

SARAH PROPERTIES LTD.

## ENVIRONMENTAL IMPACT STUDY: PART LOT 24, CONCESSION 1

GEOGRAPHIC TOWNSHIP OF EAST OF OWEN  
SOUND ROAD, MUNICIPALITY OF WEST GREY,  
COUNTY OF GREY

FEBRUARY 03, 2020





# ENVIRONMENTAL IMPACT STUDY: PART LOT 24, CONCESSION 1 GEOGRAPHIC TOWNSHIP OF EAST OF OWEN SOUND ROAD, MUNICIPALITY OF WEST GREY, COUNTY OF GREY

SARAH PROPERTIES LTD.

PROJECT NO.: 181-15551-00

DATE: FEBRUARY 03, 2020

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February 03, 2020

Sarah Properties Ltd.  
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Dear Mr. Burnside,

**Subject: Environmental Impact Study: Part Lot 24, Concession 1  
Geographic Township of East of Owen Sound Road, Municipality of West  
Grey, County of Grey, Ontario**

WSP Canada Inc. (WSP) is pleased to provide you with our Environmental Impact Study for the site described as Part Lot 24, Concession 1, Geographic Township of East of Owen Sound Road, Municipality of West Grey, County of Grey, Ontario.

This report outlines the existing conditions within the area surveyed by WSP at the time of the site investigations. An assessment of the potential for negative impacts to natural features on the site has been provided along with recommendations for development of the Site, and mitigation measures to help maintain, to the extent possible, the form and function of the features found on and within the area of influence of the development.

Thank you for the opportunity to complete this assignment. Please contact the undersigned with any questions or comments.

Yours truly,

A handwritten signature in blue ink, appearing to read 'Dan Reeves'.

Dan Reeves, M.Sc., ISA Certified  
Arborist  
Director, Ecology

CEP/dlw

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# 1 INTRODUCTION

WSP Canada Inc. (WSP) has been retained to complete an Environmental Impact Study (EIS) for a proposed 14 ha (35 acre) subdivision. The property is located within Part Lot 24, Concession 1, Geographic Township of East of Owen Sound Road, Municipality of West Grey, County of Grey, Ontario; herein referred to as the “Site”. Refer to **Figure 1** for site location details. The scope for this EIS has been developed based on direction provided by the Saugeen Valley Conservation Authority (SVCA) as outlined in a letter dated January 11, 2019 (**Appendix A**), as well as in compliance with the 2012 Grey County Official Plan (OP) and the 2012 Municipality of West Grey OP.

This study considers the proposed Site Plan, including the developable area in relation to identified Natural Heritage Features, while recommending mitigation and enhancements to ensure no negative impacts to these features or their ecological functions. This report provides a description of the existing conditions on the Site as determined through consultation with relevant authorities, reviews of secondary source information, and direct observation during the site investigations.

## 2 ENVIRONMENTAL POLICY CONTEXT

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### 2.1 PROVINCIAL POLICY STATEMENT

The Provincial Policy Statement (PPS) (Ontario Ministry of Municipal Affairs and Housing (OMMAH), 2014) is a planning document that provides a framework for, and governs development within, the Province of Ontario. In order to preserve various ecological resources deemed significant in the Province, Natural Heritage Systems must be identified, and development lands must be assessed for the presence of natural heritage features and sensitive hydrological features prior to construction. Natural Heritage Features (listed below) are both defined and afforded protections under the PPS. Linkages between natural heritage features, surface water and groundwater features are also recognized and afforded similar protections under the policy. Section 2.1.2 of the PPS also requires that the diversity and connectivity of natural heritage features and the long-term ecological function of natural heritage systems be maintained, restored or improved where possible.

Under the PPS (OMMAH, 2014), development or site alteration is prohibited within significant wetlands in Ecoregion, 6E and in significant coastal wetlands, but may be allowed adjacent to these features provided the adjacent lands have been evaluated and it has been demonstrated that there will be no negative impacts to these features or their ecological functions.

Development may be permitted in or adjacent to significant wetlands north of Ecoregion 6E significant woodlands and significant valleylands in Ecoregion 6E (excluding islands in Lake Huron and the St. Mary’s River), significant wildlife habitat, and significant areas of natural and scientific interest (ANSI), provided there will be no negative impacts to these features or their ecological functions due to the proposed undertaking. In addition, development and site alteration is not permitted in habitats of endangered or threatened species, or in fish habitat, unless in accordance with provincial and federal legislation.

In summary, natural heritage features as defined by the PPS (OMMAH, 2014) include:

- Fish Habitat;
- Habitats of Endangered and Threatened Species;
- Significant Areas of Natural and Scientific Interest (ANSI);
- Significant Wetlands;
- Significant Coastal Wetlands;
- Significant Wildlife Habitat;

- Significant Woodlands in Ecoregions 6E (excluding islands in Lake Huron and the St. Mary's River); and,
- Significant Valleylands in Ecoregions 6E (excluding islands in Lake Huron and the St. Mary's River).

Planning policies as they relate to surface water features and groundwater features are outlined within Section 2.2 of the PPS (2014). Specifically, development and site alteration in or near sensitive surface water features and sensitive groundwater features should be restricted to ensure the protection, improvement, and/or restoration of these features and their hydrologic functions, as well as the quality and quantity of water within the watershed and adjacent watersheds.

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## 2.2 COUNTY OF GREY OFFICIAL PLAN

The County of Grey Official Plan, effective June 7, 2019, is a policy document that contains goals, objectives and policies to manage and direct physical (land use) change and monitor its effects on the cultural, social, economic and natural environment within the regional community. Section 7 of the Plan focuses on the protection and enhancement of the natural environment through the identification and management of natural areas and/or features. The boundaries and extent of the Natural Heritage Areas outside of these designated plan areas are considered to be approximate and refinements to the boundaries are possible through approved planning applications supported by appropriate technical studies including Environmental Impact Studies (County of Grey OP, Section 7.11.1). Development and site alteration is generally prohibited within natural heritage areas, but is assessed on a case by case basis and may be permitted following the completion of an Environmental Impact Study that demonstrates that there will be no negative impacts.

Significant Woodland mapping as per policy 2.8.4, the forest cover within the Site (see **Figure 2**), has been designated as 'Significant Woodland'. The Grey County Official Plan policy 2.8.4.1 in part states, "No development or site alteration may occur within Significant Woodlands or their adjacent lands (50 m) unless it has been demonstrated through an Environmental Impact Study ... that there will be no negative impacts on the natural features or their ecological functions.

Development proponents shall be required to prepare an EIS for any proposal that is:

- In, or within 120 metres of, a provincially significant wetland;
- In, or within 30 metres of all "Other Wetlands" (there are no areas identified as "Other Wetlands" by the County's Official Plan on or within 120 m of the Site);
- In, or within 120 metres of, the habitat of threatened or endangered species;
- In, or within, 120 metres of, a significant woodland, significant valleyland, significant wildlife habitat, deer wintering areas;
- In, or within 120 metres of, fish habitat;
- Within 120 meters of core areas;
- In, or within 50 metres of Areas of Natural and Scientific Interest (ANSI) Earth Science;
- In, or within 120 metres of Areas of Natural and Scientific Interest (ANSI) Life Science (there are no areas identified as "ANSIs" by the County's Official Plan on or within 120 m of the Site).

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## 2.3 MUNICIPALITY OF WEST GREY OFFICIAL PLAN

The Municipality of West Grey's Official Plan (2012) specifies the long-term vision for the Municipality and provides guidance for managing growth and development within Durham and Neustadt. Section E1 of the Official Plan contains the Municipality's environmental policies for the protection and enhancement of environmental features including habitat of endangered or threatened species, significant wildlife habitat, wetlands, significant valleylands, areas of natural and scientific interest, significant woodlands and fish habitat. Section E.1.2.2 states that no development or site alteration is permitted in habitat of endangered species; however, development and site

alteration may be permitted on adjacent lands provided that an EIS can prove that no negative impacts will occur. Section E.1.2.5 states that there are no Significant Wetlands or ANSIs within or adjacent to Durham, and therefore no policies are provided with regard to those two (2) features. Section E.1.2.6 defines Significant Woodlands as reflected on Appendices A and B and outlines the criteria to determine significance According to the Municipal Plan, in order to be considered significant within a settlement area, the woodland must be greater than or equal to four (4) ha in size. Section E.1.2.6 states, “No development or site alteration shall occur within Significant Woodlands or their adjacent lands unless it has been demonstrated through an Environmental Impact Study, in accordance with Section E.1.2.9, that there will be no negative impacts on the natural features or their ecological functions. The “adjacent lands” are defined as lands within 120 m of the Significant Woodland.” The wooded habitat to the northwest and northeast corners of the site is identified as Significant Woodland, as identified in **Appendix B** of the Municipality of West Grey’s Official Plan (2011).

Section E.1.2 of the Municipality’s OP outlines the criteria for adjacent lands in relation to individual features requiring protection. They are as follows;

- a) 30 metres of wetlands that are of local significance, which are labeled in Appendices A and B as “Other Wetlands” in the County’s Official Plan;
- b) 120 metres from the habitat of an endangered or threatened species;
- c) 120 metres from the boundary of fish habitat;
- d) 120 metres from significant valleylands;
- e) 120 metres from significant wildlife habitat; and,
- f) 120 metres from a significant woodland.

The Site is designated as Residential in Schedule A: Land Use Plan in Durham (2011).

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## 2.4 CONSERVATION AUTHORITIES ACT

The Conservation Authorities Act commissions conservation authorities to review and comment on development and activities in or adjacent to river or stream valleys, Great Lakes and large inland lakes and shorelines, watercourses, hazardous lands and wetlands. Regulations made under the Conservation Authorities Act specify the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulations managed by individual Conservation Authorities. These regulations apply to lands within river or stream valleys, flood plains, wetlands, watercourses, lakes, hazardous lands or lands within 120 m of a Provincially Significant Wetland or wetlands greater than 2 hectares, or lands within 30 m of non-provincially significant wetlands. Development or site alteration within these regulated areas may be permitted provided development is conducted in accordance with existing policies.

The Site is located within the Saugeen Valley Conservation Authority (SVCA) jurisdiction, but does not fall within the regulated area. Work must be conducted in accordance with Ontario Regulation 169/06 made under the Conservation Authorities Act and through the requirements of the SVCA. The Site does not fall within the SVCA regulated areas; however, the SVCA is providing technical review support to the County on the EIS submission.

## 3 INFORMATION RESOURCES

Relevant information resources were consulted over the course of the report preparation, as documented below. Full references are provided in the Literature Cited section of this report.

- Aerial Photographs and Satellite Images;
- Atlas of the Breeding Birds of Ontario (Bird Studies Canada, 2006);
- Conservation Authorities Act, Ontario Regulation 169/06 Saugeen Valley Conservation Authority (2013);
- County of Grey Official Plan (2019);

- Endangered Species Act, 2007 (Government of Ontario, 2007);
- Fisheries Act, c. F-14 (Government of Canada, 1985);
- Forestry Act, C.F.26 (Government of Ontario, 2009);
- Migratory Birds Convention Act (Government of Canada, 1994);
- Municipality of West Grey Official Plan (2012);
- Natural Heritage Areas Mapping, including Natural Heritage Information Centre (NHIC) data (MNRF, 2014);
- Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005 (MNRF, 2010);
- Ontario Reptile and Amphibian Atlas (ORAA) (Ontario Nature, 2015)
- Provincial Policy Statement (OMMAH, 2014);
- Significant Wildlife Habitat: Technical Guide (MNRF, 2000);
- Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (MNRF, 2015);
- Species at Risk in Ontario (SARO) List (Government of Ontario, 2018); and,
- Species at Risk Public Registry (Government of Canada, 2015).

## 4 AGENCY CONSULTATION

On April 1, 2019, the administration of the *Endangered Species Act, 2007* (ESA; Government of Ontario (Ontario, 2007)) was transferred to the Ministry of Environment, Conservation and Parks (MECP). It is understood that project files relating to Species at Risk (SAR) were transferred from the Ontario Ministry of Natural Resources and Forestry (MNRF) to the MECP and all subsequent consultation regarding permits and approvals is to occur with the MECP. The MECP was contacted to obtain information pertaining to Natural Heritage Features, species at risk, and other developmental constraints on the Site to ensure that available information was reviewed prior to initiating the field program. A copy of email correspondence from Midhurst District MNRF staff outlining potential concerns in the vicinity of the Site is provided in **Appendix A**. The original request for information was sent out November 23, 2018 and a response was received from Jody Scheifley, Biologist at the Owen Sound office of the Midhurst District MNRF. Mr. Scheifley outlined some additional SAR to be aware of while conducting site investigations. A record of this correspondence is found in **Appendix A**. This EIS has been prepared to address these SAR considerations.

## 5 PROPOSED DEVELOPMENT

The landowner is seeking approval to construct a proposed subdivision that will consist of mixed density residential lots. This study aims to determine the potential impacts of the proposed development on the existing natural environment, and suggest measures to minimize the potential negative impacts to natural heritage features and hydrologic features known or identified on or adjacent to the Site. Furthermore, this study explores the feasibility of the Site for development within the current legislative policies.

## 6 SITE INFORMATION

### 6.1 SITE DESCRIPTION

The Site is described as Part Lot 24, Concession 1, Geographic Township of East of Owen Sound Road, Municipality of West Grey, County of Grey (**Figure 1**). The Site is located east of Highway 6 and north of Durham Road East, within the hamlet of Durham. The Site is mostly agricultural lands actively managed for hay, with two (2) small areas of deciduous forest within the northeast and northwest corners of the Site. These woodland areas are mapped as Significant Woodland on **Appendix B** of the County of Grey Official Plan (2019). Untreed areas of the property are actively farmed; at the time of the 2019 site investigation, the field supported hay. A full description of

the flora on the Site is provided in Section 7.2 of this report. The Site is surrounded by forest to the north and northeast, and by agricultural and residential dwellings to the west, south and southeast. The Site is approximately 400 m north of the Saugeen River.

## 6.2 SITE VISITS

Prior to the site visit, satellite images of the property, land use and topographical maps were reviewed to identify the presence of Natural Heritage Features, available habitat and the potential for species of conservation concern on the Site. The Natural Heritage Areas Mapping, including the NHIC data (MNRF, 2014), was reviewed for records of Species at Risk, Significant Plant Communities, Wildlife Concentration Areas and Areas of Natural and Scientific Interest (ANSI) on or near the Site.

Site visits were conducted on seven (7) occasions between February and August 2019. Details of each site visit are provided in **Table 6-1**, below.

**Table 6-1 Details of Site Visits**

DATE	WEATHER CONDITIONS*	SURVEYS COMPLETED
February 19, 2019	Overcast skies, light snow, no breeze, temperature approximately -7°C.	Bat habitat snag tree density survey
April 18, 2019	Overcast skies, precipitation, light air movement, temperature approximately 14°C.	Amphibian calling survey
May 30, 2019	Partly cloudy, no precipitation, gentle breeze, temperature approximately 20°C.	Vegetation and ELC mapping, amphibian calling survey
May 31, 2019	Partly cloudy, no precipitation, light air movement, temperature approximately 14°C.	Breeding bird survey
June 19, 2019	Overcast skies, light air movement, no precipitation, temperature approximately 24°C.	Vegetation and ELC mapping, Amphibian calling survey
June 20, 2019	Overcast skies, light rain, slight breeze, approximately 18°C.	Second breeding bird survey
August 14, 2019	Partly cloudy, no precipitation, gentle breeze, temperature approximately 24°C.	Vegetation and ELC mapping survey

\* Sky cover defined as Clear (0-25%), Mostly Clear (25-50%), Mostly Cloudy (50-75%), and Cloudy (75-100%).

Precipitation defined as None, Trace, or Rain. Wind defined as Calm (0-2 km/h), Light Air (3-5 km/h), Slight Breeze (6-11 km/h), Gentle Breeze (12-19 km/h), or Moderate Breeze (20-10 km/h).

Site visits were conducted for the purposes of i) documenting the presence of dominant vascular plants, ii) completing breeding bird surveys, iii) investigating the presence of rare or endangered species or their habitats, iv) conducting amphibian calling surveys, and v) confirming the presence of Natural Heritage Features and general site characteristics. Lists of vegetation, birds, and incidental wildlife species observed by WSP during the site investigation are provided in **Appendix B**.

# 7 EXISTING CONDITIONS

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## 7.1 SPECIES AT RISK SCREENING

A SAR habitat assessment screening for the Site has been undertaken based on a list of potential SAR for the general area. The list was created based on MNRF background review, NHIC records on or in proximity to the Site, Ontario Breeding Bird Atlas and Ontario Reptile and Amphibian Atlas records, and/or the availability of potentially suitable habitat. The SAR Habitat Screening Table is provided in **Appendix C**.

A search of the MNRF NHIC database was conducted to determine the existence and approximate locations of recorded occurrences of species at risk within the general vicinity of the Site. Two (2) one square kilometre (1 km<sup>2</sup>) quadrats (17NJ1492 and 17NJ1592) surrounding the Site were searched. Bobolink (*Dolichonyx oryzivorus*) (THR) was recorded from these quadrats. In addition, one (1) S-Ranked (S1-S3) species that is not listed by either COSSARO or COSEWIC was recorded from these quadrats: American Hart's-tongue Fern (*Asplenium scolopendrium*) (S3).

In addition to a search of the NHIC database, the Ontario Breeding Bird Atlas (OBBA) (Bird Studies Canada et al., 2006) and ORAA (Ontario Nature, 2019) were consulted to determine if there were Endangered or Threatened species known to be present within the vicinity of the Site. The OBBA uses 100 km by 100 km blocks, further subdivided into 10 km by 10 km squares to compartmentalize geographical areas. The Site lies within the square identified as 17NJ19. Barn Swallow (*Hirundo rustica*) (THR), Bobolink (THR), Chimney Swift (*Chaetura pelagica*) (THR), Common Nighthawk (*Chordeiles minor*) (SC), Eastern Meadowlark (*Sturnella magna*) (THR), Eastern Wood-Pewee (*Contopus virens*) (SC) and Wood Thrush (*Hylocichla mustelina*) (SC) had element occurrences within the square surveyed. Of the avian SAR and SCC listed, four (4) had breeding evidence recorded, including: Bobolink, Eastern Meadowlark, Eastern Wood-pewee and Wood Thrush. Similarly, the ORAA also uses 10 km by 10 km squares. Snapping Turtle (*Chelydra serpentina*) (SC) and Midland Painted Turtle (*Chrysemys picta*) (SC) had recent records for the squares surrounding the Site. These SC species are not listed as SAR under the ESA, but are designated Special Concern by COSEWIC, and as such their habitats are considered Significant Wildlife Habitat under the Provincial Policy Statement.

Correspondence with the MNRF revealed that additional SAR should be considered as follows: Bank Swallow (*Riparia riparia*), Canada Warbler (*Cardellina canadensis*), Golden-winged Warbler (*Vermivora chrysoptera*), Grasshopper Sparrow (*Ammodramus saviarum*), Red-headed Woodpecker (*Melanerpes erythrocephalus*), Whip-poor-will (*Caprimulgus vociferus*), Redside Dace (*Clinostomus elongatus*), Hungerford's Crawling Water Beetle (*Brychius hungerfordi*), Monarch Butterfly (*Danaus plexippus*), American Badger (*Taxidea taxus*), Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*), Tri-colored Bat (*Perimyotis subflavus*), Eastern Small-footed Myotis (*Myotis leibii*), Rainbow Mussel (*Villosa iris*), Butternut (*Juglans cinerea*) and Eastern Ribbonsnake (*Thamnophis sauritus*) also have potential to be present on or surrounding the Site. Refer to **Appendix A**.

Additional discussion regarding SAR species confirmed on the Site, and / or SAR species identified as having moderate or high habitat potential is provided in Section 8.3.

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## 7.2 VEGETATION SURVEYS

A three-season survey was completed to characterize the vegetation communities present within the Site. Supplemental vegetation assessments were also completed during other surveys. Vegetation units were approximated using satellite imagery then field-checked to confirm the vegetation type. Vegetation communities on the Site have been mapped (**Figure 3**) using the Ecological Land Classification (ELC) for southern Ontario – first approximation (Lee et al., 1998). For vegetation communities where the first approximation ELC does not provide an adequate description, the pending 2008 second approximation description has been used. Vegetation community significance was evaluated using Vegetation Communities of Southern Ontario (Bakowsky 1996; NHIC website).



Plant species status was evaluated using the NHIC website for provincial rarity ranks (i.e. S-Ranks); the SAR in Ontario list (MECP updated periodically) for provincial status designations; and the SAR list (SARA website - updated periodically) for COSEWIC (Committee on the Status of Endangered Wildlife in Canada) and federal status designations.

Nomenclature generally follows Vascan (Dec. 2017) and NHIC (Dec. 16, 2018).

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### 7.2.1 VEGETATION AND FLORA OVERVIEW

The majority of the Site consisted of open fields that were being used for agriculture at the time of survey. In the northwest and northeast corners of the Site was a Sugar Maple (*Acer saccharum*)-dominated deciduous forest that extends northward past the boundaries of the Site. Wetlands were not identified, though a pond, which appears to be constructed based on aerial photos, is found approximately 78 m east of the east boundary. The Site is surrounded by forest to the north and northeast, and by agricultural and residential dwellings to the west, south and southeast.

In total, 95 vascular plant species from 45 families were recorded by WSP within the Site. Of the plants recorded, five (5) were only identified to genus due to lack of identifiable characteristics. Just over half are native species (55 native species [58%]), all of which are common and secure or apparently secure in Ontario (i.e., ranked S5, S4, or SNA).

