X	X	X
Colonial Waterbird Nesting Area	X	X	X
Migratory butterfly stopover areas	X	X	X
Landbird migratory stopover areas	X	X	X
Deer winter congregation areas	X	X	X
Cliff and talus slopes	X	X	X
Sand barren	X	X	X
Alvar	X	X	X
Old growth forest	X	X	X
Savannah	X	X	X
Tallgrass prairie	X	X	X
Other rare vegetation communities	X	X	X
Waterfowl nesting area	X	X	X
Bald eagle and osprey nesting, foraging and perching habitat	X	X	X

Woodland raptor nesting habitat	X	X	X
Turtle nesting areas	X	X	X
Seeps and springs	X	P	None (with mitigation)
Amphibian breeding habitat (woodland)	X	P	None (with mitigation)
Amphibian breeding habitat (wetlands)	X	X	X
Woodland area-sensitive breeding habitat	X	X	X
Marsh breeding bird habitat	X	X	X
Open country bird breeding habitat	X	X	X
Shrub/early successional bird breeding habitat	X	X	X
Terrestrial crayfish	X	X	X
Amphibian movement corridors	X	X	X

✓ - Suitable SAR habitat is present

P - Suitable SAR habitat is potentially present

X - Suitable SAR habitat not present

Table 2. Summary of SAR habitat presence on and within 120 m of project footprint and residual impact of development.

Species at Risk	Suitable habitat on project footprint	Suitable habitat within 120 m of footprint	Residual impact on habitat
Bank swallow	X	X	X
Barn Swallow	X	X	X
Black tern	X	X	X
Blanding's turtle	X	X	X
Bobolink	✓	✓	None (with mitigation)
Butternut	X	✓	None (with mitigation)
Canada Warbler	X	P	None (with mitigation)
Cerulean warbler	X	X	X

Common five-lined skink	X	X	X
Eastern hog-nosed snake	X	X	X
Eastern meadowlark	✓	✓	None (with mitigation)
Eastern musk turtle	X	X	X
Eastern ribbonsnake	X	X	X
Eastern whip-poor-will	X	X	X
Eastern wood-pewee	P	P	None (with mitigation)
Golden-winged warbler	X	X	X
Grasshopper sparrow	P	P	None (with mitigation)
Least bittern	X	X	X
Little brown myotis	X	P	None (with mitigation)
Loggerhead shrike	X	X	X
Monarch	P	P	None (with mitigation)
Northern map turtle	X	X	X
Northern myotis	X	P	None (with mitigation)
Olive-sided flycatcher	X	X	X
Pale-bellied frost lichen	X	X	X
Tri-colored bat	X	P	None (with mitigation)
Red-headed woodpecker	X	P	None (with mitigation)
Rusty blackbird	X	X	X
Short-eared owl	X	X	X
Snapping turtle	X	P	None (with mitigation)
Wood thrush	P	P	None (with mitigation)

✓ - Suitable SAR habitat is present

P - Suitable SAR habitat is potentially present

X - Suitable SAR habitat not present

Table 3. Summary of natural heritage features on and within 120 m of project footprint and residual impact of development.

Natural heritage features	Present on project footprint	Present within 120 m of footprint	Residual impact on habitat
Significant wetlands	X	X	X
Significant woodlands	X	X	X
Significant valleylands	X	X	X
Areas of natural and scientific interest	X	X	X
Fish habitat	X	✓	None (with mitigation)

✓ - Natural heritage feature is present

X - Natural heritage feature is not present

Report limitations

This section describes the degree to which Blazing Star Environmental was able to make conclusions on each of the deliverables and any associated limitations of this scoped EIS. Any changes to the proposed project activities as described in this EIS render these conclusions invalid and will require an update to all relevant sections.

Given the dynamic character of the natural environment, and regular changes to policy (i.e., new species listing), consideration is recommended in the interpretation of potential presence of threatened or endangered species as protected under the *Endangered Species Act* (ESA).

This EIS was informed by the most recent policy information however, it is not intended to act as a long-term assessment of potential SAR. The ESA is a 'proponent-driven' piece of legislation and it is the responsibility of the landowner/developer to ensure compliance with the regulations made under this act. To ensure that a considerable length of time and/or sudden change in policy have not occurred prior to construction, it is recommended that a

review of the assessment provided within this report be undertaken by a qualified biologist to ensure compliance with the ESA at that time.

All current threatened or endangered species listed under O. Reg. 230/08 made under the ESA with a currency date of February 9, 2021 have been considered for this EIS.

The focus of this work was to assess the presence of potential SAR habitat. Suitable habitat was found for the following threatened and endangered species: bobolink, eastern meadowlark, little brown myotis, northern myotis, and tri-colored bat. The purpose was not to confirm SAR habitat use as this would have required significantly more survey effort and is outside of the project scope. Therefore, wherever potential SAR habitat exists, the SAR is assumed to be present. Mitigations are proposed assuming the SAR is present. The impacts were assessed as though the mitigations were applied. The recommended mitigations for SAR habitat can be avoided if surveys are conducted following appropriate survey protocol and species absence is confirmed by a qualified biologist.

In addition, biologists were not able to visit all habitat within 120 m of the project footprint during appropriate time to confirm all types of SWH. To confirm SWH, the site visit must take place when species are completing specific life stages according to the Significant Wildlife Habitat Criteria Schedules (SWHCS) for Ecoregion 6E. These life stages include breeding, nesting, migrating, etc. Therefore, potential SWH are discussed in this report. Potentially present habitat types that cannot be confirmed within the survey timeframe include amphibian breeding habitat (woodland). Mitigations are proposed assuming the SWH is present. The impacts were assessed as though the mitigations were applied.

1 Purpose

This EIS summarizes the results of a site investigation and analysis conducted by Blazing Star Environmental to determine potential impacts to natural heritage features and functions present on and within 120 m of a proposed severance for two residential lots within part of Lot 15, Concession 3, Dummer Township, County of Peterborough. Potential impacts to natural heritage features that do or may exist on the site are discussed and mitigation and avoidance measures are provided, where necessary.

Policy framework

This EIS has been undertaken to meet the requirements of governing policies developed to protect natural features and functions. This section lists the policies and legislation that apply to the protection of natural heritage features within the study area and supporting guidance documents and resources respective to each policy.

Provincial Policy Statement, 2020

The Provincial Policy Statement (PPS) (2020) provides policy direction on land use planning and development in Ontario. The PPS encourages improved land use planning and management to achieve a more effective and efficient system. The goal of the PPS is to provide appropriate development while protecting the environment and public health and safety. The PPS protects natural heritage features and states that in Ecoregions 6E development and site alteration shall not be permitted in significant wetlands, significant woodlands, significant valleylands, SWH, areas of natural and scientific interest (ANSI), significant coastal wetlands, fish habitat, and habitat of endangered species and threatened species, except in accordance with provincial and federal requirements (Government of Ontario 2020b).

Potential and confirmed natural heritage features on and within 120 m of the project footprint that are protected by the PPS include: seeps and springs, amphibian breeding habitat (woodland), endangered and threatened species habitat, wetlands, and fish habitat. Any future development must abide by the PPS.

County of Peterborough Official Plan, 1994

The natural environment goal of the County of Peterborough Official Plan (1994) is to protect and enhance significant natural heritage and hydrologic features, areas, and functions in the municipality. This plan states that development or site alteration shall not be permitted within SWH, fish habitat, endangered or threatened species habitat, or wetlands. The vegetation protection zone required for the protection of natural heritage or hydrologic features and their ecological functions shall not be less than 30 metres. The natural heritage system shall be retained and enhanced wherever possible. Protected key natural heritage features include locally and provincially significant wetlands, endangered and threatened species habitat, significant woodlands, significant valleylands, SWH, fish habitat, surface and ground water features, and ANSI (County of Peterborough 1994a).

The County of Peterborough Official Plan is relevant to this EIS as the study area contains SWH (seeps and springs, and amphibian breeding habitat), threatened species habitat, wetlands, and potential fish habitat.

A Place to Grow - Growth Plan for the Greater Golden Horseshoe, 2020

The Growth Plan for the Greater Golden Horseshoe (2020) is "the Ontario government's initiative to plan for growth and development in a way that supports economic prosperity, protects the environment, and helps communities achieve a high quality of life" (MOI 2020). This regional plan requires a 30 m vegetation protection buffer surrounding key natural heritage and hydrologic features, fish habitat, and woodlands. Since the project footprint contains potential fish habitat within 120 m, the vegetation protection buffer applies.

Endangered Species Act, 2007

The ESA (2007) protects species classified as threatened or endangered as well as their habitat and promotes the recovery of SAR in Ontario. The ESA states that no person shall kill, harm, harass, capture, collect, buy, or sell a species listed as SAR in Ontario. The ESA also states that no person shall damage or destroy the habitat of a species listed as SAR in Ontario (Government of Ontario 2007).

The presence of suitable habitat for threatened and endangered species were assessed as part of this study. Bobolink, eastern meadowlark, little brown myotis, northern myotis, and tri-colored bat and their habitat were confirmed on the project footprint.

Conservation Authorities Act, 2019

The Conservation Authorities Act (2019) provides services that conserve, restore, develop, and manage the natural resources in Ontario's watersheds (Government of Ontario 2020a). The project footprint is located within Otonabee Region Conservation's jurisdiction.

The wetlands within 120 m of the project footprint are protected by the Conservation Authorities Act and if development is to occur in the future it must remain in compliance with the act.

Migratory Birds Convention Act, 1994

The purpose of the *Migratory Birds Convention Act* (MBCA) (1994) is to protect and conserve migratory birds and their nests. The MBCA prohibits the killing, capturing, injuring, taking, or disturbing of migratory birds or the damaging, destroying, removing, or disturbing of nests (Government of Canada 1994).

The presence of migratory birds and their nests on the study area was assessed as part of this study.

Fisheries Act (1985)

The purpose of the *Fisheries Act* (1985) is to prevent any potential impacts to fish and/or fish habitat, including lakes, watercourses, and other water containing fish. The *Fisheries Act* self-assessment is now required for any projects near water that could potentially impact fish or fish habitat (www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html). If impact to fish or fish habitat is deemed unavoidable, the project should be submitted to the Department of Fisheries and Oceans for review and recommendations (Government of Ontario 1985).

Wetland habitat within the study area may provide fish habitat.

2 Project description

Location and study area

The proposed severance is located on Lot 15, Concession 3, Dummer Township within the County of Peterborough (Figure 1). The proposed severance is within the southeastern corner of the property, fronting South Dummer 4th Line Road (Figure 2).

At the time of the site visit the location of the severance was undecided. The landowner was considering two locations including the southeastern field and the northeastern field. Both locations, and adjacent 120 m were assessed during the site visit. The landowner has since decided to locate the severance in the southeastern field fronting South Dummer Fourth Line Road. Therefore, only data collected within 120 m (aside from supporting SAR data) of the selected location is presented in this EIS. Several SAR observations from outside of the final study area are included in the report because they inform likelihood of SAR habitat within the study area.



Figure 1. Location of proposed severance within County of Peterborough.