No SAR plants, provincially or federally, were recorded within the Site.

No provincially significant vegetation communities were present within the Site (i.e., S-ranks of S1, S2 or S3 per Bakowsky 1996; NHIC website).

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### 7.2.2 VEGETATION COMMUNITIES

There were three (3) vegetation units identified on or adjacent to the Site. ELC polygons are identified on **Figure 3** and described in the text that follows. A species list is provided in **Appendix B**.

#### OPEN AGRICULTURE (OAG)

The Open Agriculture – Perennial Cover Crop (OAG) code was assigned to the agricultural field on the Site, which corresponds to all areas on the Site that are not treed. The field is currently leased to a tenant farmer who is actively managing the space as a hayfield. During the April through July site visits, Unit 1 was vegetated with common forbs and grasses that are typically found in hayfields. By the August 14, 2019 site visit, all vegetation had been cleared as this field had been harvested and plowed over.

The vegetation community was comprised mostly of grasses, with dominant species being Orchard Grass (*Dactylus glomerate*) and Smooth Brome (*Bromus inermis*). A variety of forbs were also identified, with some of the common species including Alfalfa (*Medicago sativa*), Red Clover (*Trifolium pratense*), Common Dandelion (*Taraxacum officinale*), Bird's-foot Trefoil (*Lotus corniculatus*) and Wild Carrot (*Daucus carota*). Other species recorded included Bladder Campion (*Silene vulgaris*), Field Hawkweed (*Hieracium caespitosum*), Ox-eye Daisy (*Chrysanthemum leucanthemum*) and Ribgrass (*Plantago lanceolata*).

#### DRY – FRESH SUGAR MAPLE DECIDUOUS FOREST (FOD5)

The Dry-Fresh Sugar Maple Deciduous Forest (FOD5) included all treed portions of the Site (northwest and northeast areas). In general, this unit was of moderate botanical quality. Some mature trees (>40 cm diameter at breast height [DBH]) were noted and the tree diversity was representative of a later successional forest. However, extensive browsing by deer has reduced the understorey and ground layer, while several invasive plant species were observed in parts of the forest.

Sugar Maple was the dominant tree species found in this community, providing approximately 80-90% of the tree cover. Black Cherry (*Prunus serotina*), White Ash (*Fraxinus americana*) and American Beech (*Fagus grandifolia*) were frequently noted, along with lesser numbers of American Elm (*Ulmus americana*), Ironwood (*Ostrya virginiana*) and Eastern White Cedar (*Thuja occidentalis*). The understorey was relatively sparse and included



Common Buckthorn (*Rhamnus cathartica*), Alternate-leaved Dogwood (*Cornus alternifolia*), Choke Cherry (*Prunus vulgaris*) and occasional Morrow's Honeysuckle (*Lonicera morrowii*) and Mountain-Ash (*Sorbus* sp.) along with young Sugar Maple, White Ash and American Beech. The ground layer included several invasive species in parts of the forest, including Goutweed (*Aegopodium podagraria*), Garlic Mustard (*Alliaria petiolata*), Lesser Periwinkle (*Vinca minor*) and Lily-of-the-Valley (*Convallaria majalis*). Native species present included Yellow Trout Lily (*Erythronium americanum*), Wild Sarsaparilla (*Aralia nudicaulis*), Jack-in-the-Pulpit (*Arisaema triphyllum*), White Trillium (*Trillium grandiflorum*), Prickly Gooseberry (*Ribes cynosbati*) and Downy Yellow Violet (*Viola pubescens*).

## DRY – FRESH DECIDUOUS SHRUB THICKET (CUT1)

The Dry-Fresh Deciduous Shrub Thicket (CUT1) community corresponds to the hedgerow along the eastern boundary of the Site, between the FOD5 community and the southeast corner of the Site. A variety of species were identified here, including many introduced and invasive species.

Mature trees were occasionally found within this hedgerow including Black Walnut (*Juglans nigra*), Norway Spruce (*Picea abies*), Manitoba Maple (*Acer negundo*), and White Ash, but most of the trees / shrubs along the hedgerow were less than 5 m in height. Commonly noted species included One-seeded Hawthorn (*Crataegus monogyna*), Common Buckthorn, Common Apple (*Malus pumila*), Tatarian Honeysuckle (*Lonicera tatarica*), European Barberry (*Berberis vulgaris*) and Nannyberry (*Viburnum lentago*). The ground layer included several species found in the adjacent agricultural field, such as Alfalfa, Bladder Campion, Wild Carrot and Red Clover, as well as a variety of other species such as Lesser Periwinkle, Riverbank Grape (*Vitis riparia*), Philadelphia Fleabane (*Erigeron philadelphicus*), Knapweed (*Centaurea* sp.) and Common Yarrow (*Achillea millefolium*).

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## 7.3 WILDLIFE SURVEYS

Wildlife resources were evaluated using a review of background material, combined with the following field inventories: amphibian calling surveys, breeding bird surveys, general wildlife surveys and SAR / SWH habitat assessments / screening. Incidental wildlife observations were also made during other non-wildlife surveys (e.g., during vegetation inventory and ELC work). Specific protocols are described in each section below followed by the results.

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### 7.3.1 BREEDING BIRD SURVEYS

Two (2) breeding bird surveys were undertaken by qualified, experienced staff, using protocols consistent with the OBBA. These were targeted early morning surveys within the southern Ontario bird breeding period (generally May 24 – July 10), and were conducted under appropriate weather conditions (i.e., low wind and no precipitation).

All habitats within and along the edge of the Site were thoroughly surveyed using walking transects, with frequent listening / observation stops at random locations. During field surveys, species, abundance and level of breeding evidence were recorded for all avifauna observed. Additional evidence of breeding activity was recorded during other field surveys, as observed. Level of breeding evidence was determined using the OBBA methodology and terminology (Cadman et.al. 2007; Bird Studies Canada 2001).

Avifaunal species status was evaluated using the NHIC website for provincial rarity ranks (i.e., S-Ranks) and Ontario Regulation 230/08: Species at Risk in Ontario (SARO) List (Government of Ontario, 2018) for provincial status designations; the Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (MNRF, 2015) for Area-Sensitive species; and the Species at Risk list (SARA website - updated periodically) for COSEWIC and federal status designations.

In total, 53 avifauna species were recorded during the breeding bird surveys and with supplemental observations made during additional field visits. Of these 53 species, breeding evidence ('Possible', 'Probable' or 'Confirmed' according to OBBA standards) was recorded for 48 species. Five (5) species were encountered with no breeding evidence: Common Raven (*Corvus corax*), Great Blue Heron (*Ardea herodias*), Ring-billed Gull (*Larus delawarensis*), Rock Pigeon (*Columba livia*) and Turkey Vulture (*Cathartes aura*). These species breed in the

general area, but suitable habitat was not identified within the vicinity of the Site. Refer to **Appendix B** for a full species list.

### 7.3.1.1 AVIFAUNAL SPECIES OF CONSERVATION CONCERN

Of the breeding bird species recorded, eight (8) are considered Species of Conservation Concern (SCC):

- Four (4) species are designated as SAR in Ontario (COSSARO) and / or Canada (COSEWIC). Observation locations for these species have been mapped on (**Figure 4**):
  - Bobolink (Threatened, COSSARO and Threatened, COSEWIC) - a singing male was observed along the east property boundary on May 31 and a pair was observed in the same location on June 20, 2019. A male was heard singing on territory for a minimum of 7 days and a pair was observed together; therefore, probable breeding evidence was assigned.
  - Eastern Meadowlark (Threatened, COSSARO and Threatened, COSEWIC) – a single bird was observed in the hayfield on May 30, May 31, and June 20, 2019; therefore, possible breeding evidence was assigned.
  - Eastern Wood-pewee (Special Concern, COSSARO and COSEWIC) – two singing males were present in the FOD5 community on the Site. Possible breeding evidence was recorded since individuals were observed within suitable habitat.
  - Wood Thrush (Special Concern, COSSARO; Threatened, COSEWIC) – a single bird was heard singing from the FOD5 community, north of the Site on May 31, 2019. Possible breeding evidence was recorded due to a male singing in suitable habitat.
- One (1) species is considered an Open Country Area-Sensitive species (MNR 2015<sup>2</sup>):
  - Savannah Sparrow – was present throughout the hayfield; therefore, confirmed breeding evidence was assigned.
- One (1) species is considered a Shrub / Early Successional Area-Sensitive species (MNR 2015<sup>2</sup>):
  - Brown Thrasher – a male was heard singing from the forest edge along the north boundary of the Site on May 31, but was not observed subsequently; therefore, possible breeding evidence was assigned.
- Two (2) species are considered Woodland Area-Sensitive species (MNR 2015<sup>2</sup>):
  - Ovenbird – two (2) singing males were present in the FOD5; suitable habitat was present throughout this unit; therefore, probable breeding evidence was assigned.
  - Red-breasted Nuthatch – an individual was observed in the FOD5 in the northeast part of the Site; therefore, possible breeding evidence was assigned.

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### 7.3.2 AMPHIBIAN SURVEYS

Amphibian Surveys were completed in accordance with the Marsh Monitoring Program (MMP) (Bird Studies Canada, 2008). To comply with the MMP, surveys must be conducted three (3) times during the breeding season, starting one-half hour after sunset and finishing before midnight. Levels of calling are recorded on a 4-point scale from 0 (none heard) to 3 (calls continuous and overlapping, individuals not distinguishable).

Three (3) stations (**Figure 4**) were employed to accurately cover the area of the Site, and monitoring was recorded from each station once during a survey. Surveys were conducted using a semi-circular sampling area. Weather and vegetation was recorded at each station, during each survey visit.

For each call heard, the approximate distance to each call was recorded as being greater than or less than 100 m from the survey location and call level codes were assigned as follows:

- Code 0: None were heard

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<sup>2</sup> **Area Sensitive** bird species require “a substantial area of suitable habitat for successful breeding and their populations decline when habitat becomes fragmented”. This includes birds of various habitats, such as grassland or forest birds. In the case of forest birds, the “minimum forest habitat for area sensitive species is at least 100 m from any edge habitat” (MNR 2000; p 43).

- Code 1: individual calls do not overlap and calling individuals can be discretely counted;
- Code 2: calls of individuals sometimes overlap, but numbers of individuals can still be estimated; or
- Code 3: overlap among calls seems continuous (full chorus), and a count estimate is impossible.

A cumulative total of four (4) species were observed on the Site and adjacent lands over the survey period, including Wood Frog (*Lithobates sylvaticus*), Spring Peeper (*Pseudacris crucifer*), American Toad (*Anaxyrus americanus*) and Gray Treefrog (*Hyla versicolor*). All calling amphibians observed were recorded at survey Station 3, which faces a pond feature approximately 78 m east of the property boundary. Spring Peeper was recorded during the April 18 and May 30 surveys with a call level code of 3. Gray Treefrog was recorded during the June 19 survey with a call level code of 3. No SAR amphibian species were recorded during the field investigations. Site visit results are provided in **Table 7-1**, below.

**Table 7-1 Amphibian Breeding Survey Results**

STATION ID	SURVEY LOCATION (UTM NAD 83; 17T)	SURVEY DATES	RESULTS
1	514956 m E 4892488 m N	April 18, 2019	None heard within 100 m
		May 30, 2019	None heard within 100 m
		June 19, 2019	None heard within 100 m
2	515137 m E 4892646 m N	April 18, 2019	None heard within 100 m
		May 30, 2019	None heard within 100 m
		June 19, 2019	None heard within 100 m
3	515324 m E 4892524 m N	April 18, 2019	Wood Frog: Call Code 2; 4 individuals Spring Peeper: Call Code 3; 10 individuals
		May 30, 2019	Spring Peeper: Call Code 3; 15 individuals American Toad: Call Code 1; 1 individual Gray Treefrog: Call Code 2; 3 individuals
		June 19, 2019	Gray Treefrog: Call Code 3; 8 individuals Green Frog: Call Code 1; 1 individual

### 7.3.3 BAT MATERNITY ROOST HABITAT ASSESSMENT

The SAR screening assessment (**Appendix C**) for this project identified the need to assess habitat for the four (4) SAR bat species currently listed as Endangered in Ontario:

- Eastern Small-footed Bat (*Myotis leibii*);
- Little Brown Bat (*Myotis lucifugus*);
- Northern Long-eared Bat (*Myotis septentrionalis*); and,
- Tri-colored Bat (*Perimyotis subflavus*).

These species and their habitats are protected under Subsections 9 (1) (species protection) and 10 (1) (habitat protection) of the Endangered Species Act (ESA) (Ontario, 2007). Until species-specific habitat regulations are developed, habitat for endangered and threatened species is protected according to the general definition of habitat in the ESA. Specifically, according to section 2 (1), the ESA protects “an area on which the species depends, directly or indirectly, to carry on its life processes, including processes such as reproduction, rearing, hibernation, migration or feeding”. Current guidance regarding surveys focuses on identification of candidate maternity roost habitat, though all SAR bat habitat (i.e., day roosting habitat, foraging habitat, hibernacula) are protected under the ESA.

In Ontario, two (2) roosting strategies are used by bats during the day. Some bats roost in small groups high up in the tree canopy, taking shelter within the foliage (OMNR, 2011). These roosts can be very difficult to find. A second strategy involves bats roosting in cavities found in dead or dying trees, under loose or peeling bark, or in cracks and crevices on rock faces. The best candidate cavity trees show early signs of decay, exhibit a large amount of peeling bark, have numerous cavities most often originating as knot holes, woodpecker cavities, cracks or scars, are a large DBH, and are located within the highest density areas of suitable cavity trees (OMNR, 2011). Dead trees with a decay class of 1-3 (Stabb, 1996) often provide ideal roosting habitat for bats.

Generally, the FOD5 community to the north of the Site is suitable for bats as it provides a variety of habitats, including potential maternity roost, day roost, and foraging habitats. Each of these species uses open areas including watercourses and wetlands as foraging grounds. In addition, the FOD5 community extends north of the site and contains a high number of mature Sugar Maple trees. Maples are thought to be a preferred tree species (second only to Oaks) for Tri-colored Bats who roost in leaf clusters remaining from the previous season (OMNRF, 2017b).

### 7.3.3.1 SURVEY METHODOLOGY

To evaluate the potential for SAR bat habitat with the potential to be impacted by the proposed development, a survey of the FOD5 community was completed on February 19, 2019 (during leaf-off) following recommendations outlined in the Survey Protocol for Species at Risk Bats within Treed Habitats (OMNRF, 2017b). As per the protocol, trees with a DBH of 10 cm or greater with cracks, crevices, hollows, cavities, and/or loose or natural exfoliating bark were documented as potential bat habitat trees. Ten (10) random plots were arranged across the Site. **Figure 5** depicts the survey area. Results from the cavity survey are discussed in Section 7.3.3.3 below.

To determine the cavity tree density, the following procedure was followed:

1. A minimum of 10 plots for sites less than 10 ha, with the addition of a plot per ha, up to a maximum of 35 ha is required. The wooded sections of the Site to the northwest and northeast have a cumulative area of less than 10 ha, so a total of 10 circular plots with a radius of 12.6 m (approximately 0.05 ha) were evenly spaced out across these two portions of the Site.
2. Total number of trees that contained at least one suitable cavity were counted within each plot.
3. The number of cavity trees per hectare was calculated. To be considered candidate maternity roost habitat ELC polygons must achieve a threshold density of 10 cavity trees per hectare.

### 7.3.3.2 TRI-COLORED BAT HABITAT ASSESSMENT

In addition to cavity trees, other types of treed habitat can provide suitable bat roosting habitat; in particular, Tri-colored Bat is known to roost in dead / dying leaf clusters, as well as live foliage in mature Oak or Maple trees. The Survey Protocol for Species at Risk Bats within Treed Habitats (OMNRF, 2017b) indicates the following features should be reviewed to assess potential Tri-colored Bat habitat: any Oak tree  $\geq 10\text{cm}$  DBH, any Maple tree  $\geq 10\text{cm}$  DBH if the tree includes dead/dying leaf clusters and any Maple tree  $\geq 25\text{cm}$  DBH. If a suitable tree is identified, similar information to that of cavity trees is collected including:

- UTM coordinates;
- Tree species;
- DBH;
- Pictures of the tree's attributes;
- Tree Status (live/dead);
- General notes about health, function or structure of the tree;
- Location of the snag within the immediate landscape vicinity;
- Proximity of preferred tree species (if any); and,
- Attributes of the identified habitat quality (type, size, location etc.).

While the protocol specifies that surveys for Tri-colored Bat habitat are to be completed during the leaf-on period in the season preceding acoustic monitoring, valuable information about the potential for this habitat can be obtained during the leaf-off period.

### 7.3.3.3 RESULTS

A total of 14 cavity trees greater than or equal to 10 cm DBH were identified across 10 plots within the FOD5 forest ecosite within the Site. Effective DBHs ranged from 19 to 55.5 cm. Detailed information on each cavity tree is presented in **Appendix D** and locations are shown in **Figure 5**. The individually mapped cavity trees consisted of:

- 6 Sugar Maple;
- 5 American Beech; and,
- 3 White Ash.

Each plot is approximately 0.05 ha in size; therefore, a total of approximately 0.5 ha was surveyed for the presence of cavity trees. Based on the 10 cm DBH threshold, this corresponds to a density of approximately 28 cavity trees / ha. Additionally, when separately considering trees greater than or equal to 25 cm DBH as per guidelines for SWH bat maternity roosting colonies (MNR, 2015), a total of 10 trees were identified, resulting in a cavity tree density of 20 cavity trees / ha. These results suggest that the FOD5 community on the Site is candidate SWH and has potential to support SAR bat species. It is expected that the entire FOD5 community northeast of the surveyed area provides similar roost habitat. The MECP should be contacted to discuss the proposed woodland removals and requirements for mitigation and/or compensation under the ESA.

**Table 7-2 Candidate Maternity Roost Survey Plots**

PLOT ID	PLOT LOCATION (UTM NAD 83)	TOTAL NUMBER OF CANDIDATE MATERNITY ROOST TREES (≥10 CM DBH)	TOTAL NUMBER OF CANDIDATE MATERNITY ROOST TREES (≥25 CM DBH)
B1	17 514944 4892554	0	0
B2	17 515015 4892555	3	2
B3	17 514955 4892609	2	1
B4	17 514979 4892538	0	0
B5	17 514990 4892580	0	0
B6	17 515063 4892547	2	2
B7	17 515282 4892564	2	2
B8	17 515263 4892669	1	1
B9	17 515296 4892650	0	0
B10	17 515038 4892601	4	2
<b>Totals</b>		<b>14</b>	<b>10</b>

There was one (1) American Beech tree with a DBH of 25 cm identified with potentially suitable leaf clusters within the area surveyed. Further, six (6) Sugar Maples with effective DBHs ranging from 23 to 86 cm offered potentially suitable habitat for Tri-colored Bat.

### 7.3.4 INCIDENTAL WILDLIFE OBSERVATIONS

In addition to the targeted surveys described in the preceding sections, a general wildlife survey and habitat assessment was undertaken during all field surveys. This involved recording all direct observations and signs of birds, amphibians, mammals, reptiles and insects, including: browse, track / trails, animal scat, bird nesting activity, tree cavities, burrows and vocalizations. Additionally, these surveys were used to assess SAR habitat and assess the potential presence of SWH features within the Site.

A summary of the results for wildlife are discussed below. Detailed listings of observations are included in **Appendix B**.

#### 7.3.4.1 MAMMALS

Evidence or observations of three (3) species of mammals were recorded from the Site: Eastern Chipmunk (*Tamias striatus*), Red Squirrel (*Tamiasciurus hudsonicus*) and White-tailed Deer (*Odocoileus virginianus*).

Other common mammals are known to occur in the general landscape and are likely to use or pass through the Site, including: Coyote (*Canis latrans*), Eastern Cottontail (*Sylvilagus floridanus*), Eastern Gray Squirrel (*Sciurus carolinensis*), Groundhog (*Marmota monax*), Meadow Vole (*Microtus pennsylvanicus*), Porcupine (*Erithizon dorsatum*), Raccoon (*Procyon lotor*), Red Fox (*Vulpes vulpes*), Striped Skunk (*Mephitis mephitis*) and Virginia Opossum (*Didelphis virginiana*).

#### 7.3.4.2 REPTILES AND AMPHIBIANS

Evidence of one (1) species of reptile and five (5) species of amphibians was recorded on the Site: Eastern Gartersnake (*Thamnophis sirtalis*), American Toad (*Anaxyrus americanus*), Gray Treefrog (*Hyla versicolor*), Green Frog (*Lithobates clamitans*), Spring Peeper (*Pseudacris crucifer*) and Wood Frog (*Lithobates sylvaticus*).

Given the characteristics of the Site, there is potential for several other reptile and amphibian species on or adjacent to the Site, including Dekay's Brownsnake (*Storeria dekayi*), Red-bellied Snake (*Storeria occipitomaculata*), Northern Watersnake (*Nerodia sipedon*), Midland Painted Turtle (*Chrysemys picta*), Snapping Turtle, Northern Leopard Frog (*Lithobates pipiens*), American Bullfrog (*Lithobates catesbeianus*), Red-backed Salamander (*Plethodon cinereus*) and Eastern Newt (*Notophthalmus viridescens*).

#### 7.3.4.3 BUTTERFLIES, DRAGONFLIES AND DAMSELFLIES

Incidental observations of butterflies (superfamily Papilionoidea) and dragonflies / damselflies (order Odonata) were recorded during the site visits. Observed Odonata species included White-faced Meadowhawk (*Sympetrum obtrusum*), while observed Papilionoidea species observed included Black Swallowtail (*Papilio polyxenes*), Cabbage White (*Pieris rapae*), Common Ringlet (*Coenonympha tullia*) and Lucia Azure (*Celastrina lucia*). There were no SAR or SCC observed.

## 8 NATURAL HERITAGE FEATURES AND HYDROLOGIC FEATURES

The following sections summarize the findings of the background review and site investigation as they pertain to Natural Heritage Features and Hydrologic Features described within the Provincial Policy Statement (OMMAH, 2014), and municipal and county official plans (County of Grey, 2019; Municipality of West Grey, 2012).

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### 8.1 FISH HABITAT

The Fisheries Act, c. F-14 (Government of Canada, 1985) provides for the conservation and protection of fish habitat essential to sustaining freshwater and marine fish species. There are two (2) main provisions outlined by the Act. The first provision directs actions the management of threats to fish and fish habitat, by managing threats to fish that are part of or support commercial, recreational or Aboriginal fisheries with the goal of ensuring their productivity and ongoing sustainability. The second provision relates to pollution prevention, by prohibiting the “deposit of deleterious substances into waters frequented by fish, unless authorized by regulations under the Fisheries Act or other federal legislation”.

Fish habitat, as defined by the Fisheries Act, c. F-14, includes the spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes. The



Act also includes a broader definition of fish as shellfish, crustaceans, and marine mammals at all stages of their life cycles.

The Site occurs within the Saugeen Valley watershed. Through background literature review, feature maps and air photo interpretation, no natural watercourses or features are identifiable within the Site. Given that the Site is not permanently flooded and is not connected to a water feature on the surface, it is unlikely that the Site is able to support fish or fish habitat. Upon review of existing mapping / air photos, a pond was noted approximately 78 m to the east of the property boundary, and an unnamed watercourse that connects with the Saugeen River was noted approximately 64 m east of the Site (**Figure 2**). However, since these features are located offsite and are in excess of a typical setback distance of 30 m, a detailed aquatic investigation was not completed. It is expected that impacts to these features can be avoided through implementation of standard mitigation measures (e.g. erosion and sedimentation control plan).

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## 8.2 SIGNIFICANT AREAS OF NATURAL AND SCIENTIFIC INTEREST

Significant Areas of Natural and Scientific Interest (ANSI) are defined as areas of land and water containing natural landscapes or features that have been identified as having life science or earth science values related to protection, scientific study or education.

The Natural Heritage Areas Mapping (MNRF, 2019), County of Grey Official Plan (2019), and Municipality of West Grey Official Plan (2012) were searched for the presence of ANSIs on or within 120 m of the Site. There were no recorded ANSIs on or adjacent to the Site.

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## 8.3 SIGNIFICANT HABITAT OF ENDANGERED OR THREATENED SPECIES

The PPS (OMMAH, 2014) defines the significant habitat of endangered or threatened species as the habitat, as approved by the MNRF, that is necessary for the maintenance, survival and/or the recovery of a naturally occurring or reintroduced population of endangered or threatened species, and where those areas of occurrences are occupied or habitually occupied by the species during all or any part(s) of their life cycle. Endangered and Threatened species listed on the Species at Risk in Ontario List (Ontario, 2018) receive species and habitat protection under the ESA.

The MNRF was previously mandated to ensure accurate database information for the identification, listing and conduct of ongoing assessments for significant endangered species and their related habitats. As of April 1, 2019, administration of the Endangered Species Act, 2007 (Ontario, 2007) was shifted to the Ministry of Conservation and Parks (MECP). Development and site alteration is not permitted within the significant habitat of endangered or threatened species under Section 7.10 of the Grey County Official Plan (2019) and Section E1.2.2 of the Municipality of West Grey Official Plan (2012).

The species discussed in the SAR screening (Section 7.1) and their preferred habitats were given special consideration during the site investigation. The SAR Screening Table in **Appendix C** outlines the species of note, their preferred habitat, field observation notes for the species, the presence of potential habitat on the Site, and the likelihood and magnitude of potential impacts to the species and/or their habitat. A total of 11 endangered or threatened species, including Bank Swallow, Barn Swallow, Bobolink, Chimney Swift, Eastern Meadowlark, Eastern Whip-poor-will, Northern Myotis, Little Brown Myotis, Eastern Small-footed Myotis, Tri-colored Bat and Butternut were determined to have moderate to high potential to occur on and/or adjacent to the Site. Eastern Meadowlark and Bobolink were the only threatened or endangered species observed during the site investigation.

Bobolink were observed both individually and as a pair on multiple field visits along the east property boundary and Eastern Meadowlark was observed on multiple survey dates central to the hayfield habitat. Since the hayfield provides suitable breeding habitat for grassland birds, which were both observed during breeding bird surveys with

possible and probable breeding evidence respectively, there is potential for these species and/or their habitat to be negatively impacted by development. Similar agricultural/grassland habitat is present surrounding the Site and likely provides additional habitat that is suitable for these species. The general mitigation measures outlined within Section 9.5 should be implemented to avoid potential impacts to these SAR during construction.

Bank Swallow, Barn Swallow, Chimney Swift and Eastern Whip-poor-will were not observed on-Site; however, they likely breed in the general area. Suitable nesting habitat for these species was not observed on the Site; however, potentially suitable nesting structures may occur on or within 120 m of the Site. It is likely that they nest in the general vicinity and may frequent the Site and surrounding lands while foraging. As significant habitat (i.e., nesting habitat) for these species was not observed on the Site, impacts are not anticipated. As such, these species are unlikely to be impacted by development of the Site.

The woodland within the northwest and northeast corners of the Site contains snag trees, including species (e.g., Sugar Maple) that are preferred by Eastern Small-footed Myotis, Little Brown Myotis, and Northern Myotis. Mature Sugar Maples, as noted within the FOD5 community, may also provide suitable habitat for Tri-colored Bat. Based on the presence of these cavity trees and the proximity of suitable foraging habitat (i.e., wetlands, water bodies, and open fields), the Site is thought to provide moderate habitat potential for these species. However, the woodland present on the Site is not unique in the landscape. Wooded areas on the Site are part of a larger woodland approximately 180 ha in size, which appears to provide similar forest habitats and habitat potential for these species.

Conditions in the deciduous forest FOD5 provide moderate habitat potential for Butternut; however, the species was not observed during the field investigation. Impacts to this species are not anticipated.

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## 8.4 SIGNIFICANT WETLANDS

Wetlands are defined in the PPS (OMMAH, 2014) as lands that are seasonally or permanently covered by shallow water, as well as lands where the water table is close to or at the surface. There are four major wetland types, which are classified as swamps, marshes, bogs, and fens. A significant wetland is defined as an area identified as provincially significant by the Ontario Ministry of Natural Resources using evaluation procedures established by the province, as amended from time to time (OMMAH, 2014). Accordingly, it is the responsibility of the MNRF to both identify and classify wetlands as significant in Ontario.

The MNRF Natural Heritage Areas Mapping (2019), SVCA mapping (2015), County of Grey (2019) and Town of West Grey (2012) Official Plans were reviewed for the presence of wetlands on or within 120 m of the Site. There were no provincially significant wetlands identified; however, an unevaluated wetland was mapped within the northwest corner of the Site extending approximately 160 m north and 80 m west of the Site according to the MNRF's NHA Mapping. Other mapping sources do not show a wetland within the northwest corner of the Site. Furthermore, results of the field investigation and ELC vegetation community classification confirmed that the wooded area in the northwest corner is comprised of an upland deciduous woodland with no evidence of wetland habitat and/or species observed. Additionally, a pond, which appears to be constructed based on aerial photos, is found approximately 78 m east of the eastern property boundary.

A second unevaluated wetland was mapped approximately 60 m east of the Site. This wetland appears in the MNRF's NHIC interactive mapping tool (2019). Field verification of this wetland was not completed due to its location beyond the boundaries of the Site.

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## 8.5 SIGNIFICANT WILDLIFE HABITAT

Wildlife habitat is defined as areas where plants, animals, and other organisms live and find adequate amounts of food, water, shelter, and space needed to sustain their populations. Specific wildlife habitats of concern may include areas where species concentrate at a vulnerable point in their annual life cycle and areas that are important to migratory or non-migratory species (OMMAH, 2014).

Wildlife habitat is referred to as significant if it is ecologically important in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographic area or Natural



Heritage System (OMMAH, 2014). Development and site alteration within significant wildlife habitat is not permitted under the PPS (OMMAH, 2014), County of Grey Official Plan (2019), and the Town of West Grey's Official Plan (2012).

Guidelines and criteria for the identification of significant wildlife are detailed in the Significant Wildlife Habitat Technical Guide (MNRF, 2000), Significant Wildlife Habitat Ecoregion 6E Criterion Schedule (MNRF, 2015), and the Natural Heritage Reference Manual (MNRF, 2010). Significant wildlife habitat is described under four main categories:

- Seasonal concentrations of animals;
- Rare vegetation communities or specialized habitats for wildlife;
- Wildlife movement corridors; and,
- Habitats of species of conservation concern.

Available mapping of the Site indicated that Deer Wintering Areas (Stratum II) has been documented for the wider area (**Figure 2**). This habitat occurs approximately 290 m northeast of the Site, and will not be impacted by the proposed works.

The presence of candidate and confirmed SWH on and adjacent to the Site was determined based on the SWH Criteria Schedule for Ecoregion 6E (MNRF, 2015). Each SWH criterion in the Ecoregion 6E guidelines was evaluated based on the description of Candidate SWH using the results of the background information and field investigations.

Key results of the SWH evaluation are as follows:

- Four (4) Candidate SWH types were identified:
  - Raptor Wintering Areas;
  - Bat Maternity Colonies;
  - Turtle Wintering Areas; and,
  - Habitat for Special Concern and Rare Wildlife Species (Canada Warbler, Common Nighthawk, Golden-winged Warbler, Grasshopper Sparrow, Red-headed Woodpecker, Monarch Butterfly, Snapping Turtle and Midland Painted Turtle).
- Two (2) Confirmed SWH types were identified:
  - Habitat for Special Concern and Rare Wildlife Species (Eastern Wood-Pewee and Wood Thrush); and,
  - Amphibian Breeding Habitat (Woodland).

Detailed assessments of each SWH habitat / criterion are provided below. An assessment of the potential for SC is provided in the SAR Screening Table in **Appendix C**.

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### 8.5.1 SEASONAL CONCENTRATIONS OF ANIMALS

Areas of seasonal concentrations of animals are defined as “areas where animals occur in relatively high densities at specific periods in their life cycle and/or particular seasons.” At these times, species are vulnerable to ecological interferences or weather impacts. Areas of seasonal concentration are typically small in comparison to the larger habitat areas used by species at other times of the year. Examples include migrant stopover areas for birds, winter deer yards, bird breeding colonies, amphibian concentration areas, and hibernacula for snakes or bats. The identification of habitats associated with seasonal concentrations of species is typically based on known occurrences (MNRF, 2000).

An assessment was carried out to determine the potential for wildlife concentration areas on the Site. Resources and protocols outlined in the Significant Wildlife Habitat Technical Guide (MNRF, 2000) and the Significant Wildlife Criteria Schedule for Ecoregion 6E (MNRF, 2015) were utilized to evaluate the potential for species concentration area occurrences. Seasonal concentration areas with the potential to be on or within 120 m of the Site are examined in **Table 8-1**, below.

**Table 8-1 Seasonal Concentration Areas In or Within 120 m of the Site**

<b>HABITAT TYPE</b>	<b>CANDIDATE SWH CRITERIA AND SITE INVESTIGATION RESULTS</b>
Waterfowl Stopover and Staging Areas (Terrestrial)	Habitat is not present. The agricultural field on the Site is contiguous with other larger agricultural fields; however, there was no evidence of sheet water during the April and May field visits. Furthermore, large congregations of the listed species were not observed during these visits.
Waterfowl Stopover and Staging Areas (Aquatic)	Habitat is not present. The Site and adjacent lands do not contain wetlands or waterbodies of sufficient size to support large aggregations of 100 or more of the listed species.
Shorebird Migratory Stopover Area	Habitat is not present. Muddy, unvegetated shorelines of lakes, river or wetlands are not present on or within 120 m of the Site.
Raptor Wintering Areas	<b>Candidate habitat is present.</b> The fields and woodlands on the Site are part of larger features that when combined would meet the area threshold (>20 ha) for this habitat. Fields that are idle/fallow or lightly grazed are thought to be more significant than those that are actively farmed. The field on the Site is actively farmed, and is unlikely to provide significant habitat for wintering raptors, if present. Raptors were not observed on or adjacent to the Site during the February 19, 2019 field survey.
Bat Hibernacula	Habitat is not present. No caves, mine shafts, underground foundations or karsts were found on or within 120 m of the Site.
Bat Maternity Colonies	<b>Candidate habitat is present.</b> Suitable forest types with preferred roost tree species and suitable size were present within the Site. A snag density survey was completed (Section 7.3.3). Areas surveyed had a snag density of approximately 20 cavity trees / ha, when trees equal to or greater than 25 cm DBH were considered.
Turtle Wintering Areas	<b>Candidate habitat is present.</b> No suitable water features were identified within the Site. However, the pond approximately 78 m east of the Site may provide suitable habitat, though surveys of this feature were not completed. Impacts are not anticipated given its location off the Site.
Reptile Hibernaculum	Habitat is not present. Areas of bedrock and rock fissures most commonly associated with large snake hibernacula, and wooded areas with rock outcrop and exposed bedrock preferred by Five-lined Skink were not identified on or within 120 m of the Site. The Site is unlikely to represent a significant seasonal concentration area.
Colonially-nesting Bird Breeding Habitat (Bank/Cliff)	Habitat is not present. Areas with exposed soil banks and sandy hills do not occur within the Site. This habitat is not present on the Site.
Colonially-nesting Bird Breeding Habitat (Tree/Shrub)	Habitat is not present. Nests within live or dead trees, shrubs or emergent vegetation that would signify the area is used by colonial tree/shrub-nesting birds were not observed within wetland areas in the Site.

HABITAT TYPE	CANDIDATE SWH CRITERIA AND SITE INVESTIGATION RESULTS
Colonially-nesting Bird Breeding Habitat (Ground)	Habitat is not present. The Site does not contain areas with rocky islands or peninsulas that are suitable for colonial ground-nesting birds such as gulls and terns.
Migratory Butterfly Stopover Areas	Habitat is not present. The Site is not within 5 km of Lake Ontario.
Landbird Migratory Stopover Areas	Habitat is not present. The Site is not within 5 km of Lake Ontario.
Deer Yarding Areas	MNRF determines this habitat. No records of Deer Yarding Areas were identified by the MNRF during the information request.
Deer Winter Congregation Areas	MNRF determines this habitat. The woodland within the Site is generally contiguous with a larger wooded area approximately 180 ha in size north of the property. The MNRF identified significant deer winter congregation areas (Stratum II) approximately 290 m northeast of the property boundary; however, none were identified within 120 m of the Site limits.

Candidate Significant Wildlife Habitat, including raptor wintering area, turtle wintering area and bat maternity colonies may occur on the Site or within 120 m of the Site. Although the offsite pond may provide turtle wintering habitat, impacts are not anticipated given its location off the Site; therefore, this habitat will not be discussed further in the report.

In general, vegetation on the Site was contiguous with the surrounding area and was not unique to the Site. If site development were to occur, it is unlikely to have direct or indirect negative impacts on these habitats due to the proximity of the Site to the habitats and intervening landscape.

While the Site does have some potential to support these community types, the relatively small footprint of development on the Site, it is unlikely that the impacts would impede the potential of the woodlands to the north. Mitigation measures outlined in Section 9.3 are designed to further minimize the potential for impact.

## 8.5.2 RARE VEGETATION COMMUNITIES/ SPECIALIZED HABITATS FOR WILDLIFE

Rare or specialized habitats include rare vegetation communities or concentrations of rare plant species. In Ecoregion 6E rare vegetation communities include cliff and talus slopes, alvars, sand barrens, savannahs, tallgrass prairies and old growth forests. These specialized habitats may also support rare animal species (MNRF, 2000). None of the vegetation communities identified on the Site are designated as rare or threatened in this region.

Rare or specialized habitats include rare vegetation communities or concentrations of rare plant species. These specialized areas may also support rare animal species. The Site lacked significant old growth forest features which, if present, might provide specialized habitats and food sources for other species dependent on these features. An assessment of the presence/absence of rare vegetation communities and specialized wildlife habitat for this ecoregion is provided in **Tables 8-2** and **8-3**, below.

**Table 8-2 Rare Vegetation Communities In or Within 120 m of the Site**

HABITAT TYPE	CANDIDATE SWH CRITERIA AND SITE INVESTIGATION RESULTS
Cliffs and Talus Slopes	Habitat is not present.
Sand Barren	Habitat is not present.
Alvar	Habitat is not present. Calcareous bedrock is not present in this area. Furthermore, characteristic alvar plant species were not observed on or within 120 m of the Site.
Old Growth Forest	Habitat is not present. The Dry to Fresh Sugar Maple Deciduous Forest (FOD5) to the east of the Site was largely comprised of trees 25 to > 40 cm in DBH, which based on species, is likely to be approximately 50 to 100 years old. Old Growth Forests are those that are dominated by trees > 140 years old.
Tallgrass Prairie	Habitat is not present. Tallgrass Prairie and associated plant species were not identified on or within 120 m of the Site.
Savannah	Habitat is not present. Savannah vegetation communities were not observed on or within 120 m of the Site.
Other Rare Vegetation Communities	Habitat is not present. Rare vegetation communities are those that are identified as provincially rare with S1, S2 and S3 ranks. There were no provincially rare communities identified within agency consultation, background review or the field investigation.

None of the above-noted rare vegetation communities were observed on or within 120 m of the Site.

**Table 8-3 Specialized Wildlife Habitats Within 120 m of the Site**

HABITAT TYPE	CANDIDATE SWH CRITERIA AND SITE INVESTIGATION RESULTS
Waterfowl Nesting Area	Habitat is not present. Wetlands comprised of meadow marsh and thicket swamp ecotypes over 0.5 ha in size are not present within or adjacent to the Site.
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Habitat is not present. The Site is not adjacent to a lake, nor does it contain candidate ecotypes to support the species.
Woodland Raptor Nesting Habitat	Habitat is not present. The woodland on Site does not contribute to interior habitat that would support raptor species. Stick nests were not observed during field investigations. Portions of the woodland to the north of the Site may provide suitable habitat.
Turtle Nesting Areas	Habitat is not present. Agricultural fields may qualify as potential turtle nesting areas; however, no turtle species were observed during field investigations. Turtles are unlikely to use the Site specifically as it seasonally dries up and does not have sand or gravel substrates for nesting.
Seep / Spring	Habitat is not present. No standing water was observed on Site.

**HABITAT TYPE****CANDIDATE SWH CRITERIA AND SITE INVESTIGATION RESULTS**

Amphibian Breeding Habitat (Woodland)	<b>Confirmed habitat is present.</b> The pond approximately 78 m east of the Site and a 230 m radius qualifies as candidate SWH. Spring Peeper, Wood Frog, Gray Treefrog, American Toad and Green Frog were observed during amphibian surveys. Spring Peeper and Gray Treefrog were recorded with a Call Level Code 3. Within 30 m of the pond's edge, it is recommended that an undeveloped forested habitat is maintained around the habitat, including both canopy and understory; that barriers to amphibian dispersal be avoided; that pool hydrology and water quality be maintained; and that this area be pesticide free. The critical terrestrial habitat was defined as that area within 30 to 228 m. Some of the habitat area along the woodland edge will be impacted; however, much of the woodland remains. Therefore, the pond is unlikely to be impacted by the proposed development.
Amphibian Breeding Habitat (Wetlands)	Habitat is not present. Candidate habitat is not present since large wetland habitats were not identified. The pond east of the Site is treated under Amphibian Breeding Habitat (Woodland), above.
Woodland Area-Sensitive Bird Breeding Habitat	Habitat is not present. The woodland within the Site and adjacent to the Site does not contain interior forest habitat. Two of the listed species were observed in forested areas within the Site, including Ovenbird and Red-breasted Nuthatch. These were assigned breeding evidence codes of 'Probable' and 'Possible', respectively. Limiting tree removal within the Site and locating the development at the edge of the woodland habitat will help to minimize habitat fragmentation. Mitigation measures such as the implementation of timing windows will help to ensure that direct impacts to the species do not occur.

Four (4) candidate specialized wildlife habitats were identified in or within 120 m of the Site: raptor wintering areas, bat maternity colonies, turtle wintering areas and amphibian breeding habitat (woodland). Candidate habitat for raptor wintering areas was identified based on the area threshold (>20 ha) for this habitat. Trees within the ELC FOD5 woodland to the northwest and northeast corners of the Site were investigated for their potential to provide maternity roosting habitat. A suitable number of snag trees were identified to meet the threshold for candidate SWH. To be confirmed as SWH for bat maternity colonies surveys need to confirm use by more than 10 Big Brown Bats or 5 adult female Silver-haired Bats. Turtle wintering habitat was not identified during Site visits, but species may use the pond east of the Site for wintering. Amphibian breeding habitat (woodland) was confirmed within 120 m of the Site. Two of the listed species were observed at a calling level code of 3 during amphibian call surveys; however, species were recorded to be calling from a pond 78 m east of the Site area. Woodland area-sensitive bird breeding habitat was not associated with the large woodland overlapping with the northwest and northeast corners of the Site and wider area to the north since the woodland does not contribute to interior forest habitat to support the species.