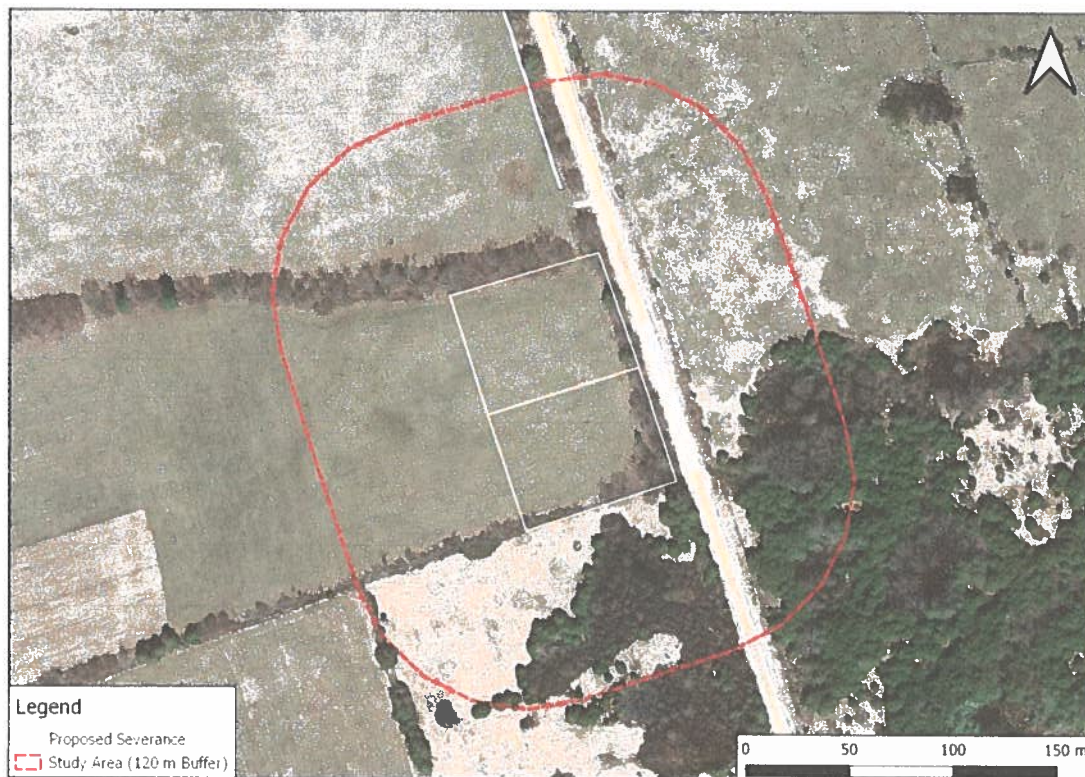


Figure 2. Study area including proposed severance (yellow) and surrounding 120 m (red).

Existing site conditions

The land for the proposed lot severance is approximately 0.81 hectares (2 acres) with a 1,717 ft perimeter. The project footprint is within an agricultural field, which was planted in hay during the time of the field investigation (Appendix B, Figure 8-10). The field is lined with mature deciduous treed hedgerows (Appendix B, Figure 11). There are no structures on the project footprint.

The study area is designated as rural in the County of Peterborough Official Plan (County of Peterborough 1994b).

Proposed development conditions

The assessment of anticipated impacts of the proposed severance is based on the project information provided by Grace & Associates Inc. Should the

development plan change from what is currently understood (described below), conclusion on the extent of the impacts on natural heritage features, and respective mitigations, will need to be revised. Figure 2 within Section 2.1 depicts the proposed building area.

The landowner plans to sever the property for two residential lots, fronting South Dummer Fourth Line Road. Construction plans are currently unknown.

Records review

Before initiating the field investigation, a records review was completed to identify the presence of natural heritage features and provincial SAR, located within 10 km of the project footprint. The following resources were used:

- eBird (Cornell Lab of Ornithology 2020)
- iNaturalist (iNaturalist 2020)
- Make A Map: Natural Heritage Areas (OMNRF 2014a)
- Ontario Breeding Bird Atlas (BSC et al. 2009)
 - Squares: 12TQK31-33, 12TQK 22-23, 12TQK62
- Ontario Reptile and Amphibian Atlas (Ontario Nature 2020b)
 - Squares: 12TQK31-33, 12TQK 22-23, 12TQK62

All SAR occurrences retrieved are outlined in Table 4. Habitat suitability and impact assessment were considered for all SAR identified in this records review.

Two types of SWH were identified in the records review including: colonial waterbird nesting area and mixed wader nesting colony. Habitat suitability and impact assessment were considered for these and all other potential SWH outlined in the SWHCS for Ecoregion 6E (OMNRF 2015). Further details of the records review are included in Appendix A.

Table 4. SAR occurrences within 10 km of project footprint.

Common name	Scientific name	Provincial status
Bank swallow	<i>Riparia riparia</i>	Threatened
Black tern	<i>Chlidonias niger</i>	Special concern
Blanding's turtle	<i>Emydoidea blandingii</i>	Threatened
Bobolink	<i>Dolichonyx oryzivorus</i>	Threatened
Butternut	<i>Juglans cinerea</i>	Endangered
Canada warbler	<i>Cardellina canadensis</i>	Special concern
Cerulean warbler	<i>Setophaga cerulea</i>	Threatened
Common five-lined skink	<i>Plestiodon fasciatus pop. 2</i>	Special concern
Eastern hog-nosed snake	<i>Heterodon platirhinos</i>	Threatened
Eastern meadowlark	<i>Sturnella magna</i>	Threatened
Eastern musk turtle	<i>Sternotherus odoratus</i>	Special concern
Eastern ribbonsnake	<i>Thamnophis sauritus</i>	Special concern
Eastern whip-poor-will	<i>Antrostomus vociferus</i>	Threatened
Eastern wood-pewee	<i>Contopus virens</i>	Special concern
Golden-winged warbler	<i>Vermivora chrysoptera</i>	Special concern
Grasshopper sparrow	<i>Ammodramus savannarum</i>	Special concern
Least bittern	<i>Ixobrychus exilis</i>	Threatened
Loggerhead shrike	<i>Lanius ludovicianus</i>	Endangered
Northern map turtle	<i>Graptemys geographica</i>	Special concern
Olive-sided flycatcher	<i>Contopus cooperi</i>	Special concern
Pale-bellied frost lichen	<i>Physconia subpallida</i>	Endangered
Red-headed woodpecker	<i>Melanerpes erythrocephalus</i>	Special concern

Rusty Blackbird	<i>Euphagus carolinus</i>	Special concern
Short-eared owl	<i>Asio flammeus</i>	Special concern
Snapping turtle	<i>Chelydra serpentina</i>	Special concern
Wood thrush	<i>Hylocichla mustelina</i>	Special concern

Field investigation

The field investigation took place on June 12, 2020 and was conducted by Monique Aarts (Conservation Biologist) and Michelle Hill (Terrestrial and Wetland Ecologist). As mentioned in Section 2.1, the severance location was not finalized at the time of the site visit. Therefore, both potential severance locations and adjacent 120 m were assessed. Only findings within 120 m of the final severance location, the southeastern field, will be presented in this report, with the exception of confirmed SAR located outside of the study area. The field investigation included the following surveys:

- Ecological land classification (ELC) was completed following 2008 ELC standards (Lee et. al. 1998).
- Two unevaluated wetland boundaries were delineated following the Ontario Wetland Evaluation System (OMNRF 2013a) guidelines for wetland delineation by certified wetland evaluators Monique Aarts and Michelle Hill. These wetlands are outside of the final study area.
- Surveys to assess suitability of SWH and SAR habitat.
- Incidental observations of wildlife species were recorded during all field investigation surveys and can be found in Appendix D.

3 Presence of natural heritage features

Significant wetlands

There are no provincially or locally significant wetlands on or within 120 m of the project footprint according to the OMNRF 'Make A Map: Natural Heritage Areas' website and the official plan of the township of Douro-Dummer schedule 'A4-2' land use and transportation Dummer ward (City of Peterborough 1994). There is an unevaluated wetland complex located south and southeast of the project footprint (Figure 3). Since this wetland is located on a neighbouring property, the site was not accessed. The wetland boundaries presented in Figure 3 are approximate and were determined using a combination of aerial imagery roadside plant observations (Figure 13-14). The following species were recorded from Fourth Line Road South: silver maple (*Acer saccharinum*),

eastern white cedar (*Thuja occidentalis*), willow spp. (*Salix spp.*), and trembling aspen (*Populus tremuloides*). According to the Ontario Wetland Evaluation System the plants listed are all wetland species (OMNRF 2014b).

Significant woodlands

The County of Peterborough Official Plan does not provide criteria for defining Significant Woodlands. Woodland significance was assessed using provincial definitions and criteria available in the PPS and the Natural Heritage Reference Manual (OMNR 2010). Woodland size was evaluated based on the percent of woodland cover for the planning area, the local municipality of Douro-Dummer, as defined by the County of Peterborough Official Plan. The woodland within the study area is approximately 7 hectares, the woodland percent cover for this municipality is > 15%. Based on the significant woodland size criteria the woodland within the study area is not significant.

Significant valleylands

There are no significant valleylands on or within 120 m of the project footprint as defined by the County of Peterborough Official Plan (County of Peterborough 1994a).

Areas of natural and scientific interest

There are no ANSI present on or within 120 m of the project footprint according to the OMNRF 'Make A Map: Natural Heritage Areas' website (OMNRF 2014a) and County of Peterborough Official Plan (County of Peterborough 1994a).

Fish habitat

There may be fish habitat present within 120 m of the project footprint based on aerial imagery. The swamp located southeast of the project footprint contains a network of pools and watercourses that may be used by fish (Figure 3).

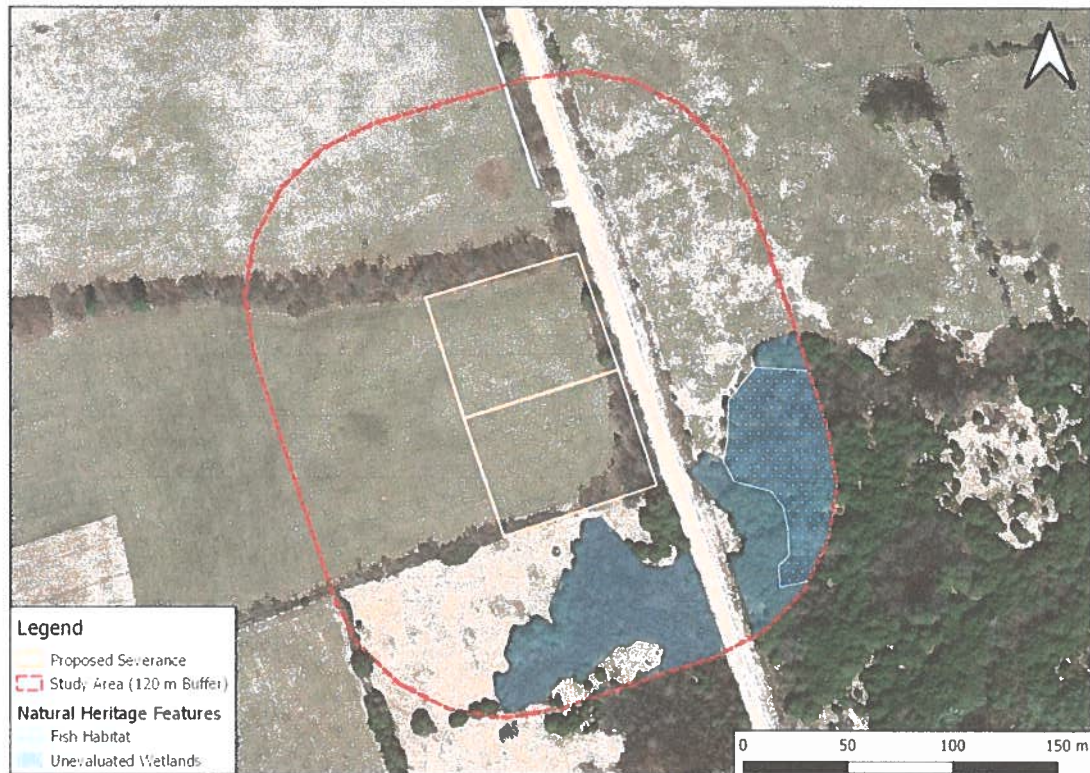


Figure 3. The unevaluated wetlands (blue) and fish habitat (light blue) adjacent to the study area (red).