None of the other above-noted specialized wildlife habitats were observed on or within 120 m of the Study Area.

### 8.5.3 HABITATS OF SPECIES OF CONSERVATION CONCERN

Based on the results of the background review, field investigation, and screening for species of conservation concern it was determined that habitats on or within 120 m of the Site are considered to have moderate to high potential for 10 species, including Canada Warbler, Common Nighthawk, Eastern Wood-Pewee, Golden-winged Warbler, Grasshopper Sparrow, Red-headed Woodpecker, Wood Thrush, Monarch Butterfly, Snapping Turtle and Midland Painted Turtle. As Special Concern species on the SARO List these species do not receive habitat protection under the *Endangered Species Act* (Ontario, 2007).

Two (2) SC avian species were observed during the site investigation. Eastern Wood-Pewees were identified on and adjacent to the Site during site visits, one (1) approximately 30 m north of the Site and singing males were observed in the northwest forested section of the property (**Figure 4**). In general, Eastern Wood-Pewees were found in the forest on and adjacent to the Site. Wood Thrush was also identified; one (1) male was observed in the adjacent

forested habitat north of the Site. Canada Warbler, Common Nighthawk, Golden-winged Warbler, Grasshopper Sparrow, Red-headed Woodpecker were not observed on the Site; however, suitable habitat for these species exists throughout the forested ecotype north of the Site.

Direct habitat loss will occur as a result of vegetation removal within the development area. Indirect impacts to remaining woodland habitat may include changes to drainage, water quality and quantity entering surface water features, changes in the water table, and creation of edge effects. Avian species observed during the field investigation are expected to find similar suitable habitat in the surrounding area, as most affected species are associated with woodlands and swamps; features which are plentiful within the general area. The following mitigation measures are proposed to reduce impacts to the avian Special Concern species with the potential to be on or adjacent to the Site:

To avoid disturbance to local wildlife and to comply with the Migratory Birds Convention Act (MBCA; Government of Canada, 1994), woodland removals should be limited as much as possible and tree and vegetation clearing (including grubbing) shall be avoided during the bird nesting season (approximately April 1 to August 31).

Monarch Butterfly is a common species in southern Ontario and likely migrates and / or breeds on or adjacent to the Site. This species was not observed during site investigations; however, suitable habitat was present on the Site. This species' substrate vegetation required for breeding, Common Milkweed (*Asclepias syriaca*), was not identified on the Site.

Snapping Turtle and Midland Painted Turtle were not recorded during site investigations, but due to the presence of a pond on adjacent lands to the east, they are thought to have moderate potential to occur on or within the vicinity of the Site. In Ontario, adult mortality (particularly road mortality), persecution, and nest depredation are the main threats to turtle populations (Ontario, 2019). For turtles dependent on aquatic and wetland habitats, changes to the quantity and quality of water inputs, and hydroperiod for wetlands, have the greatest potential to impact habitat for these species. To protect these species, the following measures are recommended:

- Naturally occurring vegetation within 30 m of the wetlands within the eastern portion of the Site is to be maintained.
- Maintain existing drainage patterns, including surface and groundwater inputs to wetlands within the eastern portion of the Site.
- Exclusion fencing is to be installed around soil and gravel stockpiles, to ensure these areas are not used by turtles for nesting.

## ANIMAL MOVEMENT CORRIDORS

Animal Movement Corridors are defined as elongated, naturally vegetated parts of the landscape used by animals to move from one habitat to another. They exist at different scales and frequently link or border natural areas. Animal Movement Corridors encompass a wide variety of landscape features including riparian zones and shorelines, wetland buffers, stream and river valleys, woodlands, and anthropogenic features such as hydro and pipeline corridors, abandoned road and rail allowances, and fencerows and windbreaks. The Natural Heritage Component of the Provincial Policy Statement states that the diversity and connectivity of natural features should be maintained, restored or improved, where possible (OMMAH, 2014). In southern Ontario, Animal Movement Corridors often consist of vegetated areas that run through more developed areas. Other examples include undeveloped lake shorelines, forested river valleys, and riparian vegetation.

To be considered SWH, animal movement corridors should be at least 200 meters wide, and if following riparian areas, should have at least 15 meters of vegetation on both sides of the waterway (MNRF, 2015).

The Site is part of the larger natural heritage feature (woodland) that likely provides habitat for animal movement corridors. Animal Movement Corridors are typically only identified as SWH when a Confirmed or Candidate related SWH has been identified by a local planning authority or the MNRF. Within Ecoregion 6E, Amphibian Movement Corridors or Deer Movement Corridors are identified when Amphibian Breeding Habitat Wetland or Deer Wintering Areas are confirmed as SWH, respectively. Amphibian Breeding Habitat (wetlands) was not identified because potential breeding areas are located within 120 m of a woodland. Available mapping of the Site indicated that Deer Wintering Areas (Stratum II) has been documented for the wider area approximately 290 m northeast of the Site. The woodland to the northeast of the Site is approximately 180 ha in size and has been identified as



Candidate SWH in Section 8.6 of this report. To be considered significant, MNRF must confirm that the woodland within the Site is a Deer Wintering Area.

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## 8.6 SIGNIFICANT WOODLANDS

Woodlands are defined as “treed areas that provide environmental and economic benefits to both the private landowner and the general public, such as erosion prevention, hydrological and nutrient cycling, provision of clean air and the long-term storage of carbon, provision of wildlife habitat, outdoor recreational opportunities, and the sustainable harvest of a wide range of woodland products. Woodlands include treed areas, woodlots or forested areas and vary in their level of significance at the local, regional and provincial levels” (OMMAH, 2014).

Grey County Official Plan designates Significant Woodlands as, “in order to be considered *significant*, a woodland shall be either greater than or equal to forty (40) ha in size outside of settlement areas, or greater than or equal to four (4) ha in size within settlement area boundaries. If a woodland fails to meet the size criteria outside a settlement area, a woodland can also be significant if it meets any two of the following three criteria:

- 1) Proximity to other woodlands i.e. if a woodland was within 30 m of another significant woodland; or
- 2) Overlap with the boundaries of a Provincially Significant Wetland and Significant Coastal Wetlands, Core Area, Significant Valleylands, or a Significant ANSI; or,
- 3) Interior habitat of greater than or equal to eight (8) ha, with a 100 m interior buffer on all sides.”

Therefore, the woodlands are assessed based on size and location; Section 7.4 of the County Official Plan (2019) states that, “no development or site alteration may occur within Significant Woodlands or their adjacent lands unless it has been demonstrated through an EIS that there will be no negative impacts on the natural features or their ecological functions”. Woodland fragmentation within the County is generally discouraged. Furthermore, the Municipality of Grey Official Plan (2012) definition, as laid out in Section E.1.2.6. “in order to be considered significant within a settlement area, the woodland must be greater than or equal to four (4) hectares in size.”

The Municipality of Grey Official Plan (2012) includes a minimum size threshold of 4 ha in their definition of woodlands; whereas the PPS goes on to say that either the Forestry Act definition or ELC (Lee et al., 1998) definition for “forest” may be used to delineate woodlands. Given that no in-depth analysis of the woodland on Site was conducted, tree densities and correlating size classes are not known, therefore the definition that is provided by the Municipality will define the woodlands on Site.

The treed areas within the northwest and northeast corners on the Site are part of a larger Significant Woodland polygon identified on **Appendix A** of the Municipality’s Official Plan (2012), which depicts woodlands within the area. This larger polygon has an area of approximately 180 ha. Also, **Appendix B** of the County’s Official Plan designates areas of Significant Woodlands, which continue to the north-eastern extent of the policy area, and outside the Site. The area separating the designated Significant Woodlands from the wooded areas surrounding the Site are numerous agricultural lands, residential areas and regional roads as well as the Saugeen River fragmenting the woodlands making them independent of one another. Refer to the Municipality of West Grey’s Official Plan (2012) **Appendix A** and Grey County’s Official Plan (2019) **Appendix B** for policy mapping.

The treed areas within the northwest and northeast corners on the Site do not provide significant interior forest habitat and are separated from the Saugeen River by Durham Road East and residential developments, which act as substantial barriers to wildlife movement, making it unlikely to be widely used as a wildlife corridor to access the River. The extent and nature of this separation distance limits the contribution of the Site to natural processes within the Saugeen River and surrounding corridor. While the woodland on the Site does not include rare plants or vegetation communities, it may provide habitat for endangered and threatened species, including SAR bats.

Specific policies for significant woodlands are outlined within Section 7.4 of the Grey County Official Plan (2019) including policies to prohibit development or site alteration in woodlands if an EIS cannot prove no negative impacts to the habitat and/or resource function of the woodland (Section 7.4 1).

In order for development to proceed, some tree removals and infilling / grading would be required on Site. These actions are currently prohibited under current policy. It is our opinion that this work would not have an overall

negative impact to the significant woodland as the Site does not contain rare or unique features in relation to the greater wooded feature. If development were to be permitted, the work likely would not result in significant habitat loss as the areas of wooded habitat on the lot in the northwest and northeast corners are small in size. An agricultural field is the existing edge of the wooded feature; however, even with a new edge being created, no interior habitat would be lost. Although two (2) SC species were observed during field investigations (Eastern Wood-pewee and Wood Thrush), these species' habitat preferences are general and diverse and while these species likely nest in the adjoining forest to the north, it is unlikely that they use the forested habitat on Site specifically for this purpose.

The Site is currently zoned as Residential. The adjacent lot, which is similar in size and natural heritage features as the Site has also been designated as Residential. Lands south of Durham Road East surrounding the Environmental Protection Area containing the Saugeen River have been flagged as Regulated Area. To reduce potential impacts to natural heritage features and their functions, it is recommended that development be minimized to the extent possible and restricted to the southern portion of the lot adjacent to the residential area along Durham Road East to limit impacts to the sections of Significant Woodland on the Site.

Development as proposed would result in the removal of a number of trees, but due to the location of the Site with frontage onto residential properties abutting Durham Road East, it is anticipated that limited fragmentation of remaining natural areas and no interior forest disturbance would occur. Development within the Site is not expected to have a negative impact on the use of this area or its functions as wildlife habitat or a movement corridor.

To mitigate for the removal of trees, a tree compensation plan and forest edge management plan are recommended to minimize the potential for impacts to the remaining trees surrounding the development. Mitigation measures to address vegetation removal are outlined in Section 9.4 of the report.

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## 8.7 SIGNIFICANT VALLEYLANDS

The PPS (OMMAH, 2014) describes valleylands as “a natural area that occurs in a valley or other landform depression that has water flowing through or standing for some period of the year”. To be considered significant, valleylands must be ecologically important in terms of representation or amount, and must contribute to the quality and diversity of an identifiable geographic area or natural heritage system (OMMAH, 2014). Development and site alteration may be permitted in Significant Valleylands if it is demonstrated that there will be no negative impacts on the feature or its ecological function.

The Grey County (2019) includes significant valleylands on their schedule mapping and they include a definition in support of said policies. Section 7.7 of the County's OP (2019) specifies that Significant Valleylands should be evaluated on a site specific basis through an EIS using the following criteria:

- 1) The valley must be  $\geq 100$  m wide and  $\geq 2$  km long.
- 2) The valley banks must be  $\geq 3$  m in height (extrapolated from 5 m contours at 1:10,000 or better information where available).
- 3) Where valley slope is 3:1 on one side with no slope on the opposite side of the watercourse, the opposite valley limit is delineated using either 100m from centreline of the watercourse or the limit of the floodplain to create a continuous valley feature.
- 4) Where 3:1 valley slopes occur on both sides of the river, but they are not continuous, the floodplain limit (or contour information and professional judgment) is used to delineate a continuous valley feature.

The Municipality's OP (2012) does not include Significant Valleylands on their schedule mapping. Section E.1.2.2. specifies that where development is proposed within or on adjacent lands to Significant Valleylands, an EIS that involves a thorough review of the site for one or more of these natural features may be required to be submitted at the discretion of the Municipality, County, Saugeen Valley Conservation Authority, Ministry of Natural Resources or other public agency.

There were no Significant Valleylands identified on or within 120 m of the Site.



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## 8.8 SAND BARRENS, SAVANNAHS, AND TALLGRASS PRAIRIES

Sand barrens, savannahs and tallgrass prairies are lands that are characterized by specific vegetation communities, soil conditions, and other environmental conditions. These habitats are considered rare within the province.

There were no sand barrens, savannahs or tallgrass prairies identified on or within 120 m of the Site.

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## 8.9 KEY HYDROLOGIC FEATURES

Hydrologic features within the Site and adjacent lands include the Saugeen River 400 m south of the Site, an unevaluated wetland on the Site, an unnamed tributary 64 m east of the Site, which is hydrologically connected to an unevaluated wetland and a pond 78 m east of the property (MNRF, 2019). Section 9.18 of the Grey County (2019) Official Plan defines wetlands and Section 7.3.2 states that development or site alteration is not permitted within any wetlands, significant or otherwise. Through a review of aerial imagery and ELC vegetation community composition of the unevaluated wetland mapped on-Site, it was confirmed that the wooded area in the northwest corner is comprised of an upland deciduous woodland with no evidence of wetland habitat and/or species observed. Furthermore, neither the County's, nor Town's feature mapping show that the Site contains a wetland feature.

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## 8.10 NATURAL HERITAGE FEATURE SUMMARY

A summary of the significant Natural Heritage Features identified on or adjacent to the Site are provided in **Table 8-4**, below. This summary is based on seven (7) site visits and a review of available documentation pertaining to the Site and adjacent lands. In order to minimize the effects of the development on these natural features mitigation measures may have to be considered for work conducted in the area.

**Table 8-4 Significant Feature Summary**

FEATURE	PRESENT	COMMENT
Fish Habitat	Yes	The Saugeen River is approximately 400 m South of the Site and supports a wide variety of fish and other aquatic species. An unnamed tributary of the River runs 64 m east of the property boundary and an open pond feature lies 78 m east of the Site. These features were not assessed for the presence of fish habitat during field studies due to their distances from the Site; therefore, fish habitat is assumed.
Significant ANSIs	No	There are no known ANSIs on or adjacent to the Site.
Threatened or Endangered Species Habitat	Yes	It was determined that the following 11 SAR could find potential habitat on or within 120 m of the Site: Bank Swallow, Barn Swallow, Bobolink, Chimney Swift, Eastern Meadowlark, Eastern Whip-poor-will, Eastern Small-footed Myotis, Little Brown Myotis, Northern Myotis, Tri-colored Bat and Butternut.
Significant Wetland	No	There were no known significant wetlands identified on or adjacent to the Site.
Significant Wildlife Habitat	Yes	The Site and surrounding 120 m lands have the potential to be significant wildlife habitat including: raptor wintering areas, bat maternity colonies, turtle wintering areas and amphibian breeding habitat (woodland).

FEATURE	PRESENT	COMMENT
Significant Woodland	Yes	The woodland on the Site is part of a larger woodland that is considered significant based on the Municipality's significance criteria.
Significant Valleyland	No	There was no significant valleylands identified on or adjacent to the Site.
Sand Barrens, Savannahs and Tallgrass Prairies	No	Sand barrens, savannahs and tallgrass prairies were not identified on or within 120 m of the Site.
Key Hydrologic Features (other than wetlands)	No	The Saugeen River lies approximately 400 m to the south of the Site, an unnamed tributary of the Saugeen River runs 64 m to the east and an unevaluated wetland and an open pond occur 78 m east of the Site. No other wetlands occur offsite within 120 m. No evidence of a watercourse, permanent or intermittent, was observed on the Site during the field investigations.

## 9 IMPACTS, MITIGATIONS AND ENHANCEMENTS

As part of an EIS, an impact assessment must be completed to determine the potential for negative impacts to significant natural features or their ecological functions on or within 120 m of the Site. In addition, suggestions for mitigation, including preventative or remedial measures must also be provided. Environmental effects can be direct, where impacts are immediately incurred as a result of site preparation or construction, such as vegetation removal, the loss of habitat, or erosion. Alternatively, environmental effects that are not immediately detected or occur adjacent to the development may be considered indirect impacts. Long term effects on drainage, introduction of invasive species, and increasing anthropogenic pressures from pets, noise, and light are just a few examples.

As detailed in the preceding sections, the following Significant Natural Heritage Features were identified on or within 120 m of the Site: fish habitat, habitat for threatened and endangered species, SWH, and significant woodlands.

Anticipated direct impacts associated with the proposed development would include loss of vegetation, loss of associated habitat, creation of a new forest edge, and potential changes in hydrologic regime. Further to this, anthropogenic effects, including colonization by invasive species and encroachment into the surrounding natural habitat, may occur as a result of the proposed development.

Vegetation on Site will need to be removed to permit development, but no rare or significant species were observed during field investigations and the communities are well represented in the surrounding landscape. Vegetation removal may result in habitat loss for species using the Site; however, removals would be limited to a small percentage of the larger woodland adjacent to the Site. Habitats that are likely to be affected by vegetation removal on the Site are not considered unique to the Site and are thought to be present within the wider landscape.

To minimize the impacts to these natural heritage features, it is recommended that development be restricted to the southern portion of the Site. The current Site plan is depicted in **Figure 6**. Within the development envelope, 30% retention of woodland cover is recommended to minimize impacts related to development. An assessment of the potential for negative impacts to natural heritage features and ecological functions is provided below, along with suggestions for the mitigation of these impacts, to the extent possible.

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## 9.1 FISH HABITAT

Under the Fisheries Act, fish habitat is protected from any Harmful Alteration, Disruption, or Destruction (HADD). This may include any direct alteration of fish habitat such as change in morphology, substrates, introduction of barriers to fish movement, or alteration of instream cover, or instream or riparian vegetation. HADD may also result from changes to the quantity and quality of hydraulic and organic inputs from indirect fish habitat that may alter the ability of the habitat to support fish life functions (e.g., reductions in flow or increases in turbidity).

The Natural Heritage Reference Manual (OMNR, 2010) was consulted for information regarding potential impacts and mitigation. The Natural Heritage Reference Manual recommends a minimum buffer of 30 m from fish habitat.

The unnamed tributary of the Saugeen River that occurs 64 m east of the Site is located within an unevaluated wetland. The 30 m buffer to the pond and wetland will provide additional protection to potential fish habitat within the unmapped tributary. Direct impacts to the Saugeen River, the unnamed tributary and the pond east of the Site are not anticipated given their distances from the proposed development envelope. Additional mitigation is not considered necessary at this time.

At later stages of the project, potential indirect impacts to surrounding water bodies and fish habitat related to stormwater management should be considered.

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## 9.2 HABITAT FOR ENDANGERED OR THREATENED SPECIES

The SAR screening completed in Section 7.1, identified moderate to high habitat potential for 11 Endangered or Threatened species, including Bank Swallow, Barn Swallow, Bobolink, Chimney Swift, Eastern Meadowlark, Eastern Whip-poor-will, Eastern Small-footed Myotis, Little Brown Myotis, Northern Myotis, Tri-colored Bat and Butternut on and / or adjacent to the Site. Bobolink and Eastern Meadowlark were the only threatened or endangered species observed during the site investigation.

Impacts to Bank Swallow, Barn Swallow, Chimney Swift and Eastern Whip-poor-will are not anticipated, as suitable breeding habitat was not identified on Site.

Bobolink were observed to the eastern boundary of the property as a single singing male and as a pair during two survey dates. Eastern Meadowlark was noted as a single observation within the agricultural unit (OAG) on three separate survey dates. Bobolink and Eastern Meadowlark are listed federally (COSEWIC, 2017) and provincially (SARO, 2018) as Threatened, and as such, their habitat is protected under the ESA (Government of Ontario, 2007) and these species are protected under the MBCA (Government of Canada, 1994). As the Site is currently being used for agricultural purposes, Section 4.1 of the O. Reg. 242/08 under the ESA speaks to exemptions for Bobolink and Eastern Meadowlark for agricultural operations. This is discussed in detail in section 9.2.1.

Snag density surveys completed to assess for candidate bat maternity roosting habitat indicated that the FOD5 community on the Site meet the snag density threshold to be considered significant maternity roosting habitat, a type of significant wildlife habitat. Forested communities with preferred roost tree species (e.g., Maples within FOD5) may provide suitable habitat for Endangered bats. Eastern Small-footed Myotis, Little Brown Myotis, Northern Myotis and Tricolored Bat, which utilize cavity trees, were determined to have moderate habitat potential on and adjacent to the Site. Potential impacts to bats and bat habitat are discussed below.

Suitable habitat for Butternut was identified in the upland deciduous forests (FOD5) portions of the Site. Comprehensive surveys completed by WSP in 2019 did not yield observations of these species. Impacts to Butternut are not anticipated. Specific mitigation measures are not considered necessary.

Due to the potential for Threatened or Endangered species on the Site, the following is recommended:

- If Threatened or Endangered species are discovered during site preparation or construction activities, operations will stop, or be modified to avoid negative impacts to Species at Risk until further direction is provided by the MECP. The SAR Branch of the MECP should be contacted promptly upon the discovery of a Threatened or Endangered species within the construction area.

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### 9.2.1 BOBOLINK AND EASTERN MEADOWLARK

As Threatened species, they receive general habitat protection under the ESA, 2007 and are also afforded protection under the Migratory Birds Contravention Act (Government of Canada, 1994). To be confirmed as SWH, confirmed nests in the area are required. Direct impacts to nesting, foraging and perching habitat will occur as a result of the proposed development.