4 Ecological land classification

Ecosystem descriptions and species lists are provided in this section. Photos of each ecosite were taken during the field investigation (Appendix B, Figure 8-11, 13-14). Natural vegetation communities identified on the study area are illustrated in Figure 4. The three vegetation communities identified on the project footprint include open agriculture, deciduous thicket, and mixed swamp Ecosites. An annotated plant species list of dominant plant species is presented in Appendix C.



Figure 4. The study area was classified into 3 vegetation communities: Agriculture - Open Agriculture – Perennial Cover Crops (OAGM2), Dry - Fresh Deciduous Hedgerow Thicket – Native Shrub Deciduous Hedgerow Thicket (THDM3-2), and White Cedar – Hardwood Organic Mixed Swamp (SWMO1-1). The mixed swamp wetland boundary is approximate as it was determined based on aerial imagery, and roadside observation.

Open agriculture

Open agriculture – perennial cover crops (OAGM2)

Open agriculture communities are characterized by crop type and substrate texture (Lee et. al. 1998). The main vegetation community within the project footprint is dominated by grass spp. (*Poaceae spp.*), oxeye daisy (*Leucanthemum vulgare*), red clover (*Trifolium pratense*), and birdsfoot trefoil (*Lotus corniculatus*). The soil texture in the area is dummer loam and is well drained (OMAFRA 2020). Photos of this ecotype can be found in Appendix B, Figure 8-10.

Deciduous thicket

Dry - fresh native shrub deciduous hedgerow thicket (THDM3-2)

Deciduous thicket communities are characterized by dominant deciduous shrub species and deciduous cover >75% (Lee et. al. 1998). The hedgerow along the boundary of the project footprint is dominated by white elm (*Ulmus laevis*) and American basswood (*Tilia americana*). Photos of this ecotype can be found in Appendix B, Figure 11.

Mixed swamp

White cedar – hardwood organic mixed swamp (SWMO1-1)

Mixed swamp communities are characterized by a tree cover of > 25% and trees that are > 5 m tall (Lee et. al. 1998). Both deciduous and coniferous tree species make up > 25% of the canopy cover. The main vegetation community seen from Fourth Line Road South is a mixture of eastern white cedar (*Thuja occidentalis*), silver maple (*Acer saccharinum*), trembling aspen (*Populus tremuloides*), American basswood (*Tilia americana*), and willow spp. (*Salix* spp.). Photos of this ecotype can be found in Appendix B, Figure 13-14.

5 Assessment of the presence of significant wildlife habitat

This section identifies the types of SWH present, likely present or absent on and within 120 m of the project footprint. Each present or likely present SWH is discussed in the Impact Assessment section. Criteria recommended by the province, SWHCS for Ecoregion 6E were used to evaluate the site for any habitat of significance. The SWHCS supports the Natural Heritage Reference Manual (OMNR 2010) and provides information on the identification, description, and prioritization of SWH. The five categories for evaluation of SWH and a review of each are provided below.

Seasonal concentration areas of animals

Waterfowl stopover and staging areas (terrestrial)

Suitable habitat does not occur on or within 120 m of the project footprint, matching the criteria listed in the SWHCS Table 1.1. Specifically, the criteria

ELC ecosite codes listed are not present on or within 120 m of the project footprint.

Waterfowl stopover and staging areas (aquatic)

Suitable habitat does not occur on or within 120 m of the project footprint, as the habitat does not match the criteria listed in the SWHCS Table 1.1. Specifically, the criteria ELC ecosite codes listed are not present. There are no ponds, marshes, lakes, bays, coastal inlets, or watercourses to provide adequate food to replenish energy reserves, resting areas, and cover from predators.

Shorebird migratory stopover area

Suitable habitat does not occur on or within 120 m of the project footprint, as the habitat does not match the criteria listed in the SWHCS Table 1.1. Specifically, the criteria ELC ecosite codes listed are not present on or within 120 m of the project footprint and does not include important features for shorebird migratory stopover areas.

Raptor wintering area

Suitable habitat does not occur on or within 120 m of the project footprint, as the habitat does not match the criteria listed in the SWHCS Table 1.1. Specifically, the combination and size of fields and woodlands that provide roosting, foraging, and resting habitats for wintering raptors are not present.

Bat hibernacula

Suitable habitat does not occur on or within 120 m of the project footprint, as the habitat does not match the criteria listed in the SWHCS Table 1.1. Specifically, there are no hibernacula features including caves, mine shafts, underground foundations, and karsts.

Bat maternity colonies

Suitable habitat does not occur on or within 120 m of the project footprint. Specifically, there is no habitat that matches the criteria listed in the SWHCS Table 1.1. There are no mature deciduous or mixed forest stands present.

Turtle wintering areas

Suitable habitat does not occur on or within 120 m of the project footprint, as the habitat does not match the criteria listed in the SWHCS Table 1.1. Specifically, the criteria ELC ecosite codes listed are not present on or within 120 m of the project footprint.

Reptile hibernacula

Suitable habitat does not occur on or within 120 m of the project footprint, as the habitat does not match the criteria listed in the SWHCS Table 1.1. Although a rock pile is present on the southern field along the southern project footprint boundary it likely does not extend to the frost line, a requirement of reptile hibernacula.

Colonially-nesting bird breeding habitat (bank and cliff)

Suitable habitat does not occur on or within 120 m of the project footprint, as the habitat does not match the criteria listed in the SWHCS Table 1.1. Specifically, the ELC ecosite codes that make up this habitat type are not present and there are no eroding banks, sandy hills, borrow pits, steep slopes, sand piles, cliff faces, bridge abutments, silos, or barns present on or within 120 m of the project footprint.

Colonially-nesting bird breeding habitat (trees/shrubs)

Suitable habitat does not occur on or within 120 m of the project footprint, as the habitat does not match the criteria listed in the SWHCS Table 1.1. Specifically, there are no eroding banks, sandy hills, burrow pits, steep slopes, sand piles, cliff faces, or silos.

Colonially-nesting bird breeding habitat (ground)

Suitable habitat does not occur on or within 120 m of the project footprint, as the habitat does not match the criteria listed in the SWHCS Table 1.1. Specifically, the criteria ELC ecosite codes listed are not present and the study area does not contain rocky islands, peninsulas, or fields near a large water body or watercourses.

Migratory butterfly stopover areas

Suitable habitat does not occur on or within 120 m of the project footprint, as the habitat does not match the criteria listed in the SWHCS Table 1.1. Specifically, the study area is not located within 5 km of Lake Ontario.

Landbird migratory stopover areas

Suitable habitat does not occur on or within 120 m of the project footprint, as the habitat does not match the criteria listed in the SWHCS Table 1.1. Specifically, the criteria ELC ecosite codes listed are not present and the study area is unsuitable for migratory landbird stopover areas because it is not located within 5 km of Lake Ontario.

Deer yarding areas

Suitable habitat does not occur on or within 120 m of the project footprint, as the habitat does not match the criteria listed in the SWHCS Table 1.1. Specifically, the criteria ELC ecosite codes listed are not present on or within 120 m of the project footprint, and there is limited browse available for foraging.

Deer winter congregation areas

Suitable habitat does not occur on or within 120 m of the project footprint, as the habitat does not match the criteria listed in the SWHCS Table 1.1. Specifically, there are no woodlots >100 ha present on or within 120 m of the project footprint.

Rare vegetation communities

Cliff and talus slopes

This rare vegetation community does not occur on or within 120 m of the project footprint, as the habitat does not match the criteria listed in the SWHCS Table 1.2.1. Specifically, the ELC ecosite codes that make up this habitat type are not present on or within 120 m of the project footprint.

Sand barren

This rare vegetation community does not occur on or within 120 m of the project footprint, as the habitat does not match the criteria listed in the SWHCS

Table 1.2.1. Specifically, the ELC ecosite codes that make up this habitat type are not present on or within 120 m of the project footprint.

Alvar

This rare vegetation community does not occur on or within 120 m of the project footprint, as the habitat does not match the criteria listed in the SWHCS Table 1.2.1. Specifically, the ELC ecosite codes that make up this habitat type are not present on or within 120 m of the project footprint.

Old growth forest

This rare vegetation community does not occur on or within 120 m of the project footprint, as the habitat does not match the criteria listed in the SWHCS Table 1.2.1. Specifically, the criteria ELC ecosite codes listed are not present on or within 120 m of the project footprint.

Savannah

This rare vegetation community does not occur on or within 120 m of the project footprint, as the habitat does not match the criteria listed in the SWHCS Table 1.2.1. Specifically, the ELC ecosite codes that make up this habitat type are not present on or within 120 m of the project footprint.

Tallgrass prairie

This rare vegetation community does not occur on or within 120 m of the project footprint, as the habitat does not match the criteria listed in the SWHCS Table 1.2.1. Specifically, the ELC ecosite codes that make up this habitat type are not present on or within 120 m of the project footprint.

Other rare vegetation communities

There are no other rare vegetation communities on or within 120 m of the project footprint. Communities that have a Provincial Rank of S1 to S3 are considered rare (OMNRF 2015). According to ELC mapping of the site completed (Figure 4), none of the vegetation communities within the site that have been ranked by the Natural Heritage Information Centre (NHIC), have an S-rank of S1 to S3.

Specialized habitat for wildlife

Waterfowl nesting area

This specialized habitat is not present on or within 120 m of the project footprint, as the habitat does not match the criteria listed in the SWHCS Table 1.2.2. Specifically, the criteria ELC ecosite codes listed are not present on or within 120 m of the project footprint and the study area is not adjacent to a provincially significant wetland.

Bald eagle and osprey nesting, foraging, and perching habitat

This specialized habitat does not occur on or within 120 m of the project footprint. Specifically, bald eagles nest in mature forests containing super-canopy trees adjacent to large productive waterbodies (Armstrong 2014). Osprey nests are also associated with large lakes or marshes. This specialized habitat is not present on or within 120 m of the project footprint. Evidence of bald eagles and/or osprey nests were not observed during the site visits.

Woodland raptor nesting habitat

This specialized habitat does not occur on or within 120 m of the project footprint, as the habitat does not match the criteria listed in the SWHCS Table 1.2.2. Specifically, the forested habitat does not contain > 30 hectares woodland forest with > 10 hectares of interior forest as specified in the SWHCS Table 1.2.2.

Turtle nesting areas

This specialized habitat does not occur on or within 120 m of the project footprint, as the habitat does not match the criteria listed in the SWHCS Table 1.2.2. Specifically, the criteria ELC ecosite codes listed are not present on or within 120 m of the project footprint.

Seeps and springs

This specialized habitat may occur within 120 m of the project footprint. We did not have permission to access the property to assess the wetland to the southeast of the project footprint, the habitat may match the criteria listed in the SWHCS Table 1.2.2. No seeps or springs were observed during the field investigation.

Amphibian breeding habitat (woodland)

This specialized habitat may occur within 120 m of the project footprint, as the habitat east of Fourth Line Road South might match the criteria listed in the SWHCS Table 1.2.2. Specifically, there are vernal pools present within 120 m of the project footprint that meets the minimum size criteria ($>500 \text{ m}^2$, 25 m diameter) as seen from aerial imagery.

Amphibian breeding habitat (wetlands)

This specialized habitat does not occur on or within 120 m of the project footprint, as the habitat does not match the criteria listed in the SWHCS Table 1.2.2. Specifically, there are no non-treed wetlands present within 120 m of the project footprint that meet the minimum size criteria ($>500 \text{ m}^2$, 25 m diameter).

Woodland area-sensitive breeding habitat

This specialized habitat does not occur on or within 120 m of the project footprint, as the habitat does not match the size criteria listed in the SWHCS Table 1.2.2.

Marsh breeding bird habitat

This specialized habitat does not occur on or within 120 m of the project footprint, as the habitat does not match the criteria listed in the SWHCS Table 1.3. Specifically, the criteria ELC ecosite codes listed are not present on or within 120 m of the project footprint.