- Bobolink and Eastern Meadowlark were observed during the breeding bird surveys and incidentally. Both of these species nest in dense grass within grasslands and hayfields, such as the hayfield habitat in OAG. Agricultural harvesting and disturbance to nests pose the greatest risk to these species. Section 4.1 of O. Reg. 242/08 under the ESA speaks to exemptions for Bobolink and Eastern Meadowlark for agricultural operations. In summary, Section 4.1 allows farmers to proceed with agricultural operations on their lands, exempting them from Clause 9(1)(a) and (b) of the Act, which apply to the species and Subsection 10(1) of the Act, which applies to protected habitat. The last part of 4.1(3) suggests that damage or destruction of habitat is allowable while carrying out an agricultural operation if the area of habitat remains suitable for an agricultural operation.
- Given that portions of the site will undergo a change in land use that results in a loss of this habitat, we would recommend the following:
  - Continue to manage property for this year;
  - Next year periodically mow, or plant area to be developed with row crops, i.e. corn or soybean (effectively rendering that land unsuitable for these species);
  - Proceed with clearing / development in Fall 2020; and,
  - In general, vegetation removal should be restricted during their most vulnerable period, i.e. the breeding bird season (April 1st to August 31st).

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### 9.2.2 SPECIES AT RISK BATS

Before the introduction of White Nose Syndrome to over-wintering sites in North America, the limiting factor on bat populations was thought to be the availability of natural roost sites (OMNR, 1984). Forestry operations have had a history of removing mature woodlands and associated snag trees, reducing the generation of new snags, and decreasing the probability that trees will live long enough to become large snags (OMNR, 1984). The spread of White Nose Syndrome within the North American bat population has led to significant population declines in bat species that over-winter in cold, damp conditions, and infected hibernacula have experienced average population declines of 98% following two (2) years of exposure (COSEWIC, 2014). Following massive population declines due to White Nose Syndrome, emergency assessments of Northern Myotis and Little Myotis in 2012, resulted in those species being listed as Endangered at the provincial and federal level. Eastern Small-footed Bat is less susceptible to White-nose Syndrome than other species, however it too was listed as Endangered at the provincial level in 2014 (Ontario, 2018). Moderate habitat potential for these species exists on and within 120 m of the Site.

An inventory of potential bat maternity trees was completed on February 19, 2019. Snag density surveys identified high concentrations of cavity trees that may suggest the potential for significant bat maternity roost colonies. Further, preferred roost tree species (e.g., Sugar Maple) were present throughout the FOD5 community on the Site. The proposed development will require the removal of trees that have the potential to provide roosting habitat; however, treed habitats northeast of the Site are expected to provide similar potential for maternity roost habitat.

A total of 14 candidate snag trees greater than or equal to 10 cm DBH were identified. In general, the FOD5 community potential to provide suitable bat maternity roost habitat due to the presence of mature trees of preferred species (i.e. Sugar Maple). The proposed works have the potential to impact SAR bat habitat and Candidate SWH bat habitat given the woodland removal within FOD5.

The following mitigation measures are recommended to reduce the potential for impacts to the bat species that may be present on the Site, and to reduce the overall long-term impact to woodland wildlife habitat:

- At least 30% of the woodland area within the development envelope should be retained to minimize impacts to the woodland and associated habitats. Consideration should be given to retaining areas with large and / or significant cavity trees.
- Vegetation removal shall occur during appropriate timing windows. Specifically, tree removals shall be limited to between October 1<sup>st</sup> and March 31<sup>st</sup> (bat hibernation period) to avoid direct harm to SAR bat individuals (including potential maternal and day-roosting bats). Implement mitigation / protection measures including developing a lighting design that avoids light spill into retained woodlands / buffer zone and utilizes lighting that is least disturbing to bats.
- Limits of vegetation clearing shall be clearly staked in the field and disturbance beyond the staked limits shall not be permitted.
- Cavity trees, if identified within proximity to the proposed work areas, will be flagged and the dripline limits of these trees will be identified in the contract drawing for protection during construction phases.
- Standard erosion / sediment control measures are to be implemented for protection of wetland foraging habitats.
- To compensate for removal of potential roost trees, a combination of artificial roosting structures (bat boxes, rocket boxes, and / or Branden Bark) should be installed within the development area (e.g. within a future stormwater management block). The nature and location of these structures should be approved by MECP prior to installation.
- The MECP should be consulted to determine if additional mitigation or compensation is required to address requirements under the *ESA*, 2007 for impacts to potential roost habitat.

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## 9.3 SIGNIFICANT WILDLIFE HABITAT (SWH)

The Site and surrounding 120 m lands have the potential to provide six (6) SWH including:

- Four (4) Candidate SWH types were identified:
  - Raptor Wintering Areas;
  - Bat Maternity Colonies;
  - Turtle Wintering Areas; and,
  - Habitat for Special Concern and Rare Wildlife Species (Canada Warbler, Common Nighthawk, Golden-winged Warbler, Grasshopper Sparrow, Red-headed Woodpecker, Monarch Butterfly, Snapping Turtle and Midland Painted Turtle).
- Two (2) Confirmed SWH types were identified:
  - Habitat for Special Concern and Rare Wildlife Species (Eastern Wood-Pewee and Wood Thrush); and,
  - Amphibian Breeding Habitat (Woodland).

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### 9.3.1 RAPTOR WINTERING AREAS

Woodlands that are greater than 20 ha in size, with a combination of forest and upland habitat in close proximity to least disturbed sites, idle/fallow or lightly grazed field/meadow greater than 15 ha with adjacent woodlands may provide roosting, foraging and resting habitat for woodland raptors. The woodland on the Site is part of a larger woodland approximately 180 ha in size, including 3 h that is associated with FOD5 community on the Site (**Figure 2**). There were no listed species of raptor observed during the field investigation, and stick nests were not observed. Vegetation removal associated with the proposed development will render parts of the Site unsuitable as raptor wintering area. While this type of habitat was not confirmed, the following mitigation measures will help to reduce impacts to raptor species and / or their habitat, if present:

- Adjacent fields used for hunting by wintering raptors, the area should be kept as attractive to small mammal populations as possible. This requires a diverse plant community and a structurally complex ground layer;
- Prevent fields from being greatly reduced in size. This may involve the clustering of development at margins of open areas;

- Development and use of snow machine trails should be avoided in open fields and other areas known to be used by wintering raptors;
  - Tree removals are to be restricted during their most vulnerable period (i.e. from March 1st to July 31st) to ensure no direct harm to raptor species;
  - Limits of vegetation clearing shall be clearly staked in the field and disturbance beyond the staked limits shall not be permitted; and,
  - If an active nest is identified during vegetation removal or site preparation activities, the MNRF is to be consulted to determine the need for setbacks and / or other mitigation.
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### 9.3.2 BAT MATERNITY COLONY HABITAT

As noted in Section 9.2.2, results of the snag density surveys indicated that the woodland overlapping with the northwest and northeast corners of the Site should be considered candidate bat maternity colony habitat. Areas surveyed had a snag density of approximately 10 cavity trees / ha, when trees equal to or greater than 25 cm DBH were considered. To be confirmed as SWH for bat maternity colonies surveys need to confirm use by more than 10 Big Brown Bats or 5 adult female Silver-haired Bats.

Mitigation measures outlined in Section 9.2.2 should be followed to minimize impacts to candidate bat maternity colonies within the Site.

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### 9.3.3 TURTLE WINTERING AREAS

Turtle overwintering habitat was not identified on the Site, but may be present in the pond east of the Site.

Turtle wintering areas typically consist of permanent water bodies, large wetlands, bogs or fens with soft mud substrate and water depths great enough to avoid freezing throughout winter (MNRF, 2015). The unmapped watercourse on the Site appears to be connected to a pond approximately 78 m east of the Site (**Figure 2**). Detailed surveys of the pond were not undertaken given its location offsite; however, it may provide overwintering habitat if of sufficient depth to withstand freezing. Threats to turtle wintering areas are typically associated with direct alteration of the habitat; however, changes to the quantity and quality of water inputs, hydroperiod and water levels have the potential to render the waterbodies unsuitable as overwintering habitat.

Direct impacts to these habitats are not anticipated given their locations more than 100 m from the Site. Recommendations provided for Snapping Turtle in Section 9.3.1 will provide additional protection to these habitats, and other turtle species that may be present in the general area. Specific mitigation is not considered necessary.

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### 9.3.4 HABITAT FOR SPECIES OF CONSERVATION CONCERN

Based on the results of the background review, field investigation, and screening for species of conservation concern it was determined that habitats on or within 120 m of the Site are considered to have moderate to high potential for seven (7) species, including Eastern Wood-pewee, Wood Thrush, Canada Warbler, Common Nighthawk, Golden-winged Warbler, Grasshopper Sparrow and Red-headed Woodpecker. As Special Concern species on the SARO List these species do not receive habitat protection under the *Endangered Species Act* (Ontario, 2007).

There were two (2) avian species observed during the site investigation. Eastern Wood-Pewees were identified on and adjacent to the Site during most of the site visits, and included two (2) singing males within FOD5 on the Site (**Figure 4**). In general, Eastern Wood-Pewees were found in mature deciduous forest on and adjacent to the Site. Wood Thrushes were also identified. A single singing male was observed north of the Site. Suitable habitat for this species exists throughout the forested ecotype FOD5.

Direct habitat loss will occur as a result of vegetation removal within the development area. Indirect impacts to remaining woodland habitat may include changes to drainage, water quality and quantity entering surface water features, changes in the water table, and creation of edge effects. Avian species observed during the field investigation are expected to find similar suitable habitat in the surrounding area, as most affected species are



associated with woodlands; features which are plentiful within the general area. The following mitigation measures are proposed to reduce impacts to the avian Special Concern species with the potential to be on or adjacent to the Site:

- To avoid disturbance to local wildlife and to comply with the Migratory Birds Convention Act (MBCA; Government of Canada, 1994), woodland removals should be limited as much as possible and tree and vegetation clearing (including grubbing) shall be avoided during the bird nesting season (approximately April 1 to August 31).
- Mitigation measures provided for Significant Woodlands and SAR bat habitat will also provide additional benefit to these species.

Snapping Turtle and Midland Painted Turtle were not recorded during site investigations, but due to the presence of wetland habitat and a pond east of the Site, they are thought to have moderate potential to occur on or within the vicinity of the Site. In Ontario, adult mortality (particularly road mortality), persecution, and nest depredation are the main threats to turtle populations (Ontario, 2019). For turtles dependent on aquatic and wetland habitats, changes to the quantity and quality of water inputs, and hydroperiod for wetlands, have the greatest potential to impact habitat for these species. To protect these species, the following measures are recommended:

- Naturally occurring vegetation within 30 m of the wetlands within the eastern portion of the Site is to be maintained.
- Maintain existing drainage patterns, including surface and groundwater inputs to wetlands within the eastern portion of the Site.
- Exclusion fencing is to be installed around soil and gravel stockpiles, to ensure these areas are not used by turtles for nesting.

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### 9.3.5 AMPHIBIAN BREEDING HABITAT (WOODLAND)

Four (4) of the listed species (Wood Frog, Spring Peeper, Gray Treefrog and American Toad) and one (1) unlisted species (Green Frog) were heard during the spring amphibian call surveys; however, only two species (Gray Treefrog and Spring Peeper) were assigned a Call Level Code of 3. There were no wetlands confirmed to be within Site limits; however, an unevaluated wetland is situated approximately 64 m east of the Site boundary and may be hydrologically connected to an open pond approximately 78 m east of the Site. All anuran calls recorded during field surveys were heard from the direction of this pond feature.

- No direct impacts to this habitat are to be expected during development given the proximity of the wetland / pond feature. However, impacts to this feature can still be minimized by implementing the following mitigation measures to minimize or avoid impacts to this habitat and resident amphibian species:
  - Construction activities will be timed outside the amphibian breeding season (April to June) to ensure there is no disruption of amphibian breeding activities;
  - Exclusion fencing (light duty sedimentation fencing) will be installed around the work area to prevent amphibians from entering the construction zone; and,
  - Mitigation measures recommended for wetlands, permanent streams and fish habitat will provide additional protection for this habitat.

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## 9.4 SIGNIFICANT WOODLAND AND VEGETATION

The Site is located just north of Durham Road East and the vegetation on site is contiguous with the larger woodland feature that surrounds the Site to the northeast. One (1) vegetation community comprised the wooded portion of the property (Dry – Fresh Sugar Maple Deciduous Forest; FOD5) and extended beyond the Site's boundaries. The woodland feature is approximately 180 ha in size. It is deemed significant by both the County's Official Plan (2019) and the Municipality's Official Plan (2012) due to the expanse.

A wide range of ecosystem functions and economic benefits are provided by woodlands, including the following:



- Acting as a carbon sink by storing large amounts of carbon;
- Providing hydrological cycling and decreasing soil erosion;
- Providing nutrient cycling by extracting nutrients and converting them for use by other life forms;
- Mitigating poor air quality by cleaning air and reducing pollution; and,
- Providing habitats to different guilds of species.

In addition to the above benefits, the woodland on the Site is thought to be provide potential habitat for Endangered bat species, candidate SWH (raptor wintering areas, bat maternity colonies, turtle wintering areas, and habitat for species of conservation concern [Canada Warbler, Common Nighthawk, Golden-winged Warbler, Grasshopper Sparrow Red-headed Woodpecker, Monarch, Snapping Turtle and Midland Painted Turtle]), and confirmed SWH (habitat for species of conservation concern [Eastern Wood-pewee and Wood Thrush] and amphibian breeding habitat (woodland).

To permit development on the property, herbaceous and woody vegetation removal will be required. In total, 3 ha, or less than 2% of the woodland will be impacted. Therefore, the total area of the woodland feature would be reduced to 177 ha, which would maintain the remaining woodland as Significant. By retaining the more sensitive central woodland, we are also maintaining the woodland feature's function as a movement corridor for wildlife through the landscape and maintaining the connection between the northern and southern portions of this woodland. During field investigations, no locally or regionally rare plant species were noted and vegetation seemed to be relatively homogenous with the surrounding landscape. The removal of vegetation on Site will affect the form and ecological functions of the significant woodland. Removal of vegetation within the northwest and northeast corners of the Site, associated with the potential development envelope, will create a new woodland edge. The new forest edge may result in other indirect future impacts including: increased occurrences of invasive species and anthropogenic pressures from pets, noise, etc. Further, potential indirect impacts to the woodland may include:

- Damage to vegetation outside the work zone;
- Sedimentation;
- Spills of contaminants / fuel; and / or,
- Soil compaction.

In order to minimize potential direct and indirect negative impacts on the remaining vegetation on the Site, the following mitigation measures are proposed:

- At least 30% of the woodland area within the development envelope should be retained to minimize impacts to the woodland and associated habitats. Consideration should be given to retaining areas with large and/or significant cavity trees.
- Tree protection fencing should be installed between the areas of proposed development and the new treed edge to reduce the potential for physical damage to trees and their root systems. Supports and bracing used to secure the barriers should be installed as close to the tree driplines as possible or beyond, and in a way that minimizes root damage;
- Tree protection fencing should be installed before work on the Site begins and inspected regularly to ensure it is performing its intended function. If any section is found to be damaged or non-functional it should be replaced immediately;
- The following activities are prohibited beyond the tree protection fencing: storage or stockpiling of materials including fill, top soil, construction equipment and debris; disposal of liquids; and operation of heavy machinery;
- Tree removal should conform to local, municipal, or regional by-laws, and should be performed by properly trained and accredited individuals;
- To limit disturbance to the local birds, vegetation removal should be limited during their most vulnerable period, i.e. the breeding bird season (April 1st to August 31st), unless a survey by a qualified biologist confirms that there are no active nests within the vegetation to be removed;
- To limit stress to trees retained around the perimeter of the development and along the new treed edge, a forest edge management plan is recommended;

- Compensation for woodland removal should be negotiated with the Municipality and / or SVCA if there is limited room on the Site to accommodate plantings; and,

To minimize the negative impacts on the new treed edge, the following mitigation measures are proposed:

- Tree removal should take place at minimum one season prior to construction activities taking place in the vicinity of the new treed edge. This will ensure the new edge has been 'pre-stressed' before construction activities begin; and,
- Tree protection fencing should be employed between the areas of proposed development and the new forest boundary to reduce the potential physical damage of trees and their root systems within this area. Tree protection fencing should be installed before work on the Site begins, and removed after the threat of damage to trees and roots has ceased.

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## 9.5 GENERAL MITIGATION MEASURES

General mitigation measures, as provided below, should be carried forward and incorporated into detailed plans at later stages of the project.

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### 9.5.1 AQUATIC / WETLAND HABITAT

#### 9.5.1.1 SEDIMENT AND EROSION CONTROL MEASURES

- An erosion and sediment control (ESC) plan will be created during the detail design stage. The plan should include the following:
  - The Contractor will follow the erosion and sediment control measures identified in the contract and prevent/control potential for erosion and sediment caused by their construction methods.
  - All ESC measures will be inspected and maintained by the Contractor or Environmental Inspector to ensure they are functioning as intended throughout the construction period, and until such time that disturbed areas have stabilized.
  - Sediment-laden water is to be treated before being discharged from work areas by being passed through a sediment filtering device located a minimum of 30 m from any wetland.
  - The installation, monitoring, maintenance and removal of temporary sediment control measures shall meet the requirements of the approval agencies.

#### 9.5.1.2 CONSTRUCTION MITIGATION MEASURES

- Any temporarily stockpiled soil, debris or other excess materials, and any construction-related materials, will be properly contained (e.g. within siltation fencing) in areas separated at least 30 m from watercourses and wetlands. All construction materials, excess materials and debris should be removed and appropriately disposed of following construction.
- All construction-related activities will be controlled to prevent entry of petroleum products, debris or other potential contaminants/deleterious substances, in addition to sediment as outlined above, to any watercourse or wetland.
- The Contract Administrator's team will include an Environmental Inspector experienced in working around watercourses and wetlands, who will be responsible for ensuring the erosion and sediment control measures are functioning effectively, being maintained and that all of the other general mitigation measures are being implemented as intended. The Environmental Inspector will also ensure all environmental mitigation and design measures are properly installed / constructed and maintained. Appropriate contingency and response plans will be in place and implemented if required.
- If the Contractor wishes to alter any of the mitigation plans as outlined in the Contract Document, then the associated approval agency will need to be made aware of and approve the changes prior to construction.

### 9.5.1.3 OPERATION AND MACHINERY

- All construction-related activities should be controlled so as to prevent entry of any petroleum products, debris or other potential contaminants/deleterious substances, in addition to sediment as outlined above, to watercourses and wetlands.

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### 9.5.2 WILDLIFE

- Wildlife incidentally encountered during construction shall not be knowingly harmed and shall be allowed to move away from the construction area on its own.
- In the event wildlife encountered during construction does not move from the construction zone, the contractor shall contact the MNRF Midhurst District to move the animal to a safe area.
- If Threatened or Endangered species are discovered during site preparation or construction activities, operations will stop, or be modified to avoid negative impacts to SAR until further direction is provided by the MECP. The SAR Branch of the MECP should be contacted promptly upon the discovery of a Threatened or Endangered species within the construction area.
- To limit disturbance to the local birds, tree removal (and limbing) should be limited during their most vulnerable period, i.e. outside the breeding bird season (April 1st to August 31st), unless a survey by a qualified biologist confirms that there are no active nests within the tree to be removed.
- The Contractor shall not destroy the active nests (nests with eggs or young birds), or wound or kill birds, of species protected under the MBCA (1994) and / or Regulations under that Act. When active nests are encountered the contractor shall contact a qualified biologist and / or the MNRF Midhurst District for direction.
- The installation of directional lighting and lighting placed on timers should be considered in building design to limit negative effects of artificial lighting on wildlife.

## 10 CONCLUSIONS AND RECOMMENDATIONS

Following the background review and site investigations conducted on the Site, the following conclusions can be made:

- The Site is located immediately north of Durham Road East, within Part Lot 24, Concession 1, Geographic Township of East of Owen Sound Road, Municipality of West Grey, County of Grey, Ontario (**Figure 1**).
- The Site is bounded to the south by residential properties and Durham Road East, to the north and northeast by empty wooded lots and by agricultural lands to the west and east.
- The landowner is seeking approval to construct a 114-lot subdivision including townhouse blocks, multi-family blocks and accessories (i.e. access roads, a storm water management system, etc.) The current Site plan is depicted in **Figure 6**.
- The Saugeen River, a key hydrological feature providing fish habitat, is located approximately 400 m south of the Site on the other side of Durham Road East. Impacts to this feature are not anticipated given the magnitude of the setback and the composition of the intervening lands (road, residential properties, and trees/vegetation).
- The treed area on the Site is considered significant and impacts to this feature are anticipated. However, if the recommended mitigation measures are employed, impacts are expected to be relatively minor. The proposed development is unlikely to affect the overall health or significance of the larger woodland feature, or the ecological functions it provides.