Open country bird breeding habitat

This specialized habitat does not occur on or within 120 m of the project footprint, as the habitat does not match the criteria listed in the SWHCS Table 1.3. Specifically, there is no grassland habitat that meets the minimum size criteria (>30 hectares) that is not actively farmed.

Shrub/early successional bird breeding habitat

This specialized does not occur on or within 120 m of the project footprint, as the habitat does not match the criteria listed in the SWHCS Table 1.3. Specifically, there are no large fields that are in succession to shrub and thicket habitats >10 hectares in size.

Terrestrial crayfish

This specialized habitat does not occur on or within 120 m of the project footprint, as the habitat does not match the criteria listed in the SWHCS Table 1.3. The site is outside of the known terrestrial crayfish (*Fallicambarus fodiens*) range in Ontario (Crandall 2010).

Habitat for species of conservation concern

Black tern (special concern)

No suitable habitat for black tern (*Chlidonia niger*) occurs on or within 120 m of the project footprint. Black terns live in shallow marshes, especially in cattails where they build floating nests in loose colonies (MECP 2020a). There are no shallow marshes on or within 120 m of the project footprint. No observations of black tern, or signs of their presence, were found during the field investigation.

Canada warbler (special concern)

Suitable habitat for Canada warbler (*Cardellina canadenses*) may occur within 120 m of the project footprint in the south east corner of forest swamp (MECP 2021a). Canada warbler breeds in well-developed dense shrub layered deciduous or coniferous wet forest types. Canada warbler nests on or close to the ground on roots or mossy logs, along stream banks or on hummocks, often hidden by the dense shrub layer. No observations of Canada warbler, or signs of their presence, were found during the field investigation.

Common five-lined skink (special concern)

No suitable habitat for common five-lined skink (*Plestiodon fasciatus*) occurs on or within 120 m of the project footprint. Common five-lined skinks use rocky outcrops within mixed coniferous or deciduous forests with loose cover rocks on exposed bedrock (Howes and Loughheed 2004). There are no rocky outcrops on or within 120 m of the project footprint. No observations of common five-lined skink, or signs of their presence, were found during the field investigation.

Eastern musk turtle (special concern)

No suitable habitat for eastern musk turtle (*Sternotherus odoratus*) occurs on or within 120 m of the project footprint. Eastern musk turtles commonly use

stagnant or slow-moving shallow wetlands connected to larger permanent waterbodies including lakes, ponds, marshes, rivers, and streams (Edmonds 2002). This species requires water with abundant emergent, floating, and submerged aquatic vegetation for cover, foraging, refuge, and thermoregulation (Environment Canada 2016). No observations of eastern musk turtle, or signs of their presence, were found on or within 120 m of the project footprint.

Eastern ribbonsnake (special concern)

No suitable habitat for eastern ribbonsnake (*Thamnophis sauritus*) occurs in or within 120 m of the project footprint. Eastern ribbonsnakes are a semi-aquatic species mostly found close to water, including wetlands, lakes, and rivers, that are near adjacent terrestrial habitat. The waterbodies must have shallow water, and low, dense shoreline vegetation (COSEWIC 2002). This habitat is not present within on or 120 m of the project footprint. No observations of eastern ribbonsnakes, or signs of their presence, were found on or within 120 m of the project footprint.

Eastern wood-pewee (special concern)

Suitable habitat for eastern wood-pewee (*Contopus virens*) may occur within 120 m of the project footprint as there is a forested area south east of the project footprint that fits the required habitat description. Eastern wood-pewees live and nest in the mid-canopy layer of forest clearings and edges of intermediate-age mature deciduous and mixed forests with little understory (COSEWIC 2012a). The treed areas within the study area contain forest edges and clearings. No observations of eastern wood-pewee, or signs of their presence, were found on the project footprint during the field investigation.

Golden-winged warbler (special concern)

Suitable habitat for golden-winged warbler (*Vermivora chrysoptera*) does not occur on or within 120 m of the project footprint. Golden-winged warblers require large forest landscapes (~28 x 28 km) and do not typically occur in highly fragmented, urbanized or agricultural landscapes (Environment Canada 2014). No observations of golden-winged warbler, or signs of their presence, were found on the project footprint during the field investigation.

Grasshopper sparrow (special concern)

Suitable habitat for grasshopper sparrow (*Ammodramus savannarum*) may occur on and within 120 m of the project footprint. Grasshopper sparrows live in open grassland, hayfields and pasture areas with well-drained, sandy soil (MECP 2021b). Their small cup-like nests are woven from grasses and hidden in the field. No observations of grasshopper sparrow, or signs of their presence, were found on the project footprint during the field investigation.

Monarch (special concern)

Suitable habitat for monarch (*Danaus plexippus*) may occur on and within 120 m of the project footprint. Adult butterflies can be found in a range of habitats that provide wildflowers to feed on. Any nectar producing flower will attract adult monarchs. A preferred nectar plant of the monarch is *asteraceae*, or sunflower and daisy, family of plants (Nature Canada 2017). Oxeye daisy was found throughout the project footprint as well as red clover and birdsfoot trefoil. No observations of monarch, or signs of their presence, were found on the project footprint during the field investigation.

Northern map turtle (special concern)

Suitable habitat for northern map turtle (*Graptemys geographica*) does not occur on or within 120 m of the project footprint. Northern map turtles live in large lakes and rivers with slow moving water and soft bottoms. The habitat must have a high-quality water source to support mollusc production for female consumption (Ontario Nature, 2021). This habitat is not present on or within 120 m of the project footprint. No observations of northern map turtle, or signs of their presence, were found on the project footprint during the field investigation.

Olive-sided flycatcher (special concern)

Suitable habitat for olive-sided flycatcher (*Contopus cooperi*) does not occur on or within 120 m of the project footprint. Olive-sided flycatcher habitat is different across the region. In eastern Canada Olive-sided flycatcher often occur in open habitats such as muskeg, bogs and swamps dominated by spruce (*Picea* spp.) and tamarack (*Larix laricina*) (COSEWIC 2018a). No observations of olive-sided flycatcher, or signs of their presence, were found on the project footprint during the field investigation.

Red-headed woodpecker (special concern)

Suitable habitat for red-headed woodpecker (*Melanerpes erythrocephalus*) may occur within 120 m of the project footprint as there is a forested area south east of the project footprint that may have dead trees and snags, which the red-headed woodpecker use to nest in and perch on (MECP 2021c). No observations of red-headed woodpecker, or signs of their presence, were found on the project footprint during the field investigation.

Rusty blackbird (special concern)

Suitable habitat for rusty blackbird (*Euphagus carolinus*) does not occur on or within 120 m of the project footprint. Breeding habitat for rusty blackbirds occurs in coniferous dominated forests with wetlands such as bogs, marshes and beaver ponds nearby (MECP 2021d). No observations of rusty blackbird, or signs of their presence, were found on the project footprint during the field investigation.

Short-eared owl (special concern)

Suitable habitat for short-eared owl (*Asio flammeus*) does not occur on or within 120 m of the project footprint. There is no open grassland, marshes or tundra for ground nesting (MECP 2021e). The project footprint is not within known scattered distribution in Ontario. No observations of short-eared owl, or signs of their presence, were found on the project footprint during the field investigation.

Snapping turtle (special concern)

Suitable habitat for snapping turtle (*Chelydra serpentina*) may occur within 120 m of the project footprint as there is a forested area south east of the project footprint that may have a wet area which snapping turtles may live in. Snapping turtles breed, forage, and hibernate in wetlands (ECCC 2016), preferring shallow waters with leaf littered soft, muddy bottoms to hide under (MECP 2021f). No observations of snapping turtle, or signs of their presence, were found on the project footprint during the field investigation.

Wood thrush (special concern)

Suitable habitat for wood thrush (*Hylocichla mustelina*) may occur within 120 m of the project footprint as there is a forested area south east of the project footprint that fits the habitat description required. Wood thrush nest in mature

moist deciduous and mixed forests with well-developed undergrowth of variable sizes. Wood thrush build their nests in living saplings, shrubs, or trees, such as sugar maple (COSEWIC 2012b). In addition, wood thrush prefers nesting in large forest mosaics (Weinberg and Roth 1998). No observations of wood thrush, or signs of their presence, were found on the project footprint during the field investigation.

Animal movement corridors

Amphibian movement corridors

Suitable habitat does not occur on or within 120 m of the project footprint. Specifically, there is no water on or within 120 m of the project footprint which is associated with amphibian movement corridors between breeding and summer habitat as described in the SWHCS Table 1.4.1. Additionally, there is no woodland habitat that is 200 m wide with gaps <20 m.

Deer movement corridors

Suitable habitat does not occur on or within 120 m of the project footprint since deer wintering areas do not occur on or within 120 m from the project footprint.

Endangered and threatened species

Bank swallow (threatened)

Bank swallows (*Riparia riparia*) and their habitat would not be negatively affected by this project. Bank swallow nest in eroding vertical faces and banks of rivers and lakes (Falconer et al. 2016, MECP 2021g) that do not exist on the site. No observations of bank swallow, or signs of their presence, were found on the project footprint during the field investigation.

Barn swallow (threatened)

Barn swallow (*Hirundo rustica*) and their habitat would not be negatively affected by this project. There are no human-made structures, barns, bridges or culverts, to build their cup-shaped mud nests on the ledges of (MECP 2021h). No observations of barn swallow, or signs of their presence, were found on the project footprint during the field investigation.

Blanding's turtle (threatened)

Blanding's turtle (*Emydoidea blandingii*) and their habitat would not be negatively affected by this project. Blanding's turtles breed and overwinter in wetlands (typically bogs, fens, marshes, ponds, channels) with unfrozen water over the winter (OMNRF 2013b). Foraging habitats consist of small wetlands and vernal pools as they provide concentrated food sources, such as amphibian and insect egg masses and larvae (Grgurovic and Sievert 2005). Juveniles prefer to forage in wetlands that contain abundant aquatic vegetation as these areas provide protection and ample foraging opportunities (COSEWIC 2005). There is no suitable habitat for Blanding's turtles found on or within 120 m of the project footprint. No observations of Blanding's turtles, or signs of their presence, were found during the field investigation.

Bobolink (threatened)

Bobolink (*Dolichonyx oryzivorus*) and their habitat may be negatively affected by this project. Bobolink are obligate grassland species. They nest on the ground and forage in grasslands and agricultural fields of 5-50 ha (McCracken et al. 2013; OMNRF 2010b; MECP 2020b). There is suitable habitat for bobolink found on and within 120 m of the project footprint. A bobolink was observed and heard during the field investigation. Bobolinks were observed in the northeastern field (Figure 5). The hay field within the project footprint was very similar to the project footprint field. Therefore, the project footprint is considered suitable habitat.

Butternut (endangered)

Butternut (*Juglans cinerea*) and their habitat may be negatively affected by this project. Butternut prefer to grow on rich, well-drained loam typically along stream banks, however the species can tolerate a large range of soil types. Butternut is intolerant of shade and requires sunlight from above to survive (Rink 1990) (Poisson & Ursic 2013). Three butternut trees were observed in the forested area north of the project footprint (Figure 5). Therefore, soil conditions in the area are appropriate for the species. Butternut may occur in the mixed swamp in the southeast corner of the study area.

Cerulean warbler (threatened)

Cerulean warbler (*Setophaga cerulea*) and their habitat would not be negatively affected by this project. Cerulean warblers spend the breeding season, summer, in mature tall deciduous forests with an open understory

(MECP 2019a). This habitat is not present on or within 120 m of the project footprint. No observations of cerulean warbler, or signs of their presence, were found on the project footprint during the field investigation.

Eastern hog-nosed snake (threatened)

Eastern hog-nosed snake (*Heterodon platirhinos*) and their habitat would not be negatively affected by this project. Eastern hog-nosed snake dig burrows in sandy, well-drained habitats such as beaches and dry forests to lay their eggs and hibernate (MECP 2021i). This habitat is not present on or within 120 m of the project footprint. No observations of eastern hog-nosed snake, or signs of their presence, were found on the project footprint during the field investigation.