- To permit development, some vegetation, both herbaceous and woody species, will need to be removed. Exact numbers and species will be determined once a final Site Plan has been completed. A forest edge management plan is recommended including compensation measures to be discussed with the Municipality and/or the SVCA.
- Two (2) Threatened species were noted during field investigations. Bobolink and Eastern Meadowlark were confirmed to be breeding within the hayfield habitat (OAG). As Bobolink and Eastern Meadowlark are Threatened species, their habitat is protected under the ESA. However, since this habitat is being utilized for agricultural purposes, Section 4.1 of O. Reg. 242/08 of the ESA suggests that damage or destruction of habitat is allowable while carrying out an agricultural operation under the condition that the area remains suitable for an agricultural operation.
- Results of the bat habitat snag density surveys indicated that the woodland on the Site provides moderate habitat potential for SAR bats, and should also be considered candidate bat maternity colony habitat (SWH). Mitigation includes retention of 30% of the woodland on the Site, a minimum 30% retention of woodland area within the development envelope, including protection of large and / or significant cavity trees, where feasible. By scheduling vegetation removal during the bat inactive period (October 1 to March 31) direct impacts to individuals will be avoided. To compensate for removal of potential roost trees, artificial roosting structures should be installed within the development area.
- Two (2) species of Special Concern were recorded during site investigations, including Eastern Wood-Pewee and Wood Thrush. Eastern Wood-Pewee and Wood Thrush find habitat in the forested portions of the Site in FOD5. As species of Special Concern, Eastern Wood-pewee and Wood Thrush are not afforded habitat protection under the ESA. Vegetation removal will reduce the availability of nesting habitat for these species; however, abundant nesting and foraging habitat exists within the immediate area. Mitigation measures include retaining as much forest as possible and utilizing timing windows to prevent direct impacts to these species.
- The Site and surrounding adjacent lands have the potential to provide Candidate Raptor Wintering Areas, Bat Maternity Colonies, Turtle Wintering Areas and Habitat for SCC (Canada Warbler, Common Nighthawk, Golden-winged Warbler, Grasshopper Sparrow Red-headed Woodpecker, Monarch, Snapping Turtle and Midland Painted Turtle); and Confirmed Habitat for SCC (Eastern Wood-Pewee and Wood Thrush) and Amphibian Breeding Habitat (Woodland). Recommendations for mitigation include restricting vegetation removals during vulnerable breeding periods, limiting vegetation removal, and maintenance of the 30 m buffer to the pond / wetland habitat
- Proposed mitigation measures outlined within this report should be reviewed and appropriately implemented.

## 11 CLOSURE

This report has been prepared by WSP Canada Inc. The assessment represents the conditions at the Site only at the time of the assessment, and is based on the information referenced and contained in the report. The conclusions presented herein respecting current conditions represent the best judgment of the assessors based on current environmental standards. WSP Canada Inc. attests that to the best of our knowledge, the information presented in this report is accurate. The use of this report for other projects without written permission of the client and WSP Canada Inc. is solely at the user's own risk.

Thank you for the opportunity to complete this report. We trust that this information is satisfactory for your current requirements. Please contact us if we can be of further assistance.

## 12 LITERATURE CITED

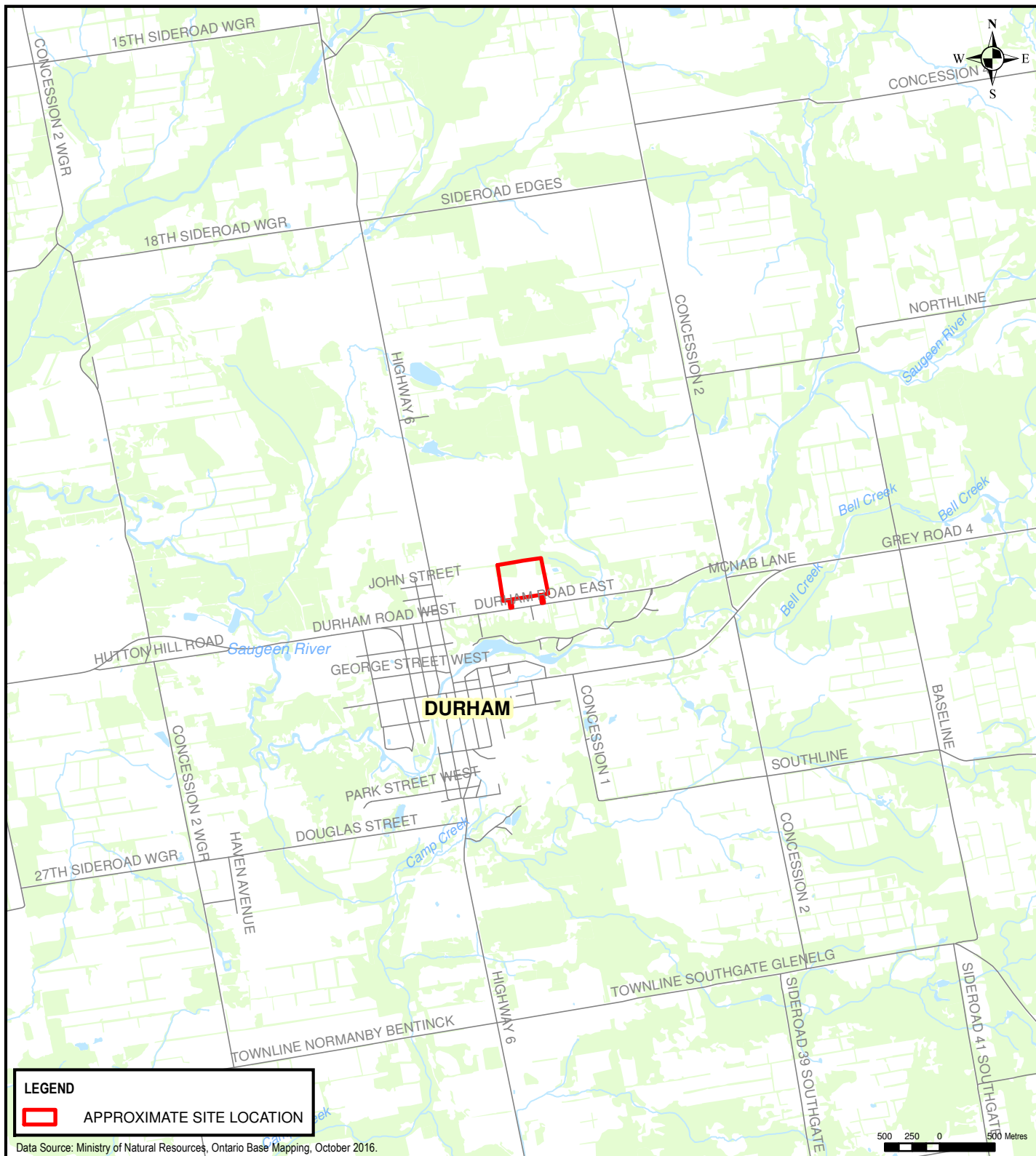
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# FIGURES







126 DON HILLOCK DRIVE, UNIT 2  
AURORA, ONTARIO CANADA L4G 0G9  
TEL.: 905-750-3080 | FAX: 905-727-0463 | WWW.WSP.COM

PROJECT:

ENVIRONMENTAL IMPACT STUDY

TITLE:

SITE LOCATION PLAN

CLIENT:

COBIDE ENGINEERING INC.

SCALE:

1:50,000

DRAWN BY:

TP

CHECKED BY:

CP

PROJECT NO:

181-15551-00

DATE:

DECEMBER 2019

FIGURE NO:

1

REV.:

-





126 DON HILLOCK DRIVE, UNIT 2  
AURORA, ONTARIO CANADA L4G 0G9  
TEL.: 905-750-3080 | FAX: 905-727-0463 | WWW.WSP.COM

LEGEND

- APPROXIMATE SITE LOCATION
- 120 m STUDY AREA
- WATERCOURSE
- WATERBODIES
- UNEVALUATED WETLAND
- WOODED AREA (MNR)
- SIGNIFICANT WOODLAND (GREY COUNTY)
- DEER WINTERING AREA (STRATUM 2)



60 30 0 60 Metres

Data Source: Ministry of Natural Resources, Ontario Base Mapping, October 2016.

CLIENT:

COBIDE ENGINEERING INC.

PROJECT:

ENVIRONMENTAL IMPACT STUDY

PROJECT NO:  
181-15551-00

DATE:  
DECEMBER 2019

DESIGNED BY:

DRAWN BY:  
TP

CHECKED BY:  
CP

FIGURE NO:  
2

SCALE:  
1:6,000

TITLE:

NATURAL HERITAGE FEATURES

DISCIPLINE:

ENVIRONMENT

ISSUE:

REV.:





126 DON HILLOCK DRIVE, UNIT 2  
AURORA, ONTARIO CANADA L4G 0G9  
TEL.: 905-750-3080 | FAX: 905-727-0463 | WWW.WSP.COM

LEGEND

- APPROXIMATE SITE LOCATION
- WATERCOURSE
- WATERBODIES
- ECOLOGICAL LAND CLASSIFICATION
  - CUT1 DRY-FRESH DECIDUOUS SHRUB THICKET
  - FOD5 DRY-FRESH SUGAR MAPLE DECIDUOUS FOREST
  - OAG OPEN AGRICULTURE



Data Source: Ministry of Natural Resources, Ontario Base Mapping, October 2016.

CLIENT:  
  
COBIDE ENGINEERING INC.

PROJECT:  
  
ENVIRONMENTAL IMPACT STUDY

PROJECT NO: 181-15551-00	DATE: DECEMBER 2019
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DESIGNED BY:  
-

DRAWN BY:  
T.P.

CHECKED BY:  
CP

FIGURE NO: 3	SCALE: 1:2,000
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TITLE:  
  
ECOLOGICAL LAND CLASSIFICATION

DISCIPLINE:  
  
ENVIRONMENT

ISSUE: -	REV.: -
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126 DON HILLOCK DRIVE, UNIT 2  
AURORA, ONTARIO CANADA L4G 0G9  
TEL.: 905-750-3080 | FAX: 905-727-0463 | WWW.WSP.COM

LEGEND

- APPROXIMATE SITE LOCATION
- WETLANDS
- WATERCOURSE
- WATERBODIES
- BREEDING BIRD POINT COUNT LOCATION
- AMPHIBIAN SURVEY LOCATION

SPECIES AT RISK OBSERVATIONS

- BOBO - BOBOLINK (THR)
- EAME - EASTERN MEADOWLARK (THR)
- EAWP - EASTERN WOOD-PEWEE (SC)
- WOTH - WOOD THRUSH (SC / THR)



Data Source: Ministry of Natural Resources, Ontario Base Mapping, October 2016.

CLIENT:  
COBIDE ENGINEERING INC.

PROJECT:  
ENVIRONMENTAL IMPACT STUDY

PROJECT NO:  
181-15551-00

DATE:  
DECEMBER 2019

DESIGNED BY:  
-

DRAWN BY:  
T.P.

CHECKED BY:  
CP

FIGURE NO:  
4

SCALE:  
1:2,500

TITLE:  
AMPHIBIAN SURVEY LOCATIONS &  
BREEDING BIRD SURVEY LOCATIONS

DISCIPLINE:  
ENVIRONMENT

ISSUE:  
-

REV.:  
-





126 DON HILLOCK DRIVE, UNIT 2  
AURORA, ONTARIO CANADA L4G 0G9  
TEL.: 905-750-3080 | FAX: 905-727-0463 | WWW.WSP.COM

LEGEND

- APPROXIMATE SITE LOCATION
- WETLANDS
- WATERCOURSE
- WATERBODIES
- WOODED AREA (MNRF)
- PLOT CENTROID WITH ID
- PLOT AREA
- CAVITY TREE WITH DBH  $\geq$  10 cm
- CAVITY TREE WITH DBH  $\geq$  25 cm
- TREE WITH POTENTIAL TRI-COLORED BAT HABITAT

20 10 0 20 Metres



Data Source: Ministry of Natural Resources, Ontario Base Mapping, October 2016.

CLIENT:  
COBIDE ENGINEERING INC.

PROJECT:  
ENVIRONMENTAL IMPACT STUDY

PROJECT NO: 181-15551-00	DATE: DECEMBER 2019
-----------------------------	------------------------

DESIGNED BY:  
-

DRAWN BY:  
T.P.

CHECKED BY:  
CP

FIGURE NO: 5	SCALE: 1:2,000
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TITLE:  
BAT PLOTS

DISCIPLINE:  
ENVIRONMENT

ISSUE: -	REV.: -
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126 DON HILLOCK DRIVE, UNIT 2  
AURORA, ONTARIO CANADA L4G 0G9  
TEL.: 905-750-3080 | FAX: 905-727-0463 | WWW.WSP.COM

LEGEND

- APPROXIMATE SITE LOCATION
- WATERCOURSE
- WATERBODIES
- PROPOSED DEVELOPMENT



20 10 0 20 Metres

Data Source: Ministry of Natural Resources, Ontario Base Mapping, October 2016.

CLIENT:  
**SARAH PROPERTIES LTD.**

PROJECT:  
**ENVIRONMENTAL IMPACT STUDY**

PROJECT NO: 181-15551-00	DATE: DECEMBER 2019
-----------------------------	------------------------

DESIGNED BY:  
-

DRAWN BY:  
T.P.

CHECKED BY:  
CP

FIGURE NO: 6	SCALE: 1:2,000
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TITLE:  
**SITE PLAN**

DISCIPLINE:  
**ENVIRONMENT**

ISSUE: -	REV.: -
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# APPENDIX

**A**

AGENCY

CORRESPONDENCE



## Perkin, Carlene

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**From:** Emily Payton <e.payton@svca.on.ca>  
**Sent:** Monday, January 28, 2019 12:36 PM  
**To:** Rodo, Jaclyn  
**Subject:** RE: Broos Subdivision, Durham - Inquiry

Hi Jaclyn,

Apologies for the delay. Generally your proposed scope of work is acceptable to SVCA staff.

Based on SVCA staff's in-office desktop review, we note that fish habitat may be within 120 metres of the property. Restricted Species may be present and SVCA staff are unsure if you have addressed this in your proposed scope of work. Significant Woodlands as noted in the Grey County OP require review in our opinion. The adjacent lands to these features noted also require review.

Should you have any further questions, please do not hesitate to contact this office.

Regards,

Emily



*Emily Payton*, Environmental Planning Technician  
1078 Bruce Rd. 12, Box 150 Formosa ON N0G 1W0  
519-367-3040 Ext. 238 Fax 519-367-3041  
e.payton@svca.on.ca  
www.svca.on.ca



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**From:** Rodo, Jaclyn [mailto:Jaclyn.Rodo@wsp.com]  
**Sent:** Friday, January 11, 2019 8:51 AM  
**To:** Erik Downing <E.Downing@SVCA.ON.CA>; Emily Payton <e.payton@svca.on.ca>  
**Subject:** Broos Subdivision, Durham - Inquiry

Good morning, Emily and Erik.

WSP has been retained by the landowner (Walter Broos) of Part Lot 24, Concession 1 East of Owen Sound Road, Geographic Township of Glenelg, Municipality of West Grey, County of Grey, to complete an Environmental Impact Study (EIS). The property is located east of Highway 6 and north of Durham Road East, within the hamlet of Durham.

According to the November 27th, 2018 meeting minutes (attached), I see that you were both in attendance.

We have identified what we believe to be a suitable approach to assess the site based on background review and preliminary consultation with the Ministry of Natural Resources and Forestry (MNRF).

At this time, we ask that you review our proposed scope of work to identify any deficiencies, and also provide any relevant information SVCA can offer to support the EIS (e.g. floodplain and regulation mapping, ELC mapping, wildlife occurrences, etc.).

Proposed Scope of Work:

Background Review

- Review information provided by SVCA and MNRF and that gathered from relevant databases (e.g. Natural Heritage Information Centre).

Field Program

- Ecological Land Classification (3 season assessment)
- Amphibian Surveys (3 visits)
- Breeding Bird Surveys (2 visits)
- Species at Risk Habitat Screening
- Specie-specific surveys, where potential habitat is identified on site; specifically for:
  - Eastern Meadowlark and Bobolink
  - Eastern Whip-poor-will
- Treed habitats will be assessed for potential to support bat maternity roosts
- Incidental wildlife and Species at Risk occurrences documented

Impact Assessment & Recommendations

- Assessment of potential impacts will be completed
- Appropriate setbacks will be identified, as needed
- Mitigation strategies will be outlined

If you have any questions or would like to discuss the project in greater detail, do not hesitate to contact me.

Thank you,

**Jaclyn Rodo**

Ecologist



T+ 1 705-270-0178

M+ 1 705-761-7792

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**From:** Travis Burnside [<mailto:tburnside@cobideeng.com>]

**Sent:** December-20-18 5:06 PM

**To:** RON DAVIDSON <[ronalddavidson@rogers.com](mailto:ronalddavidson@rogers.com)>; Mark Turner <[mturner@westgrey.com](mailto:mturner@westgrey.com)>; Brent Glasier <[bglasier@westgrey.com](mailto:bglasier@westgrey.com)> <[bglasier@westgrey.com](mailto:bglasier@westgrey.com)>; Erik Downing <[e.downing@svca.on.ca](mailto:e.downing@svca.on.ca)> <[e.downing@svca.on.ca](mailto:e.downing@svca.on.ca)>; Taylor, Scott <[Scott.Taylor@grey.ca](mailto:Scott.Taylor@grey.ca)>; WALTER BROOS <[wbroos@rogers.com](mailto:wbroos@rogers.com)>; Reeves, Dan <[Dan.Reeves@wsp.com](mailto:Dan.Reeves@wsp.com)>; krennie@georgianplanning.ca; Emily Payton <[e.payton@svca.on.ca](mailto:e.payton@svca.on.ca)>; Rodo, Jaclyn <[Jaclyn.Rodo@wsp.com](mailto:Jaclyn.Rodo@wsp.com)>

**Subject:** RE: 2018-11-14 Broos Subdivision - Pre-Consultation Meeting - 01840

Good Afternoon

Further to our pre-consultation meeting, please find attached a copy of the draft meeting minutes.

**Perkin, Carlene**

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**From:** Scheifley, Jody (MNRF) <jody.scheifley@ontario.ca>  
**Sent:** Monday, November 26, 2018 9:47 AM  
**To:** Rodo, Jaclyn  
**Subject:** RE: Property Inquiry - Durham, County of Grey, Ontario

Hi Jaclyn,

Use April 1 – July 31<sup>st</sup> as a restrictive period for construction considering bobolink/meadowlark. Below is other SAR considerations.

Jody Scheifley

**BIOLOGIST | ONTARIO MINISTRY of NATURAL RESOURCES and FORESTRY | OWEN SOUND FIELD OFFICE**

1450 7<sup>TH</sup> Avenue East Owen Sound, Ontario, N4K 2Z1 | PH: 519.371.8471 | FAX: 519.372.3305 | EMAIL: [jody.scheifley@ontario.ca](mailto:jody.scheifley@ontario.ca)

## **SPECIES AT RISK IN WEST GREY**

Status for species as per the provincial **\*\*Species at Risk in Ontario (SARO) List - June 2016**  
**SARO List** - <http://www.ontario.ca/environment-and-energy/species-risk-ontario-list>

**END** - Endangered, **THR** - Threatened, **SC** - Special Concern

<b>TAXA</b>	<b>SPECIES</b>	<b>STATUS (as of Jun 2016)</b>	<b>DESCRIPTION OF HABITAT USED</b>	<b>HABITAT PROTECTION UNDER ESA</b>
Birds	Barn Swallow	THR	nest on ledges or walls in and outside of barns and other man made structures including buildings and bridges, may also use natural cliffs and caves.	General

Birds	Bank Swallow	THR	nets in burrows and natural and human-made settings where there are vertical faces in silt and sand deposits, many nest on banks of rivers and lakes but can be found in active or former sand and gravel pits	General
Birds	Bobolink	THR	hayfields and grassland habitats, pastures and some crop lands	General
Birds	Canada Warbler	SC	deciduous and coniferous forests, usually wet forest types with a well developed, dense shrub layer	N/A
Birds	Chimney Swift	THR	in and around urban settlements where they nest and roost in chimneys and other manmade vertical structures, will also nest in hollow trees, often near water	General
Birds	Common Nighthawk	SC	open areas with little to no ground vegetation, such as forest clearings, rock barrens, peat bogs, lakeshores and logged or burned over areas	N/A
Birds	Eastern Meadowlark	THR	native grasslands, pastures, agricultural fields especially in alfalfa and hay, old fields, meadows	General
Birds	Eastern Wood-Pewee	SC	intermediate-age mature forest stands with little understory vegetation, edges of deciduous and mixed forests, clearings, roadways and water	N/A
Birds	Golden-winged Warbler	SC	areas of early successional vegetation, found primarily on field edges, hydro or utility right-of-ways, or recently logged areas	N/A
Bird	Grasshopper Sparrow	SC	prefers drier, sparsely vegetated grasslands, particularly rough or unimproved pastures at least 30 hectares in size supporting varying amounts of forbs and shrubs	N/A
Birds	Red-headed Woodpecker	SC	nests in cavities in dead or mature trees in open woodland and woodland edges, especially in oak savannahs and riparian forest and habitats which contain a high density of dead trees	N/A

Birds	Whip-poor-will	THR	open woodlands or openings in mixed forests, rock or sand barrens with scattered trees, savannahs	General
Birds	Wood Thrush	SC	mature deciduous and mixed forests, moist stands of trees with developed undergrowth, prefer large forest, nests in live saplings, trees or shrubs	N/A
Fish	Redside Dace	END	clear, cool streams with a rubble and gravel bottom and a mixture of pool and riffle habitats	Regulated
Insects	Hungerford's Crawling Water Beetle	END	small to medium sized streams with moderate to fast flow, good aeration, cool temperatures, inorganic substrate and alkaline water conditions, often found immediately downstream of human dams, beaver dams and culverts	Regulated
Insects	Monarch Butterfly	SC	wherever there are milkweed plants and wildflowers, often found in old fields, abandoned farmland and roadsides	N/A
Mammals	American Badger	END	found in remnant tallgrass prairie, sand barrens and farmland, wooded areas adjacent to farmland and ravines	Regulated
Mammal	Eastern Small-footed Bat	END	roost under rocks, rock outcrops, in buildings, under bridges or in caves, mines or hollow trees	General
Mammal	Little Brown Bat	END	roost in trees or buildings during the day, often select attics, abandoned buildings and barns for summer colonies. Hibernates in caves and abandoned mines	General
Mammal	Northern Long-eared Bat	END	roost under loose bark and in the cavities of trees, hibernate in caves or abandoned mines	General
Mammal	Tri-coloured Bat	END	found in a variety of forested habitats, maternity colonies may be found in trees, rock crevices, and barns or other buildings. Hibernates in caves, mines and tunnels.	General
Molluscs	Rainbow Mussel	THR	small to medium sized rivers most often in clean, well-oxygenated waters at depths of less than one metre	General

Plants	Butternut	END	found in variety of sites, commonly in forest openings, old fields, hedgerows, on floodplains, stream sides or gradual slopes.	General
Plants	Hart's Tongue Fern	SC	mostly on Niagara Escarpment in rocky areas, particularly on limestone rock outcrops in maple-beech forest	N/A
Reptiles	Eastern Ribbonsnake	SC	usually found in vegetated areas close to water bodies, such as marshes, swamps, bogs, ponds, and edges of streams	N/A
Reptiles	Snapping Turtle	SC	very aquatic species, spend most of their lives in water, prefers shallow water in wetland habitats	N/A

#### **IMPORTANT NOTES AND DEFINITIONS:**

This list is based on known occurrences of species at risk or species that MNRF believes there is a strong likelihood of being present and may therefore not be completely exhaustive.