Eastern meadowlark (threatened)

Eastern meadowlark (*Sturnella magna*) and their habitat may be negatively affected by this project. Eastern meadowlarks are obligate grassland species that nest on the ground, and forage in tall grasslands and open areas including pastures and hay fields (McCracken et al. 2013). Ideal habitat contains moderately tall (25 to 50 cm) grass with abundant litter cover, a high proportion of grass, moderate to high forb density, low shrub and woody vegetation cover, and low percent cover of bare ground (Wiens 1969). The minimum area requirement to support breeding of this species is 5 hectares (Herkert et al. 2003). There is suitable habitat for eastern meadowlark found on and within 120 m of the project footprint. Eastern meadowlark were observed and territorial calls were heard in the same field as the project footprint and within the northeastern field (Figure 5; Appendix B, Figure 12).

Eastern whip-poor-will (threatened)

Eastern whip-poor-will (*Antrostomus vociferus*) and their habitat would not be negatively impacted by this project. Eastern whip-poor-will nest in forests in an early stage of succession that include open features (ex: rock or sand barrens with scattered trees, savannahs, old burns or sparse conifer plantations) and sand or sandy-loam soil (Environment Canada 2015). Suitable foraging habitat must be adjacent to nesting habitat because eastern whip-poor-will forage within 500 m of their nests (Environment Canada 2015). These habitats do not occur on or within 120 m of the project footprint. No observations of eastern whip-poor-will, or signs of their presence, were found on the site during the site investigation.

Least bittern (threatened)

Least bittern (*Ixobrychus exilis*) and their habitat will not be negatively affected by this project. Least bittern nest in cattail marshes with a mix of open pools and channels and forage in nearby open water (OMNRF 2016). Least bitterns prefer larger marshes that are at least 5 hectares in size with at least 50% of the wetland being open water (COSEWIC 2009). Marsh habitat does not exist within 120 m of the project footprint. Therefore, the study area does not contain suitable habitat for least bittern. No observations of least bittern, or signs of their presence, were found on the site during the field investigation.

Little brown myotis (endangered)

Little brown myotis (*Myotis lucifugus*) and their habitat may be negatively affected by this project. Little brown myotis predominantly form maternity roosts in buildings and other anthropogenic structures including chimneys, bat boxes, bridges, and barns as well as cavities of canopy trees, within foliage, and under tree bark (ECCC 2018). Little brown myotis forage over water and in open areas (ECCC 2018). There are no anthropogenic features on the project footprint that provide suitable roosting habitat. However, there may be mature decaying trees with exfoliating bark suitable for roosting within 120 m of the project footprint in the forested area south east of the project footprint. Suitable habitat for little brown myotis may exist within 120 m of the project footprint. No observations of little brown myotis, or signs of their presence, were found on the site during the field investigation.

Loggerhead Shrike (endangered)

Loggerhead shrike (*Lanius ludovicianus*) and their habitat will not be negatively affected by this project. Loggerhead shrikes forage and nest in large, grazed pastures, grasslands, or alvars with scattered spiny shrubs, such as hawthorn (*Crataegus spp.*), or barbed-wire fencing (MECP 2019b). These habitats are not present on or within 120 m of the property. Therefore, loggerhead shrike habitat is not present. No observations of loggerhead shrikes, or signs of their presence, were found on the site during the field investigation.

Northern myotis (endangered)

Northern myotis (*Myotis septentrionalis*) and their habitat may be negatively affected by this project. Northern myotis roost in hollow trees, tree crevices, and under exfoliating bark (OMNRF 2017). Northern myotis are slow flyers and roost in cluttered environments, including within the forest along edges

(OMNRF 2017). During the study area investigation, no suitable snag trees were observed on the project footprint. However, there may be such trees within 120 m of the project footprint in the forested area south east of the project footprint that could be suitable habitat for northern myotis. No observations of northern myotis, or signs of their presence, were found on the site during the field investigation.

Pale-bellied frost lichen (endangered)

Pale-bellied frost lichen (*Physconia subpallida*) and their habitat will not be negatively affected by this project due to lack of interior forest and old growth trees. Pale-bellied frost lichen grows on hardwood bark including white ash (*Fraxinus americana*), black walnut (*Juglans nigra*), and American elm (*Ulmus americana*) (MECP 2019c). No observations of pale-bellied frost lichen were found on the project footprint during the field investigation.

Tri-colored bat (endangered)

Tri-colored bat (*Perimyotis subflavus*) and their habitat would not be negatively affected by this project. Tri-colored bats use older dense to open forests to form day roosts and maternity colonies (OMNRF 2017). This species typically selects oak and maple trees to roost in. Tri-colored bats forage along riparian corridors, over water and within gaps in forest canopies (OMNRF 2017). During the study area investigation, no suitable snag trees were observed on the project footprint. However, there may be such trees within 120 m of the project footprint in the forested area south east of the project footprint that could be suitable habitat for tri-colored bat. No observations of tri-colored bat, or signs of their presence, were found on the site during the field investigation.

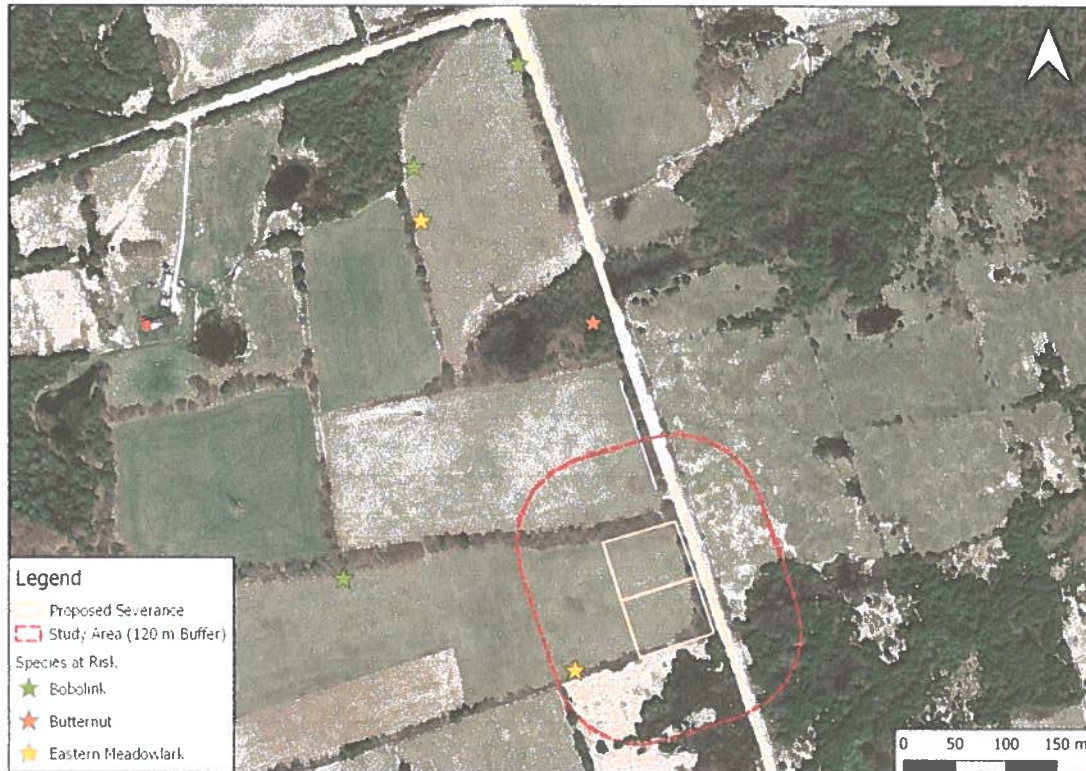


Figure 5. Locations of SAR observed during field investigation.

6 Impact assessment

The anticipated impacts of the proposed severance on the natural heritage features that are or are likely present on and within 120 m of the project footprint are outlined in this section. The impacts are based on the most recent development plan provided to Blazing Star Environmental.

Significant wildlife habitat

Seeps and springs

No development activities or site alterations are proposed for the swamp (SWMO1-1) area southeast of the project footprint that may contain seeps and springs.

Potential impacts of the proposed development activities to potential seeps and springs include:

- Release of contaminants (i.e., sediments, salt, gasoline, oil, nutrients) in surface water from future development activities and eventual residential activities may pollute seeps and springs.

Avoidance and mitigation measures

Seeps and springs have not been confirmed on or within 120 m of the project footprint at this time. The precautionary principle will be applied, and the following mitigations will be implemented unless absence of this habitat feature is confirmed by a qualified biologist.

- To decrease risk of contamination of habitat, maintain a minimum 30 m vegetated buffer surrounding the wetland (SWMO1-1) within the study area.
- Provincial best practices regarding preventing sedimentation into wetlands and watercourses will be followed during construction (GGHA CAs 2006). Ensure stormwater and other drainage is not discharged directly into the wetland (SWMO1-1) to minimize contaminants entering seeps and springs habitat.

Residual impact

This project, including the recommended avoidance and mitigation measures, will have no negative impacts on potential seeps and springs east of Fourth Line Road South.

Amphibian breeding habitat (woodland)

No development activities or site alterations are proposed for the swamp (SWMO1-1) southeast of the project footprint that may support amphibian breeding habitat (woodland).

Potential impacts of the proposed development activities to potential amphibian breeding habitat include:

- Release of contaminants (i.e., sediments, salt, gasoline, oil, nutrients) in surface water from future development activities and eventual residential activities may pollute adjacent breeding grounds. These contaminants may bioaccumulate in frogs and lead to decreased population levels.

- Human disturbance including frog catching and predation by pets may impact frog populations.

Avoidance and mitigation measures

Amphibian breeding habitat has not been confirmed on or within 120 m of the project footprint at this time. The precautionary principle will be applied, and the following mitigations will be implemented unless absence of this habitat feature is confirmed by a qualified biologist.

- To decrease risk of contamination of breeding habitat, maintain a minimum 30 m vegetated buffer surrounding the wetland (SWMO1-1) within the study area.
- Provincial best practices regarding preventing sedimentation into wetlands and watercourses will be followed during construction (GGHA CAs 2006). Ensure stormwater and other drainage is not discharged directly into the wetland (SWMO1-1) to minimize contaminants entering the potential amphibian breeding habitat (woodland).
- Encourage future new residents to keep pets on leash during the active season.

Residual impact

This project, including the recommended avoidance and mitigation measures, will have no negative impacts on potential amphibian breeding habitat (woodland) east of Fourth Line Road South.

Species of conservation concern

Canada warbler (special concern)

Canada warbler habitat may exist within 120 m of the project footprint within the swamp vegetation community (SWMO1-1).

Potential impacts of the proposed development activities to Canada warbler include:

- Release of contaminants (i.e., sediments, salt, gasoline, oil, nutrients) in surface water from development activities (vegetation removal, grading, dwelling construction) and increased road activity may pollute swamp habitat (SWMO1-1) and groundwater, resulting in altered vegetation community diversity that may be unsuitable for nesting and foraging.

- Increased human activity may increase predator populations, including pets, and lead to increased predation of eggs and fledglings.

Mitigation

Canada warbler habitat has not been confirmed on and within 120 m of the project footprint at this time. The precautionary principle will be applied, and the following mitigations will be implemented unless absence of this habitat feature is confirmed by a qualified biologist.

- To decrease risk of ground water contamination, maintain a minimum 30 m vegetated buffer between the swamp (SWMO1-1) and development activities (vegetation removal, grading, dwelling construction). A 30 m wide buffer will ensure nutrient and pollutant removal, regulate the temperature and microclimate of the wetland, and remove sediments transported from the surrounding fields (Environmental Law Institute 2003).
- Develop an erosion and sediment control plan following provincial best practices outlined in Erosion and Sediment Control for Urban Construction guideline to prevent contamination of ground water during construction (GGHA CAs 2006).
- Encourage new residents to keep pets on leash during breeding season (April 1-Aug 31).
- Provide future residents with educational resources about keeping cats indoors, as cats are one of the largest threats to bird populations killing between 100-350 million birds per year in Canada (Blancher 2013).
- Provide future residents with educational resources about minimizing food sources for predators (e.g., raccoons, skunks, foxes).

Residual impact

This project, including the recommended mitigation measures, will not have negative impacts on Canada warbler and their habitat.

Eastern wood-pewee (special concern)

Eastern wood-pewee habitat may exist within 120 m of the project footprint within the swamp vegetation (SWMO1-1) community.

Potential impacts of the proposed development activities to eastern wood-pewee include:

- Release of contaminants (i.e., sediments, salt, gasoline, oil, nutrients) in surface water from development activities (vegetation removal, grading, dwelling construction) and increased road activity may pollute swamp habitat (SWMO1-1) and groundwater, resulting in degraded habitat.
- Increased human activity may increase predator populations, including pets, and lead to increased predation of eggs and fledglings.

Mitigation

Eastern wood-pewee habitat has not been confirmed on and within 120 m of the project footprint at this time. The precautionary principle will be applied, and the following mitigations will be implemented unless absence of this habitat feature is confirmed by a qualified biologist.

- To decrease risk of ground water contamination, maintain a minimum 30 m vegetated buffer between the swamp (SWMO1-1) and development activities (vegetation removal, grading, dwelling construction). A 30 m wide buffer will ensure nutrient and pollutant removal, regulate the temperature and microclimate of the wetland, and remove sediments transported from the surrounding fields (Environmental Law Institute 2003).
- Develop an erosion and sediment control plan following provincial best practices outlined in Erosion and Sediment Control for Urban Construction guideline to prevent contamination of ground water during future construction (GGHA CAs 2006).
- Encourage new residents to keep pets on leash during breeding season (April 1-Aug 31) (COSEWIC 2012a).
- Provide future residents with educational resources about keeping cats indoors, as cats are one of the largest threats to bird populations killing between 100-350 million birds per year in Canada (Blancher 2013).
- Provide future residents with educational resources about minimizing food sources for predators (e.g., raccoons, skunks, foxes).

Residual impact

This project, including the recommended mitigation measures, will not have negative impacts on eastern wood-pewee and their habitat.

Grasshopper sparrow (special concern)

Grasshopper sparrow habitat may exist on and within 120 m of the project footprint within the open agriculture field community (OAGM2).

Potential impacts of the proposed development activities to grasshopper sparrow habitat include:

- Permanent loss of grasshopper sparrow breeding and foraging habitat (approximately 0.81 hectares).
- Habitat fragmentation resulting in a smaller patch of grassland habitat remaining (OAGM2).
- Increased edge effects including nest depredation by human subsidized predators including domestic cats, raccoons, and domestic dogs.
- Incidental mortality of offspring caused by nest destruction or disturbance during construction.

Mitigation

Grasshopper sparrow habitat has not been confirmed on and within 120 m of the project footprint at this time. The precautionary principle will be applied, and the following mitigations will be implemented unless absence of this habitat feature is confirmed by a qualified biologist.

- Grasshopper sparrow build small nests on the ground that are hidden in dense grass. To prevent nests, eggs, or young birds being crushed by machinery during construction, ensure no disturbance to breeding and nesting habitat from beginning of April to end of August (MECP 2021b; Vickery 1996).
- Ensure the least amount of habitat is disturbed, careful not to extend the project footprint.
- Encourage new residents to keep pets on leash during the breeding season (April 1-Aug 31) (COSEWIC 2013).
- Provide future residents with educational resources about keeping cats indoors, as cats are one of the largest threats to bird populations killing between 100-350 million birds per year in Canada (Blancher 2013).
- Provide future residents with educational resources about minimizing food sources for predators (e.g., raccoons, skunks, foxes).

Residual impact

This project, including the recommended mitigation measures, will not have negative impacts on grasshopper sparrow and their habitat.

Monarch (special concern)

Monarch habitat may exist on and within 120 m of the project footprint within open agriculture field community (OAGM2).

Potential impacts of the proposed development activities to monarch habitat include:

- Reduce the function of the habitat as foraging and breeding habitat by reducing the density of nectar-producing vegetation.

Mitigation

Monarch habitat has not been confirmed on and within 120 m of the project footprint at this time. The precautionary principle will be applied, and the following mitigations will be implemented unless absence of this habitat feature is confirmed by a qualified biologist.

- Leave as much natural habitat undisturbed, as possible.
- Limit the use of herbicides on the agricultural field as well as any new planted habitat.
- Encourage future residents to landscape using native plant species such as native flowering herbaceous plants, shrubs, and trees. Plant a variety of native flowering species with different bloom times to provide monarchs with the nectar and pollen needed to reproduce in the spring and summer and migrate in the fall. Include native milkweed species that will support monarch breeding; common milkweed (*Asclepias syriaca*), swamp milkweed (*Asclepias incarnata*), and butterfly milkweed (*Asclepias tuberosa*).
 - Grow Wild Native Plant Nursery: <http://www.nativeplantnursery.ca/>
 - Native Plants in Claremont: <http://www.nativeplants.ca/>

Residual impact

This project, including the recommended mitigation measures, will not have negative impacts on monarch and their habitat.

Red-headed woodpecker (special concern)

Red-headed woodpecker habitat may exist within 120 m of the project footprint within the swamp vegetation community (SWMO1-1).

Potential impacts of the proposed development activities to red-headed woodpecker include:

- Release of contaminants (i.e., sediments, salt, gasoline, oil, nutrients) in surface water from development activities (vegetation removal, grading, dwelling construction) and increased road activity may pollute swamp habitat (SWMO1-1) and groundwater, resulting in degraded habitat.
- Increased human activity may increase predator populations, including pets, and lead to increased predation of eggs and fledglings.

Mitigation

Red-headed woodpecker habitat has not been confirmed on and within 120 m of the project footprint at this time. The precautionary principle will be applied, and the following mitigations will be implemented unless absence of this habitat feature is confirmed by a qualified biologist.

- To decrease risk of ground water contamination, maintain a minimum 30 m vegetated buffer between the swamp (SWMO1-1) and development activities (vegetation removal, grading, dwelling construction). A 30 m wide buffer will ensure nutrient and pollutant removal, regulate the temperature and microclimate of the wetland, and remove sediments transported from the surrounding fields (Environmental Law Institute 2003).
- Develop an erosion and sediment control plan following provincial best practices outlined in Erosion and Sediment Control for Urban Construction guideline to prevent contamination of ground water during construction (GGHA CAs 2006).
- Encourage new residents to keep pets on leash during breeding season (April 1-Aug 31) (COSEWIC 2018b).
- Provide future residents with educational resources about minimizing food sources for predators (e.g., raccoons, skunks, foxes).

Residual impact

This project, including the recommended mitigation measures, will not have negative impacts on red-headed woodpecker and their habitat.

Snapping turtle (special concern)

Snapping turtle habitat may exist within 120 m of the project footprint within the swamp (SWMO1-1) vegetation community.

Potential impacts of the proposed development activities to snapping turtle include:

- Release of contaminants (i.e., sediments, salt, gasoline, oil, nutrients) in surface water from development activities (vegetation removal, grading, dwelling construction) and increased road activity may pollute swamp habitat (SWMO1-1) and groundwater.
- Increased human activity may increase predator populations, including pets, and lead to increased predation of eggs and hatchlings.

Mitigation

Snapping turtle habitat has not been confirmed on and within 120 m of the project footprint at this time. The precautionary principle will be applied, and the following mitigations will be implemented unless absence of this habitat feature is confirmed by a qualified biologist.

- To decrease risk of ground water contamination, maintain a minimum 30 m vegetated buffer between the swamp (SWMO1-1) and development activities (vegetation removal, grading, dwelling construction). A 30 m wide buffer will ensure nutrient and pollutant removal, regulate the temperature and microclimate of the wetland, and remove sediments transported from the surrounding fields (Environmental Law Institute 2003).
- Develop an erosion and sediment control plan following provincial best practices outlined in Erosion and Sediment Control for Urban Construction guideline to prevent contamination of ground water during construction (GGHA CAs 2006).
- Encourage new residents to keep pets on leash during breeding season (late May-late September) (COSEWIC 2008).
- Provide future residents with educational resources about minimizing food sources for predators (e.g., raccoons, skunks, foxes).

Residual impact

This project, including the recommended mitigation measures, will not have negative impacts on snapping turtle and their habitat.

Endangered and threatened species

Bobolink (threatened)

All hay fields (OAGM2) within on and within 120 m of the project footprint are suitable bobolink breeding and foraging habitat.

Potential impacts of the proposed development activities to bobolink include:

- Permanent loss of breeding and foraging habitat (approximately 0.8 hectares).
- Habitat fragmentation resulting in a smaller patch of grassland (OAGM2) remaining.
- Increased edge effects including nest depredation by human subsidized predators including domestic cats, raccoons, and domestic dogs.
- Incidental mortality of offspring caused by nest destruction or disturbance during construction.

Mitigation

Bobolink habitat has been confirmed on and within 120 m of the project footprint at this time. The precautionary principle will be applied, and the following mitigations will be implemented unless absence of this habitat feature is confirmed by a qualified biologist.

- Bobolink build small nests on the ground that are hidden in dense grass. To prevent nests, eggs, or young birds being crushed by machinery during construction, ensure no disturbance to breeding and nesting habitat from beginning of April to end of August. (MECP 2020b).
- Ensure the least amount of habitat is disturbed.
- Encourage new residents to keep pets on leash and check their lawn for nests/fledglings prior to mowing during the breeding season (April 1-Aug 31) (MECP 2020b).
- Provide future residents with educational resources about keeping cats indoors, as cats are one of the largest threats to bird populations killing between 100-350 million birds per year in Canada (Blancher 2013).
- Provide future residents with educational resources about minimizing food sources for predators (e.g., raccoons, skunks, foxes).

Residual impact

Bobolink is area sensitive and requires grassy patches much larger than their territory size of 300 m from the nest (Herkert 1991 & 1994; O'Leary and Nyberg 2000; Johnson 2001; Johnson and Igl 2001; Renfrew and Ribic 2008). The remaining field is approximately 6.2 hectares, fitting the minimal area requirements for suitable breeding habitat, 5 hectares (Nocera 2012).

Butternut (endangered)

Butternut habitat may exist within 120 m of the project footprint within the swamp vegetation community (SWMO1-1).

Potential impacts of the proposed development activities to butternut include:

- Release of contaminants (i.e., sediments, salt, gasoline, oil, nutrients) in surface water from development activities (vegetation removal, grading, dwelling construction) and increased road activity may pollute habitat and groundwater, altering suitability of substrate.

Mitigation

Butternut habitat has not been confirmed on and within 120 m of the project footprint at this time. The precautionary principle will be applied, and the following mitigations will be implemented unless absence of this habitat feature is confirmed by a qualified biologist.

- To decrease risk of groundwater contamination, maintain a minimum 30 m vegetated buffer between the swamp (SWMO1-1) and development activities (vegetation removal, grading, dwelling construction). A 30 m wide buffer will ensure nutrient and pollutant removal, regulate the temperature and microclimate of the wetland, and remove sediments transported from the surrounding fields (Environmental Law Institute 2003).
- Develop an erosion and sediment control plan following provincial best practices outlined in Erosion and Sediment Control for Urban Construction guideline to prevent contamination of ground water during construction (GGHA CAs 2006).

Residual impact

This project, including the recommended mitigation measures, will not have negative impacts on butternut and their habitat.

Eastern Meadowlark (threatened)

All hay fields (OAGM2) on and within 120 m of the project footprint are suitable eastern meadowlark breeding and foraging habitat.