**\*\*Species at Risk in Ontario (SARO) List** - This list is subject to change and should therefore be checked periodically for updates.

**General Habitat Protection** - areas that a species currently depends on to carry out its life processes. These areas may include dens and nests, wetlands, forests and other areas essential for breeding, rearing, feeding, hibernation and migration.

**Regulated Habitat** - species specific habitat regulations can be found on MNR's Habitat Protection Page at <http://www.ontario.ca/environment-and-energy/species-risk>

**N/A** = Habitat protection is not provided for Special Concern species under the *Endangered Species Act* however approval authorities should ensure that Planning Act decisions consider the significant habitat of Special Concern species as potential significant wildlife habitat (as per the Provincial Policy Statement).

---

**From:** Dodge, Kathy (MNRF)

**Sent:** November 26, 2018 9:06 AM

**To:** Rodo, Jaclyn <Jaclyn.Rodo@wsp.com>

**Cc:** Scheifley, Jody (MNRF) <jody.scheifley@ontario.ca>

**Subject:** RE: Property Inquiry - Durham, County of Grey, Ontario

Hello Jaclyn

Yes, we do have different Management Biologist for different regions in this office. I am responsible for Bruce County and Jody Scheifley does Grey County. I have cc'd him on this email.

Thank you,

Kathy Dodge

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**Kathy Dodge**

MANAGEMENT BIOLOGIST | ONTARIO MINISTRY of NATURAL RESOURCES and FORESTRY | MIDHURST DISTRICT- OWEN SOUND FIELD OFFICE  
1450 7<sup>TH</sup> Ave. East, Owen Sound, ON N4K 2Z1 | PH: 519.371.8422 | FAX: 519.372.3305 | EMAIL: [kathy.dodge@ontario.ca](mailto:kathy.dodge@ontario.ca)

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**From:** Rodo, Jaclyn <[Jaclyn.Rodo@wsp.com](mailto:Jaclyn.Rodo@wsp.com)>  
**Sent:** Friday, November 23, 2018 2:03 PM  
**To:** Dodge, Kathy (MNRF) <[kathy.dodge@ontario.ca](mailto:kathy.dodge@ontario.ca)>  
**Subject:** Property Inquiry - Durham, County of Grey, Ontario

Hi Kathy,

I understand that Midhurst District has appointed different management biologists to different regions. If The County of Grey doesn't occur within your area, do you mind forwarding this email to the appropriate staff.

We have been retained to complete an Environmental Impact Study (EIS) for a proposed residential development within Part Lot 24, Concession 1 East of Owen Sound Road, Geographic Township of Glenelg, Municipality of West Grey, County of Grey. The property is located east of Highway 6 and north of Durham Road East, within the hamlet of Durham.

I've attached an image of the approximate property limit and also a GoogleEarth file for reference.

A review of Natural Heritage Information Centre (NHIC) for two quadrats (17NJ1592, 17NJ1492) revealed records for Bobolink (THR), Hart's-tongue Fern (S3), and Durham Conservation Area.

Can you please advise if there are additional features or Species at Risk that should be addressed as part of this EIS investigation. We would also ask you identify any applicable construction timing windows (e.g. bird nesting period) or mitigation strategies that should be considered as part of this study.

If you have any questions regarding our request, please do not hesitate to contact me.



# APPENDIX

## B

## SPECIES LISTS

**Appendix B: Vascular Plants Species List**

Family	Scientific Name	Common Name	CC	CW	GRANK	SRANK
Fabaceae	<i>Medicago sativa</i>	Alfalfa	0	5	G?	SE5
Cornaceae	<i>Cornus alternifolia</i>	Alternate-leaved Dogwood	6	5	G5	S5
Fagaceae	<i>Fagus grandifolia</i>	American Beech	6	3	G5	S4
Ulmaceae	<i>Ulmus americana</i>	American Elm	3	-2	G5?	S5
Tiliaceae	<i>Tilia americana</i>	Basswood	4	3	G5	S5
Faboideae	<i>Lotus corniculatus</i>	Bird's-foot Trefoil	0	1	G?	SE5
Brassicaceae	<i>Cardamine flexuosa</i>	Bitter Cress	0	5	G?	SE1
Rosaceae	<i>Prunus serotina</i>	Black Cherry	3	3	G5	S5
Fabaceae	<i>Medicago lupulina</i>	Black Medick	0	1	G?	SE5
Rosaceae	<i>Rubus occidentalis</i>	Black Raspberry	2	5	G5	S5
Juglandaceae	<i>Juglans nigra</i>	Black Walnut	5	3	G5	S4
Caryophyllaceae	<i>Silene vulgaris</i>	Bladder Campion	0	5	G?	SE5
Papaveraceae	<i>Sanguinaria canadensis</i>	Bloodroot	5	4	G5	S5
Asteraceae	<i>Solidago canadensis</i>	Canada Goldenrod	1	3	G5	S5
Rosaceae	<i>Prunus virginiana</i>	Choke Cherry	2	1	G5	S5
Rosaceae	<i>Malus pumila</i>	Common Apple	0	5	G5	SE5
Rhamnaceae	<i>Rhamnus cathartica</i>	Common Buckthorn	0	3	G?	SE5
Asteraceae	<i>Taraxacum officinale</i>	Common Dandelion	0	3	G5	SE5
Oleaceae	<i>Syringa vulgaris</i>	Common Lilac	0	5	G?	SE5
Caryophyllaceae	<i>Cerastium fontanum</i>	Common Mouse-ear Chickweed	0	3	G?	SE5
Plantaginaceae	<i>Plantago major</i>	Common Plantain	0	-1	G5	SE5
Asteraceae	<i>Senecio vulgaris</i>	Common Ragwort	0	5	G?	SE5
Plantaginaceae	<i>Veronica officinalis</i>	Common Speedwell	0	5	G5	SE5
Rosaceae	<i>Fragaria virginiana</i>	Common Strawberry	2	1	G5	S5
Asteraceae	<i>Achillea millefolium</i>	Common Yarrow	0	3	G5	SE
Fabaceae	<i>Vicia cracca</i>	Cow Vetch	0	5	G?	SE5
Asteraceae	<i>Erigeron annuus</i>	Daisy Fleabane	0	1	G5	S5
Violaceae	<i>Viola pubescens</i>	Downy Yellow Violet	5	4	G5	S5
Cyperaceae	<i>Carex arctata</i>	Drooping Wood Sedge	5	5	G5?	S5
Berberidaceae	<i>Caulophyllum giganteum</i>	Early Blue Cohosh	6	5	G?	S4?
Ranunculaceae	<i>Thalictrum dioicum</i>	Early Meadow-rue	5	2	G5	S5
Cupressaceae	<i>Thuja occidentalis</i>	Eastern White Cedar	4	-3	G5	S5
Berberidaceae	<i>Berberis vulgaris</i>	European Barberry	0	3	G?	SE5
Caprifoliaceae	<i>Viburnum opulus</i>	European Highbush Cranberry	0	0	G5	SE4
Asparagaceae	<i>Maianthemum racemosum</i>	False Solomon's Seal	4	3	G5	S5
Convolvulaceae	<i>Convolvulus arvensis</i>	Field Bindweed	0	5	G?	SE5
Asteraceae	<i>Hieracium caespitosum</i>	Field Hawkweed	0	5	G?	SE5
Equisetaceae	<i>Equisetum arvense</i>	Field Horsetail	0	0	G5	S5
Asteraceae	<i>Erigeron</i> sp.	Fleabane species				

**Appendix B: Vascular Plants Species List**

Family	Scientific Name	Common Name	CC	CW	GRANK	SRANK
Rubiaceae	<i>Galium triflorum</i>	Fragrant Bedstraw	4	2	G5	S5
Brassicaceae	<i>Alliaria petiolata</i>	Garlic Mustard	0	0	G?	SE5
Asteraceae	<i>Solidago</i> sp.	Goldenrod species				
Apiaceae	<i>Aegopodium podagraria</i>	Goutweed	0	0	G?	SE5
Cyperaceae	<i>Carex gracillima</i>	Graceful Sedge	4	3	G5	S5
Rosaceae	<i>Crataegus</i> sp.	Hawthorn species				
Lamiaceae	<i>Prunella vulgaris</i>	Heal-all	5	5	G5	S5
Geraniaceae	<i>Geranium robertianum</i>	Herb Robert	0	5	G5	SE5
Betulaceae	<i>Ostrya virginiana</i>	Ironwood	4	4	G5	S5
Araceae	<i>Arisaema triphyllum</i>	Jack-in-the-pulpit	5	-2	G5	S5
Asteraceae	<i>Centaurea</i> sp.	Knapweed species				
Asteraceae	<i>Arctium minus</i>	Lesser Burdock	0	5	G?	SE5
Apocynaceae	<i>Vinca minor</i>	Lesser Periwinkle	0	5	G?	SE5
Liliaceae	<i>Convallaria majalis</i>	Lily-of-the-valley	0	5	G5	SE5
Aceraceae	<i>Acer negundo</i>	Manitoba Maple	0	-2	G5	S5
Violaceae	<i>Viola cucullata</i>	Marsh Blue Violet	5	-5	G4G5	S5
Caprifoliaceae	<i>Lonicera morrowii</i>	Morrow's Honeysuckle	0	5	G?	SE3
Rosaceae	<i>Sorbus</i> sp.	Mountain-ash species				
Rosaceae	<i>Rosa multiflora</i>	Multiflora Rose	0	3	G?	SE4
Caprifoliaceae	<i>Viburnum lentago</i>	Nannyberry	4	-1	G5	S5
Pinaceae	<i>Picea abies</i>	Norway Spruce	0	5	G?	SE3
Rosaceae	<i>Crataegus monogyna</i>	One-seeded Hawthorn	0	5	G5	SE5
Poaceae	<i>Dactylis glomerata</i>	Orchard Grass	0	3	G?	SE5
Asteraceae	<i>Chrysanthemum leucanthemum</i>	Ox-eye Daisy	0	5	G?	SE5
Asteraceae	<i>Erigeron philadelphicus</i>	Philadelphia Fleabane	1	-3	G5	S5
Anacardiaceae	<i>Toxicodendron radicans</i>	Poison-ivy	5	-1	G5	S5
Grossulariaceae	<i>Ribes cynosbati</i>	Prickly Gooseberry	4	5	G5	S5
Fabaceae	<i>Trifolium pratense</i>	Red Clover	0	2	G?	SE5
Adoxaceae	<i>Sambucus racemosa</i>	Red-berried Elderberry	5	2	G5	S5
Plantaginaceae	<i>Plantago lanceolata</i>	Ribgrass	0	0	G5	SE5
Vitaceae	<i>Vitis riparia</i>	Riverbank Grape	0	-2	G5	S5
Rosaceae	<i>Potentilla recta</i>	Rough-fruited Cinquefoil	0	5	G?	SE5
Onocleaceae	<i>Onoclea sensibilis</i>	Sensitive Fern	4	-3	G5	S5
Poaceae	<i>Bromus inermis</i>	Smooth Brome	0	5	G4G5	SE5
Aceraceae	<i>Acer saccharum</i>	Sugar Maple	4	3	G5	S5
Rosaceae	<i>Agrimonia gryposepala</i>	Tall Agrimony	2	2	G5	S5
Ranunculaceae	<i>Ranunculus acris</i>	Tall Buttercup	0	-2	G5	SE5
Caprifoliaceae	<i>Lonicera tatarica</i>	Tartarian Honeysuckle	0	3	G?	SE5

**Appendix B: Vascular Plants Species List**

Family	Scientific Name	Common Name	CC	CW	GRANK	SRANK
Salicaceae	<i>Populus tremuloides</i>	Trembling Aspen	2	0	G5	S5
Oxalidaceae	<i>Oxalis stricta</i>	Upright Yellow Wood-sorrel	0	3	G5	S5
Violaceae	<i>Viola</i> sp.	Violet species				
Vitaceae	<i>Parthenocissus quinquefolia</i>	Virginia Creeper	6	1	G5	S4?
Oleaceae	<i>Fraxinus americana</i>	White Ash	4	3	G5	S5
Ranunculaceae	<i>Actaea pachypoda</i>	White Baneberry	6	5	G5	S5
Pinaceae	<i>Picea glauca</i>	White Spruce	6	3	G5	S5
Melanthiaceae	<i>Trillium grandiflorum</i>	White Trillium	5	5	G5	S5
Lamiaceae	<i>Clinopodium vulgare</i>	Wild Basil	4	5	G?	S5
Apiaceae	<i>Daucus carota</i>	Wild Carrot	0	5	G?	SE5
Caprifoliaceae	<i>Triosteum aurantiacum</i>	Wild Coffee	7	5	G5	S5
Aristolochiaceae	<i>Asarum canadense</i>	Wild Ginger	6	5	G5	S5
Amaryllidaceae	<i>Allium tricoccum</i>	Wild Leek	7	2	G5	S5
Rosaceae	<i>Rubus idaeus</i>	Wild Red Raspberry	0	5	G5	SE1
Araliaceae	<i>Aralia nudicaulis</i>	Wild Sarsaparilla	4	3	G5	S5
Ranunculaceae	<i>Anemone quinquefolia</i>	Wood Anemone	7	0	G5	S5
Rosaceae	<i>Geum urbanum</i>	Wood Avens	0	5	G5	SE2
Liliaceae	<i>Erythronium americanum</i>	Yellow Trout Lily	5	5	G5	S5

## **PLANT LIST LEGEND**

### **Scientific Name, Common Name and Family**

Based on Vascan (Dec. 2017) and NHIC (Dec. 16 2018)

Vascan: <http://data.canadensys.net/vascan/search>

NHIC: [http://www.sse.gov.on.ca/sites/MNR-PublicDocs/EN/ProvincialServices/Ontario\\_Vascular\\_Plants.xlsx](http://www.sse.gov.on.ca/sites/MNR-PublicDocs/EN/ProvincialServices/Ontario_Vascular_Plants.xlsx)

### **<sup>1</sup> Coefficient of Conservatism, Coefficient of Wetness, Weediness, and Physiology/Habit**

Oldham, M. J., W. D. Bakowsky and D. A. Sutherland. 1995. Floristic Quality Assessment System for Southern Ontario. Natural Heritage Information Centre, Ministry of Natural Resources. Peterborough, Ontario.

NHIC: [http://www.sse.gov.on.ca/sites/MNR-PublicDocs/EN/ProvincialServices/Ontario\\_Vascular\\_Plants.xlsx](http://www.sse.gov.on.ca/sites/MNR-PublicDocs/EN/ProvincialServices/Ontario_Vascular_Plants.xlsx)

CC and CW values reflect updates by NHIC, current as of Dec. 16, 2018).

CC: Coefficient of Conservatism. Rank of 0 to 10 based on plants degree of fidelity to a range of synecological parameters: (0-3) Taxa found in a variety of plant communities; (4-6) Taxa typically associated with a specific plant community but tolerate moderate disturbance; (7-8) Taxa associated with a plant community in an advanced successional stage that has undergone minor disturbance; (9-10) Taxa with a high fidelity to a narrow range of synecological parameters.

CW: Coefficient of Wetness. Value between 5 and -5. A value of -5 is assigned to Obligate Wetland (OBL) and 5 to Obligate Upland (UPL), with intermediate values assigned to the remaining categories.

Weediness: Weediness Score, assigned to all non-native species and range from -1 (low impact of the species on natural areas) to -3 (high impact of the species on natural areas).

Habit: Physiology/Habit. The growth form of the species (e.g. forb, shrub, tree).

### **<sup>2</sup> OWES Wetland Plant List**

Ontario Ministry of Natural Resources. 2013. Ontario Wetland Evaluation System Southern Manual. 3rd Edition, Version 3.3

Ontario Ministry of Natural Resources. 2013. Ontario Wetland Evaluation System Northern Manual. 1st Edition, Version 1.3

Species presence or absence on the Ontario Wetland Evaluation System (OWES) Wetland Plant List.

Codes are defined as follows:

X: Present on the list

### **<sup>3</sup> G-Rank (Global)**

Global Status from Nature Serve (via NHIC, Dec. 16, 2018)

NS: <http://explorer.natureserve.org/>

NHIC: [http://www.sse.gov.on.ca/sites/MNR-PublicDocs/EN/ProvincialServices/Ontario\\_Vascular\\_Plants.xlsx](http://www.sse.gov.on.ca/sites/MNR-PublicDocs/EN/ProvincialServices/Ontario_Vascular_Plants.xlsx)

Global ranks are assigned by a consensus of the network of Conservation Data Centres (CDCs), scientific experts, and the Nature Conservancy to designate a rarity rank based on the range-wide status of a species, subspecies, or variety.

#### Global (G) Conservation Status Ranks

- G1: Critically Imperiled - At very high risk of extinction or elimination due to very restricted range, very few populations or occurrences, very steep declines, very severe threats, or other factors.
- G2: Imperiled - at high risk of extinction or elimination due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.
- G3: Vulnerable - At moderate risk of extinction or elimination due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.
- G4: Apparently Secure - At fairly low risk of extinction or elimination due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.
- G5: Secure - At very low risk of extinction or elimination due to a very extensive range, abundant populations or occurrences, and little to no concern from declines or threats.
- G#G#: Range Rank – A numeric range rank (e.g., G2G3, G1G3) is used to indicate the range of uncertainty about the exact status of a taxon or ecosystem type. Ranges cannot skip more than two ranks (e.g., GU should be used rather than G1G4).
- GX: Presumed Extinct - Not located despite intensive searches and virtually no likelihood of rediscovery.
- GH: Possibly Extinct - Known from only historical occurrences but still some hope of rediscovery. Examples of evidence include (1) that a species has not been documented in approximately 20-40 years despite some searching and/or some evidence of significant habitat loss or degradation; (2) that a species has been searched for unsuccessfully, but not thoroughly enough to presume that it is extinct or eliminated throughout its range.
- GU: Unrankable – Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
- GNR: Unranked – Global rank not yet assessed.
- GNA: Not Applicable – A conservation status rank is not applicable because the species is not a suitable target for conservation activities. A global conservation status rank may be not applicable for several reasons, related to its relevance as a conservation target. For species, typically the species is a hybrid without conservation value, or of domestic origin. For ecosystems, the type is typically non-native (e.g, many ruderal vegetation types), agricultural (e.g. pasture, orchard) or developed (e.g. lawn, garden, golf course).
- ?: Inexact Numeric Rank – Denotes inexact numeric rank; this should not be used with any of the Variant Global Conservation Status Ranks or GX or GH.
- T#: Intraspecific Taxon (trinomial) - The status of intraspecific taxa (subspecies or varieties) are indicated by a "T-rank" following the species' global rank. Rules for assigning T-ranks follow the same principles outlined above. For example, the global rank of a critically imperiled subspecies of an otherwise widespread and common species would be G5T1. A T subrank cannot imply the subspecies or

variety is more abundant than the species, for example, a G1T2 subrank should not occur. A vertebrate animal population (e.g., listed under the U.S. Endangered Species Act or assigned candidate status) may be tracked as an infraspecific taxon and given a T rank; in such cases a Q is used after the T-rank to denote the taxon's informal taxonomic status.

- Q: Questionable taxonomy that may reduce conservation priority – Distinctiveness of this entity as a taxon or ecosystem type at the current level is questionable; resolution of this uncertainty may result in change from a species to a subspecies or hybrid, or inclusion of this taxon or type in another taxon or type, with the resulting taxon having a lower priority (numerically higher) conservation status rank. The "Q" modifier is only used at a global level and not at a national or subnational level.
- C: Captive or Cultivated Only – Taxon or ecosystem at present is presumed or possibly extinct or eliminated in the wild across their entire native range but is extant in cultivation, in captivity, as a naturalized population (or populations) outside their native range, or as a reintroduced population or ecosystem restoration, not yet established. The "C" modifier is only used at a global level and not at a national or subnational level. Possible ranks are GXC or GHC. This is equivalent to "Extinct" in the Wild (EW) in IUCN's Red List terminology (IUCN 2001).