Potential impacts of the proposed development activities to eastern meadowlark include:

- Permanent loss of eastern meadowlark breeding and foraging habitat (approximately 0.81 hectares).
- Habitat fragmentation resulting in a smaller patch of grassland (OAGM2) remaining.
- Increased edge effects including nest depredation by human subsidized predators including domestic cats, raccoons, and domestic dogs.
- Incidental mortality of offspring caused by nest destruction or disturbance during construction.

Mitigation

Eastern meadowlark habitat has been confirmed within 120 m of the project footprint at this time (Figure 5; Appendix B, Figure 12). The precautionary principle will be applied, and the following mitigations will be implemented unless absence of this habitat feature is confirmed by a qualified biologist.

- Eastern meadowlark build nests on the ground that are camouflaged with a grass woven roof. To prevent nests, eggs, or young birds from being crushed by machinery during construction, ensure no disturbance to breeding and nesting habitat (OAGM2) during the breeding season (April 1-Aug 31) (MECP 2020c).
- Ensure the least amount of habitat is disturbed, careful not to extend the project footprint.
- Encourage new residents to keep pets on leash and check their lawn for nests/fledglings prior to mowing during the breeding season, through signage and public education.
- Provide future residents with educational resources about keeping cats indoors, as cats are one of the largest threats to bird populations killing between 100-350 million birds per year in Canada (Blancher 2013).
- Provide future residents with educational resources about minimizing food sources for predators (e.g., raccoons, skunks, foxes).

Residual impact

Eastern meadowlark is a grassland dependent species but are not especially area-sensitive (McCracken et al. 2013). The remaining field is approximately 6.29 hectares, fitting the minimal area requirements for suitable breeding habitat, 5 hectares (Herkert 1994).

Little brown myotis, northern myotis, tri-colored bat (endangered)

Maternity roosting habitat does not occur within the project footprint but may occur within 120 m of the project footprint in the swamp (SWMO1-1).

Potential impacts of the proposed development activities to potential bat roosting and foraging habitat include:

- Loss of foraging habitat where future development will occur (approximately 0.81 hectares).

Mitigation

Maternity roosting habitat has not been confirmed on and within 120 m of the project footprint at this time. The precautionary principle will be applied, and the following mitigations will be implemented unless absence of this habitat feature is confirmed by a qualified biologist.

- Ensure no disturbance to bats by construction activities by completing any tree removal outside the roosting season (April 30-Sep 1).
- Encourage future residents to landscape using native plant species such as native flowering herbaceous plants, shrubs, and trees to increase insect populations for bat species and provide future roosting habitat.

Residual impact

This project will have no negative impacts on little brown myotis, northern myotis, or tri-colored bat and their habitat. The potential roosting habitat (snag trees in treed habitat southeast of the project footprint) will not be impacted.

Natural heritage features

Wetlands

Wetlands occur within 120 m of the project footprint (SWMO1-1).

Potential impacts of the proposed development activities to wetlands include:

- Release of contaminants (i.e., sediments, salt, gasoline, oil, nutrients) in surface water from development activities (vegetation removal, grading, dwelling construction) and increased road activity may pollute the wetland (SWMO1-1).

Mitigation

- To decrease risk of wetland contamination, maintain a minimum 30 m vegetated buffer between the swamp vegetation community (SWMO1-1) and development activities (vegetation removal, grading, dwelling construction). A 30 m buffer will ensure nutrient and pollutant removal, regulate the temperature and microclimate of the wetland, and remove sediments transported from the surrounding fields (Environmental Law Institute 2003).
- Develop an erosion and sediment control plan following provincial best practices outlined in Erosion and Sediment Control for Urban Construction guideline to prevent contamination of wetland during construction (GGHA CAs 2006).

Residual impact

This project, including the recommended mitigation measures, will have no negative impacts on wetlands.

Fish habitat

Fish habitat may occur within 120 m of the project footprint. The swamp (SWMO1-1) vegetation community has a network of ponds and channels which may provide fish habitat.

Potential impacts of the proposed development activities to fish habitat include:

- Release of contaminants (i.e., sediments, salt, gasoline, oil, nutrients) in surface water from development activities (vegetation removal, grading, dwelling construction) and increased road activity may pollute fish habitat.

Mitigation

- To decrease risk of fish habitat contamination, maintain a minimum 30 m vegetated buffer between the swamp vegetation community (SWMO1-1) and development activities (vegetation removal, grading, dwelling construction). A 30 m buffer will ensure nutrient and pollutant removal, regulate the temperature and microclimate of the wetland, and remove sediments transported from the surrounding fields (Environmental Law Institute 2003).
- Develop an erosion and sediment control plan following provincial best practices outlined in Erosion and Sediment Control for Urban Construction guideline to prevent contamination of fish habitat during construction (GGHA CAs 2006).

Residual impact

This project, including the recommended mitigation measures, will have no negative impacts on fish habitat.

Summary of avoidance and mitigation measures

Table 5. Summary of required mitigation measures for the lot severance of two residential lots on part of Lot 15, Concession 3, Dummer Township, County of Peterborough.

Required mitigations
• Ensure no disturbance to grassland breeding and nesting habitat (OAGM2) from April 1 until August 31.
• Ensure no disturbance to bats by construction activities by completing any tree removal outside the roosting season (April 30-Sep 1).
• Encourage new residents to keep pets on leash during the bird, and herpetofauna active season (April 1-Oct 31).
• Maintain a minimum 30 m vegetation protection zone between the swamp (SWMO1-1) and all development activities.

- Develop an erosion and sediment control plan following provincial best practices outlined in Erosion and Sediment Control for Urban Construction guideline (GGHA CAs 2006).
- Encourage future residents to landscape using native plant species such as native flowering herbaceous plants, shrubs and trees. Plant a variety of native flowering species with different bloom times to provide monarchs with the nectar and pollen needed to reproduce in the spring and summer and migrate in the fall. Include native milkweed species that will support monarch breeding; common milkweed (*Asclepias syriaca*), swamp milkweed (*Asclepias incarnata*), and butterfly milkweed (*Asclepias tuberosa*).
- Provide future residents with educational resources about keeping cats indoors, and about minimizing food sources for predators (e.g., raccoons, skunks, foxes).

7 Conclusion

The proposed severance for two residential dwellings on part of Lot 15, Concession 3, Dummer Township, County of Peterborough including recommended avoidance and mitigation measures will have no negative impacts on the adjacent natural heritage system including potential SWH, suitable SAR habitat, and an unevaluated wetland. Potential impacts are to be avoided by following the avoidance and mitigation measures outlined in this scoped EIS including, but not limited to, maintaining a minimum 30 m vegetation protection zone between the swamp (SWMO1-1) and all development activities, develop an erosion and sediment control plan to prevent contamination of wetland habitat during future construction (GGHA CAs 2006). Figure 6 illustrates the project footprint with vegetation buffer applied.

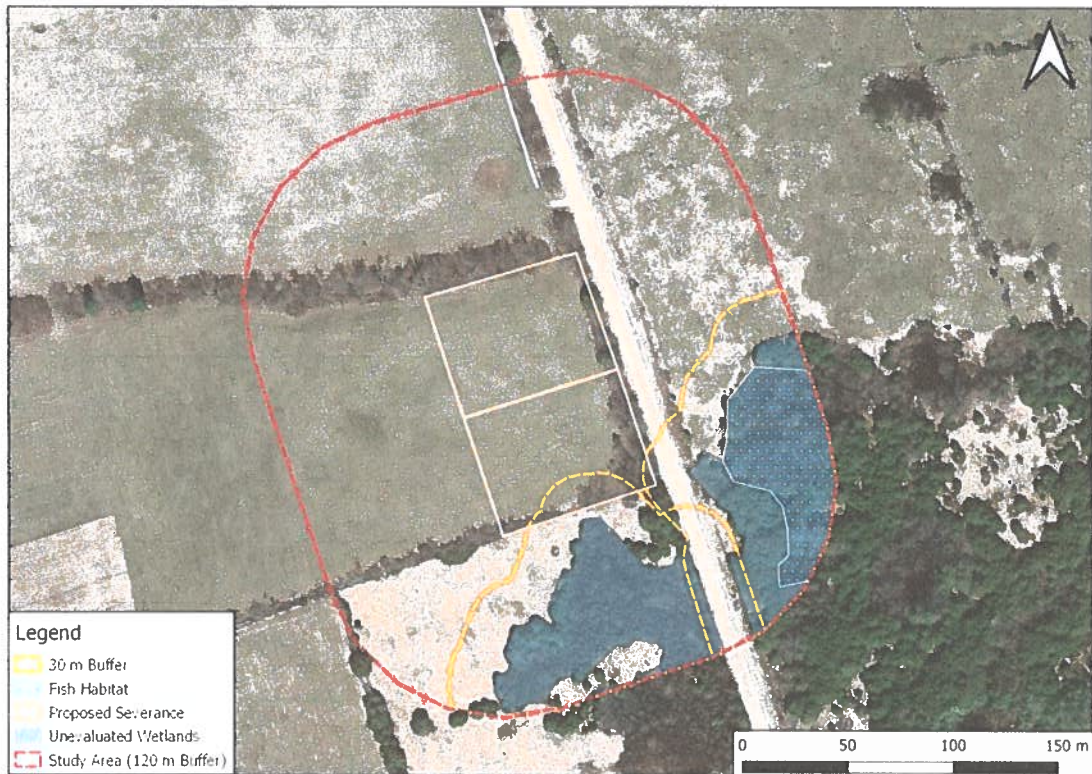


Figure 6. The project footprint with vegetation buffer (yellow), fish habitat (light blue), and unevaluated wetlands (blue) applied.

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Appendix A: Records review details

Table 6. SAR occurrences within 10 km of project footprint from NHIC Make A Map tool accessed January 6, 2021.

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT
1065160	SPECIES	Common Five-lined Skink (Southern Shield population)	Plestiodon fasciatus pop. 2	S3	SC	SC	17QK3337
1062228	SPECIES	Eastern Meadowlark	Sturnella magna	S4B	THR	THR	17QK2934
1062228	SPECIES	Eastern Wood-pewee	Contopus virens	S4B	SC	SC	17QK2934
1065130	SPECIES	Butternut	Juglans cinerea	S2?	END	END	17QK3037
1065190	SPECIES	Cerulean Warbler	Setophaga cerulea	S3B	THR	END	17QK3637
1065199	SPECIES	Flooded Jellyskin	Leptogium rivulare	S3	NAR	SC	17QK3736
1067411	SPECIES	Wood Thrush	Hylocichla mustelina	S4B	SC	THR	18TQ6331
1065038	SPECIES	Bobolink	Dolichonyx oryzivorus	S4B	THR	THR	17QK3025
1065098	SPECIES	Blanding's Turtle	Emydoidea blandingii	S3	THR	END	17QK3625
1065163	SPECIES	Eastern Ribbonsnake	Thamnophis sauritus	S4	SC	SC	17QK3430
1062065	SPECIES	Barn Swallow	Hirundo rustica	S4B	THR	THR	17QK2321

106198 2	SPECIE S	Loggerhead Shrike	Lanius ludovicianu s	S2B	END	END	17QK241 8
106203 5	SPECIE S	Least Bittern	Ixobrychus exilis	S4B	THR	THR	17QK202 1
106203 5	SPECIE S	Black Tern	Chlidonias niger	S3B	SC	NAR	17QK202 1
106219 8	SPECIE S	Northern Map Turtle	Graptemys geographic a	S3	SC	SC	17QK263 4
106742 0	SPECIE S	Pale-bellied Frost Lichen	Physconia subpallida	S3	END	END	18TQ643 0
106213 4	SPECIE S	Eastern Musk Turtle	Sternotheru s odoratus	S3	SC	SC	17QK203 0

Appendix B: Site visit photos



Figure 7. Rock pile and fence on the southern edge of southern hay field on perimeter of project footprint (OAGM2).



Figure 8. Southern hay field within project footprint (OAGM2).



Figure 9. Southern hay field within project footprint (OAGM2).



Figure 10. Southern field within project footprint (OAGM2).



Figure 11. Southern field, including hedgerow habitat within project footprint (THDM3-2).



Figure 12. Eastern meadowlark (center of pink circle) on branch in hedgerow (THDM3-2) adjacent to northern field observed giving a single, sharp 'dzert' note. This territorial call is made when humans or other eastern meadowlarks intrude on their territory (Cornell University 2019).



Figure 13. Swamp forest (SWMO1-1) across Fourth Line Road South southeast of the project footprint.



Figure 14. Swamp forest (SWMO1-1) southeast across Fourth Line Road South from project footprint.

Appendix C: Vegetation inventory

Table 7. Dominant vegetation species observed within study area.

Vegetation community	Scientific name	Common name
Agriculture - Open Agriculture - Perennial Cover Crops (OAGM2)	<i>Poaceae spp.</i>	Grass spp.
	<i>Leucanthemum vulgare</i>	Oxeye daisy
	<i>Trifolium pratense</i>	Red clover
	<i>Lotus corniculatus</i>	Birds trefoil
Fresh - Moist White Elm Lowland Deciduous Forest (FODM7-1)	<i>Ulmus laevis</i>	White elm
	<i>Tilia americana</i>	American basswood
White Cedar - Hardwood Organic Mixed Swamp (SWM01-1)	<i>Thuja occidentalis</i>	Eastern white cedar
	<i>Acer saccharinum</i>	Silver maple
	<i>Populus tremuloides</i>	Trembling aspen
	<i>Tilia americana</i>	American basswood
	<i>Salix spp.</i>	Willow spp.

Appendix D: Incidental wildlife observed during field investigation

Table 8. Incidental wildlife observed during field investigation June 12, 2020.

Taxa	Scientific Name	Common Name	Notes
Bird	<i>Cyanocitta cristata</i>	Blue Jay	Observed
	<i>Agelaius phoeniceus</i>	Red-winged blackbird	Observed
	<i>Colaptes auratus</i>	Northern flicker	Observed
	<i>Dolichonyx oryzivorus</i>	Bobolink	Observed and heard breeding call
	<i>Sturnella magna</i>	Eastern meadowlark	Observed and heard territorial call
	<i>Tyrannus tyrannus</i>	Eastern kingbird	Observed

Appendix E: Proposed site plan

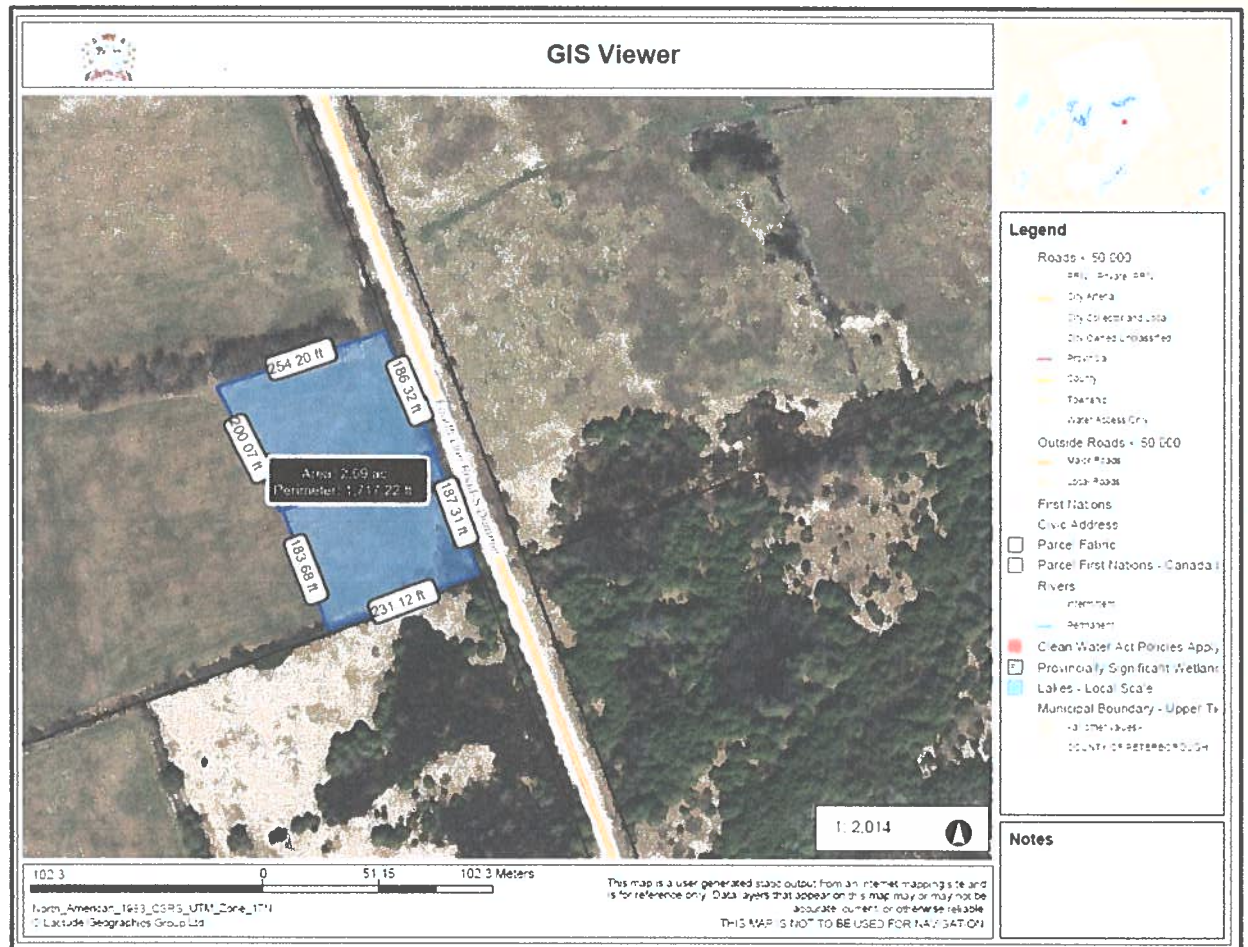


Figure 15. The most recent severance plan at the time of this report prepared by Latitude Geographics Group.

Appendix F: Natural heritage features present

Table 9. Natural heritage features present or potentially present on the property with associated relevant policies and protection.

Protected feature/species	Relevant policies	Protection	Area of property impacted
Seeps and springs	Provincial Policy Statement (2020)	Development and site alteration shall not be permitted in SWH.	The unevaluated swamp habitat (SWMO1-1) within 120 m southeast of project footprint (Figure 3).
	County of Peterborough Official Plan (1994)	The vegetation protection zone required for the protection of natural heritage or hydrologic features and their ecological functions shall not be less than 30 metres.	
	Growth Plan for the Greater Golden Horseshoe (2020)		
Amphibian breeding habitat (woodland)	Provincial Policy Statement (2020)	Development and site alteration shall not be permitted in SWH.	The unevaluated swamp habitat (SWMO1-1) within 120 m southeast of project footprint (Figure 3).
	County of Peterborough Official Plan (1994)	The vegetation protection zone required for the protection of natural heritage or hydrologic features and their ecological functions shall not be less than 30 metres.	
	Growth Plan for the Greater Golden Horseshoe (2020)		

Bobolink (threatened)	<i>Endangered Species Act (2007)</i>	Species classified as endangered or threatened automatically receive legal protection as well as their habitat.	Project footprint agriculture field (OAGM2) (Figure 4, 8-11).
	<i>Migratory Birds Convention Act (1994)</i>	Protects migratory birds, their eggs, and their nests from disturbance, removal, destruction, trafficking, and commercialization.	
Butternut (endangered)	<i>Endangered Species Act (2007)</i>	Species classified as endangered or threatened automatically receive legal protection as well as their habitat.	The swamp habitat (SWMO1-1) within 120 m southeast of project footprint (Figure 3).
Eastern meadowlark (threatened)	<i>Endangered Species Act (2007)</i>	Species classified as endangered or threatened automatically receive legal protection as well as their habitat.	Project footprint agriculture field (OAGM2) (Figure 4, 8-11).
	<i>Migratory Birds Convention Act (1994)</i>	Protects migratory birds, their eggs, and their nests from disturbance, removal, destruction,	

		trafficking, and commercialization.	
SAR Bats: Little brown myotis, northern myotis, tri-colored bat (endangered)	<i>Endangered Species Act (2007)</i>	Species classified as endangered or threatened automatically receive legal protection as well as their habitat.	Project footprint agriculture field (OAGM2) (Figure 4, 8-11).
	Provincial Policy Statement (2020)	Development and site alteration shall not be permitted in SWH unless it has been demonstrated there will be no negative impacts on their natural features or on their ecological functions.	
Canada Warbler (special concern)	<i>Migratory Birds Convention Act (1994)</i>	Protects migratory birds, their eggs, and their nests from disturbance, removal, destruction, trafficking, and commercialization. Development and site alteration shall not be permitted in SWH unless it has been demonstrated there will be no negative impacts on their natural features or on their ecological functions.	The swamp habitat (SWMO1-1) within 120 m southeast of project footprint (Figure 3).
	Provincial Policy Statement (2020)		

Eastern wood-pewee (special concern)	<i>Migratory Birds Convention Act (1994)</i>	Protects migratory birds, their eggs, and their nests from disturbance, removal, destruction, trafficking, and commercialization.	The swamp habitat (SWMO1-1) within 120 m southeast of project footprint (Figure 3).
	Provincial Policy Statement (2020)	Development and site alteration shall not be permitted in SWH unless it has been demonstrated there will be no negative impacts on their natural features or on their ecological functions.	
Grasshopper sparrow (special concern)	<i>Migratory Birds Convention Act (1994)</i>	Protects migratory birds, their eggs, and their nests from disturbance, removal, destruction, trafficking, and commercialization.	The swamp habitat (SWMO1-1) within 120 m southeast of project footprint (Figure 3).
	Provincial Policy Statement (2020)	Development and site alteration shall not be permitted in SWH unless it has been demonstrated there will be no negative impacts on their natural features or on their ecological functions.	

Monarch (special concern)	Provincial Policy Statement (2020)	Development and site alteration shall not be permitted in SWH unless it has been demonstrated there will be no negative impacts on their natural features or on their ecological functions.	Project footprint agriculture field (OAGM2) (Figure 4, 8-11).
Red-headed woodpecker (special concern)	<i>Migratory Birds Convention Act</i> (1994)	Protects migratory birds, their eggs, and their nests from disturbance, removal, destruction, trafficking, and commercialization. Development and site alteration shall not be permitted in SWH unless it has been demonstrated there will be no negative impacts on their natural features or on their ecological functions.	The swamp habitat (SWMO1-1) within 120 m southeast of project footprint (Figure 3).
	Provincial Policy Statement (2020)		
Snapping turtle (special concern)	Provincial Policy Statement (2020)	Development and site alteration shall not be permitted in SWH unless it has been demonstrated there will be no negative impacts on their natural features or on their ecological functions.	The swamp habitat (SWMO1-1) within 120 m southeast of project footprint (Figure 3).

Wetlands	County of Peterborough Official Plan (1994) Growth Plan for the Greater Golden Horseshoe (2020)	The vegetation protection zone required for the protection of natural heritage or hydrologic features and their ecological functions shall not be less than 30 metres.	The unevaluated wetland habitat (SWMO1-1) southeast of project footprint (Figure 3).
	Provincial Policy Statement (2020)	Development and site alteration shall not be permitted in fish habitat.	
Fish habitat	County of Peterborough Official Plan (1994) Growth Plan for the Greater Golden Horseshoe (2020)	The vegetation protection zone required for the protection of natural heritage or hydrologic features and their ecological functions shall not be less than 30 metres.	The unevaluated fish habitat (SWMO1-1) southeast of project footprint (Figure 3).