#### **<sup>4</sup> S-Ranks (Provincial)**

Provincial Status from the NHIC (Dec. 16, 2018)

NHIC: [http://www.sse.gov.on.ca/sites/MNR-PublicDocs/EN/ProvincialServices/Ontario\\_Vascular\\_Plants.xlsx](http://www.sse.gov.on.ca/sites/MNR-PublicDocs/EN/ProvincialServices/Ontario_Vascular_Plants.xlsx)

Provincial (or Subnational) ranks are used by the Natural Heritage Information Centre (NHIC) to set protection priorities for rare species and natural communities. These ranks are not legal designations. Provincial ranks are assigned in a manner similar to that described for global ranks, but consider only those factors within the political boundaries of Ontario.

- S1: Critically Imperiled – At very high risk of extirpation in the jurisdiction due to very restricted range, very few populations or occurrences, very steep declines, severe threats, or other factors.
- S2: Imperiled – At high risk of extirpation in the jurisdiction due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.
- S3: Vulnerable – At moderate risk of extirpation in the jurisdiction due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.
- S4: Apparently Secure – At a fairly low risk of extirpation in the jurisdiction due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.
- S5: Secure – At very low or no risk of extirpation in the jurisdiction due to a very extensive range, abundant populations or occurrences, with little to no concern from declines or threats.
- S#S#: Range Rank – A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).
- SX: Presumed Extirpated – Species or ecosystem is believed to be extirpated from the jurisdiction (province). Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered. [equivalent to "Regionally Extinct" in IUCN Red List terminology]
- SH: Possibly Extirpated (Historical) – Known from only historical records but still some hope of rediscovery. There is evidence that the species or ecosystem may no longer be present in the jurisdiction, but not enough to state this with certainty. Examples of such evidence include (1) that a species has not been documented in approximately 20-40 years despite some searching and/or some

evidence of significant habitat loss or degradation; (2) that a species or ecosystem has been searched for unsuccessfully, but not thoroughly enough to presume that it is no longer present in the jurisdiction.

SNR:	Unranked – subnational conservation status not yet assessed.
SU:	Unrankable – Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
SNA:	Not Applicable – A conservation status rank is not applicable because the species is not a suitable target for conservation activities (e.g., long distance aerial and aquatic migrants, hybrids without conservation value, and non-native species).
?:	Inexact or Uncertain - Denotes inexact or uncertain numeric rank.
T#:	Intraspecific Taxon (trinomial) - The status of intraspecific taxa (subspecies or varieties) are indicated by a "T-rank" following the species' global rank. Rules for assigning T-ranks follow the same principles outlined above. For example, the subnational rank of a critically imperiled subspecies of an otherwise widespread and common species would be S5T1. A T subrank cannot imply the subspecies or variety is more abundant than the species, for example, a S1T2 subrank should not occur. A vertebrate animal population may be tracked as an intraspecific taxon and given a T rank; in such cases a Q is used after the T-rank to denote the taxon's informal taxonomic status.

#### <sup>5</sup> COSEWIC (Committee on the Status of Endangered Wildlife in Canada)

The federal review process is implemented by COSEWIC (Status as of Dec. 2018)

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) is an independent advisory panel to the Minister of Environment and Climate Change Canada that meets twice a year to assess the status of wildlife species at risk of extinction.

<https://www.canada.ca/en/environment-climate-change/services/committee-status-endangered-wildlife.html>

EXT:	Extinct – A species that no longer exists.
EXP:	Extirpated – A species no longer existing in the wild in Canada, but occurring elsewhere.
END:	Endangered – A species facing imminent extirpation or extinction.
THR:	Threatened – A species likely to become endangered if limiting factors are not reversed.
SC:	Special Concern – A species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.
NAR:	Not At Risk – A species that has been evaluated and found to be not at risk of extinction given the current circumstances.
DD:	Data Deficient – Available information is insufficient (a) to resolve a species' eligibility for assessment or (b) to permit an assessment of the species' risk of extinction.

#### <sup>6</sup> SARA (Species at Risk Act) Status and Schedule

Federal status from the Government of Canada's Species at Risk Public Registry (Status as of Dec. 2018)

<http://www.registrelep-sararegistry.gc.ca/>



The Act establishes Schedule 1, as the official list of species at risk in Canada. It classifies those species as being either Extirpated, Endangered, Threatened, or a Special Concern. Once listed, the measures to protect and recover a listed species are implemented. However, please note that while Schedule 1 lists species that are extirpated, endangered, threatened and of special concern, the prohibitions do not apply to species of special concern.

EXT:	Extinct – A species that no longer exists.
EXP:	Extirpated – A species that no longer exists in the wild in Canada, but exists elsewhere in the wild.
END:	Endangered – A species that is facing imminent extirpation or extinction.
THR:	Threatened – A species likely to become endangered if limiting factors are not reversed.
SC:	Special Concern – A species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.

#### **<sup>7</sup> SARO (Species At Risk in Ontario)**

Provincial status from MNRF (Status as of Dec. 2018)

<https://www.ontario.ca/environment-and-energy/species-risk-ontario-list>

The provincial review process is implemented by the MNR's Committee on the Status of Species at Risk in Ontario (COSSARO). COSSARO is an independent advisory panel to the Ontario Ministry of Natural Resources and Forestry that assesses the status of species at risk of extinction.

EXP:	Extirpated – Lives somewhere in the world, and at one time lived in the wild in Ontario, but no longer lives in the wild in Ontario.
END:	Endangered – Lives in the wild in Ontario but is facing imminent extinction or extirpation.
THR:	Threatened – Lives in the wild in Ontario, is not endangered, but is likely to become endangered if steps are not taken to address factors threatening it.
SC:	Special Concern – Lives in the wild in Ontario, is not endangered or threatened, but may become threatened or endangered due to a combination of biological characteristics and identified threats.

**Appendix B: Birds Species List**

Family	Scientific Name	Common Name	Grank	Srank	COSEWIC	COSSARO	Breeding
Corvidae	<i>Corvus brachyrhynchos</i>	American Crow	G5	S5B	-	-	POSS
Fringillidae	<i>Carduelis tristis</i>	American Goldfinch	G5	S5B	-	-	PROB
Parulidae	<i>Setophaga ruticilla</i>	American Redstart	G5	S5B	-	-	PROB
Turdidae	<i>Turdus migratorius</i>	American Robin	G5	S5B	-	-	PROB
Icteridae	<i>Icterus galbula</i>	Baltimore Oriole	G5	S4B	-	-	POSS
Parulidae	<i>Mniotilta varia</i>	Black-and-white Warbler	G5	S5B	-	-	PROB
Paridae	<i>Poecile atricapillus</i>	Black-capped Chickadee	G5	S5	-	-	PROB
Corvidae	<i>Cyanocitta cristata</i>	Blue Jay	G5	S5	-	-	POSS
Icteridae	<i>Dolichonyx oryzivorus</i>	Bobolink	G5	S4B	THR	THR	PROB
Certhiidae	<i>Certhia americana</i>	Brown Creeper	G5	S5B	-	-	POSS
Mimidae	<i>Toxostoma rufum</i>	Brown Thrasher	G5	S4B	-	-	POSS
Icteridae	<i>Molothrus ater</i>	Brown-headed Cowbird	G5	S4B	-	-	PROB
Bombycillidae	<i>Bombycilla cedrorum</i>	Cedar Waxwing	G5	S5B	-	-	POSS
Emberizidae	<i>Spizella passerina</i>	Chipping Sparrow	G5	S5B	-	-	PROB
Icteridae	<i>Quiscalus quiscula</i>	Common Grackle	G5	S5B	-	-	PROB
Corvidae	<i>Corvus corax</i>	Common Raven	G5	S5	-	-	NONE
Parulidae	<i>Geothlypis trichas</i>	Common Yellowthroat	G5	S5B	-	-	POSS
Picidae	<i>Picoides pubescens</i>	Downy Woodpecker	G5	S5	-	-	POSS
Tyrannidae	<i>Tyrannus tyrannus</i>	Eastern Kingbird	G5	S4B	-	-	PROB
Icteridae	<i>Sturnella magna</i>	Eastern Meadowlark	G5	S4B	THR	THR	POSS
Tyrannidae	<i>Sayornis phoebe</i>	Eastern Phoebe	G5	S5B	-	-	PROB
Tyrannidae	<i>Contopus virens</i>	Eastern Wood-Pewee	G5	S4B	SC	SC	PROB
Sturnidae	<i>Sturnus vulgaris</i>	European Starling	G5	SNA	-	-	CONF
Emberizidae	<i>Spizella pusilla</i>	Field Sparrow	G5	S4B	-	-	POSS
Mimidae	<i>Dumetella carolinensis</i>	Gray Catbird	G5	S4B	-	-	POSS
Ardeidae	<i>Ardea herodias</i>	Great Blue Heron	G5	S5	-	-	NONE
Tyrannidae	<i>Myiarchus crinitus</i>	Great Crested Flycatcher	G5	S4B	-	-	PROB
Picidae	<i>Picoides villosus</i>	Hairy Woodpecker	G5	S5	-	-	POSS
Passeridae	<i>Passer domesticus</i>	House Sparrow	G5	SNA	-	-	PROB
Troglodytidae	<i>Troglodytes aedon</i>	House Wren	G5	S5B	-	-	PROB
Cardinalidae	<i>Passerina cyanea</i>	Indigo Bunting	G5	S4B	-	-	POSS
Charadriidae	<i>Charadrius vociferus</i>	Killdeer	G5	S5B, S5N	-	-	PROB
Columbidae	<i>Zenaidura macroura</i>	Mourning Dove	G5	S5	-	-	POSS
Parulidae	<i>Geothlypis philadelphia</i>	Mourning Warbler	G5	S4B	-	-	POSS
Parulidae	<i>Oreothlypis ruficapilla</i>	Nashville Warbler	G5	S5B	-	-	POSS
Cardinalidae	<i>Cardinalis cardinalis</i>	Northern Cardinal	G5	S5	-	-	PROB
Picidae	<i>Colaptes auratus</i>	Northern Flicker	G5	S4B	-	-	POSS
Parulidae	<i>Seiurus aurocapilla</i>	Ovenbird	G5	S4B	-	-	PROB
Sittidae	<i>Sitta canadensis</i>	Red-breasted Nuthatch	G5	S5	-	-	POSS
Vireonidae	<i>Vireo olivaceus</i>	Red-eyed Vireo	G5	S5B	-	-	PROB
Icteridae	<i>Agelaius phoeniceus</i>	Red-winged Blackbird	G5	S4	-	-	POSS
Laridae	<i>Larus delawarensis</i>	Ring-billed Gull	G5	S5B, S4N	-	-	NONE

**Appendix B: Birds Species List**

Family	Scientific Name	Common Name	Grank	Srank	COSEWIC	COSSARO	Breeding
Columbidae	<i>Columba livia</i>	Rock Pigeon	G5	SNA	-	-	NONE
Mimidae	<i>Pheucticus ludovicianus</i>	Rose-breasted Grosbeak	G5	S4B	-	-	PROB
Emberizidae	<i>Passerculus sandwichensis</i>	Savannah Sparrow	G5	S4B	-	-	CONF
Emberizidae	<i>Melospiza melodia</i>	Song Sparrow	G5	S5B	-	-	CONF
Cathartidae	<i>Cathartes aura</i>	Turkey Vulture	G5	S5B	-	-	NONE
Vireonidae	<i>Vireo gilvus</i>	Warbling Vireo	G5	S5B	-	-	PROB
Sittidae	<i>Sitta carolinensis</i>	White-breasted Nuthatch	G5	S5	-	-	POSS
Phasianidae	<i>Meleagris gallopavo</i>	Wild Turkey	G5	S5	-	-	POSS
Turdidae	<i>Hylocichla mustelina</i>	Wood Thrush	G5	S4B	THR	SC	POSS
Parulidae	<i>Setophaga petechia</i>	Yellow Warbler	G5	S5B	-	-	PROB
Parulidae	<i>Dendroica coronata</i>	Yellow-rumped Warbler	G5	S5B	-	-	POSS

**Appendix B: Incidental Wildlife Species List**

Family	Scientific Name	Common Name	Grank	Srank	COSEWIC	SARO
Hylidae	<i>Pseudacris crucifer</i>	Spring Peeper	G5	S5	-	-
Ranidae	<i>Lithobates sylvaticus</i>	Wood Frog	G5	S5	-	-
Bufonidae	<i>Anaxyrus americanus</i>	American Toad	G5	S5	-	-
Hylidae	<i>Hyla versicolor</i>	Gray Treefrog	G5	S5	-	-
Ranidae	<i>Lithobates clamitans</i>	Green Frog	G5	S5	-	-
Sciuridae	<i>Tamiasciurus hudsonicus</i>	Red Squirrel	G5	S5	-	-
Sciuridae	<i>Tamias striatus</i>	Eastern Chipmunk	G5	S5	-	-
Pieridae	<i>Pieris rapae</i>	Cabbage White	G5	SNA	-	-
Papilionidae	<i>Papilio polyxenes</i>	Black Swallowtail	G5	S5	-	-
Lycaenidae	<i>Celastrina lucia</i>	Lucia Azure	G5	S5	-	-
Nymphalidae	<i>Coenonympha tullia</i>	Common Ringlet	G5	S5	-	-
Libellulidae	<i>Sympetrum obtrusum</i>	White-faced Meadowhawk	G5	S5	-	-

# APPENDIX

C

SAR AND SCC  
SCREENING TABLES

Species	ESA Status <sup>1</sup> and Regional Occurrence	ESA Protection <sup>2</sup>	Source of Record (Date)	Key Habitats Used by Species in Ontario	Reasonable Likelihood of Presence in Study Area	Surveys Undertaken	Results of Field Surveys	Likelihood and Magnitude of Impacts to Species or Habitat
Birds								
Bank Swallow ( <i>Riparia riparia</i> )	THR	Species and General Habitat Protection	OBBA	It nests in a wide variety of naturally and anthropogenically created vertical banks, which often erode and change over time including aggregate pits and the shores of large lakes and rivers (MNRF Guelph - Waterloo List, 2014)	<b>Moderate</b> - while suitable breeding habitat was not identified on the subject property, the species may migrate through the subject property.	2 Breeding Bird Surveys / SAR Habitat Assessments	No observations	<b>None</b> -- no suitable breeding habitat in study area.
Barn Swallow ( <i>Hirundo rustica</i> )	THR	Species and General Habitat Protection	OBBA	prefers farmland; lake/river shorelines; wooded clearings; urban populated areas; rocky cliffs; and wetlands. They nest inside or outside buildings; under bridges and in road culverts; on rock faces and in caves etc. (MNRF Guelph - Waterloo List, 2014)	<b>High</b> - species may find foraging habitat at the subject property.	2 Breeding Bird Surveys / SAR Habitat Assessments	No observations	<b>Minimal</b> - no suitable breeding structures identified on subject property, though species may breed in the surrounding area.
Bobolink ( <i>Dolichonyx oryzivorus</i> )	THR	Species and General Habitat Protection	NHIC (Last observed in 2004)	Generally prefers open grasslands and hay fields. In migration and in winter uses freshwater marshes and grasslands (MNRF Guelph - Waterloo List, 2014)	<b>High</b> - suitable breeding habitat was identified on the subject property, and the subject property is suitable during migration due to the presence of open field habitat.	2 Breeding Bird Surveys / SAR Habitat Assessments	Singing male present during each Breeding Bird Survey. During both surveys one singing male was noted within the hedgerow on the eastern edge of the subject property.	<b>High</b> - suitable breeding habitat on subject property.
Canada Warbler ( <i>Cardellina canadensis</i> )	SC	N/A	OBBA	Generally prefers wet coniferous, deciduous and mixed forest types, with a dense shrub layer. Nests on the ground, on logs or hummocks, and uses dense shrub layer to conceal the nest (MNRF Guelph - Waterloo List, 2014)	<b>Moderate</b> - while suitable breeding habitat was not identified on the subject property, the species may migrate through the subject property.	2 Breeding Bird Surveys / SAR Habitat Assessments	No observations	<b>None</b> -- no suitable breeding habitat in study area.
Chimney Swift ( <i>Chaetura pelagica</i> )	THR	Species and General Habitat Protection	OBBA	Historically found in deciduous and coniferous, usually wet forest types, all with a well-developed, dense shrub layer; now most are found in urban areas in large uncapped chimneys (MNRF Guelph - Waterloo List, 2014)	<b>Moderate</b> - while suitable breeding habitat was not identified on the subject property, the species may migrate through the subject property.	2 Breeding Bird Surveys / SAR Habitat Assessments	No observations	<b>None</b> - no suitable breeding habitat on subject property.
Common Nighthawk ( <i>Chordeiles minor</i> )	SC	N/A	OBBA	Generally prefer open, vegetation-free habitats, including dunes, beaches, recently harvested forests, burnt-over areas, logged areas, rocky outcrops, rocky barrens, grasslands, pastures, peat bogs, marshes, lakeshores, and river banks. This species also inhabits mixed and coniferous forests. Can also be found in urban areas (nest on flat roof-tops) (MNRF Guelph - Waterloo List, 2014)	<b>Moderate</b> - while suitable breeding habitat was not identified on the subject property, the species may migrate through the subject property.	2 Breeding Bird Surveys / SAR Habitat Assessments	No observations	<b>None</b> - no suitable breeding habitat on subject property.
Eastern Meadowlark ( <i>Sturnella magna</i> )	THR	Species and General Habitat Protection	OBBA	Generally prefers grassy pastures, meadows and hay fields. Nests are always on the ground and usually hidden in or under grass clumps (MNRF Guelph - Waterloo List, 2014)	<b>High</b> - suitable breeding habitat was identified on the subject property, and the subject property is suitable during migration due to the presence of open field habitat.	2 Breeding Bird Surveys / SAR Habitat Assessments	One individual observed in suitable nesting habitat during each Breeding Bird Survey. During both surveys one individual noted within the agricultural field on the subject property.	<b>High</b> - suitable breeding habitat on subject property.
Eastern Whip-poor-will ( <i>Caprimulgus vociferus</i> )	THR	Species and General Habitat Protection	OBBA	Generally prefer semi-open deciduous forests or patchy forests with clearings; areas with little ground cover are also preferred; In winter they occupy primarily mixed woods near open areas (MNRF Guelph - Waterloo List, 2014)	<b>Moderate</b> - open, patchy forest with clearings was not identified on the subject property, though the species may migrate through the subject property.	2 Breeding Bird Surveys / SAR Habitat Assessments, evening Amphibian Calling surveys	No observations	<b>None</b> - ideal breeding habitat was not identified on the subject property and the species was not encountered during nocturnal Amphibian Calling surveys.

Species	ESA Status <sup>1</sup> and Regional Occurrence	ESA Protection <sup>2</sup>	Source of Record (Date)	Key Habitats Used by Species in Ontario	Reasonable Likelihood of Presence in Study Area	Surveys Undertaken	Results of Field Surveys	Likelihood and Magnitude of Impacts to Species or Habitat
Eastern Wood-pewee (Contopus virens)	SC	N/A	OBBA	Associated with deciduous and mixed forests. Within mature and intermediate age stands it prefers areas with little understory vegetation as well as forest clearings and edges (MNRF Guelph - Waterloo List, 2014)	High - wooded and forested areas on and adjacent to the subject property provide potentially suitable habitat for this species.	2 Breeding Bird Surveys / SAR Habitat Assessments	Two singing males present during each Breeding Bird Survey. During the first survey singing males were noted approximately 30 m north of subject property; during the second survey males were observed in the northwest forested section of the property.	Moderate - tree removal is proposed on the subject property. Individuals were not observed over most of the subject property and suitable similar forested habitat is found to the north and east.
Golden-winged Warbler (Vermivora chrysoptera)	SC	N/A	OBBA	Generally prefer areas of early successional vegetation, found primarily on field edges, hydro or utility right-of-ways, or recently logged areas (MNRF Guelph - Waterloo List, 2014)	Moderate - while suitable breeding habitat was not identified on the subject property, the species may migrate through the subject property.	2 Breeding Bird Surveys / SAR Habitat Assessments	No observations	Moderate - individuals were not observed on the subject property and suitable similar field edge habitat is found in the area.
Grasshopper Sparrow (Ammodramus savannarum)	SC	N/A	MNRF (2019)	Medium to large grasslands with grasses of intermediate height in both native and tame grasslands including agricultural fields and cattle pastures (COSEWIC 2013b)	Moderate - while suitable breeding habitat was not identified on the subject property, the species may migrate through the subject property.	2 Breeding Bird Surveys / SAR Habitat Assessments	No observations	Moderate - individuals were not observed on the subject property and suitable similar field edge habitat is found in the area.
Red-headed Woodpecker (Melanerpes erythrocephalus)	SC	N/A	OBBA	Generally prefer open oak and beech forests, grasslands, forest edges, orchards, pastures, riparian forests, roadsides, urban parks, golf courses, cemeteries, as well as along beaver ponds and brooks (MNRF Guelph - Waterloo List, 2014)	Moderate - while suitable breeding habitat was not identified on the subject property, the species may migrate through the subject property.	2 Breeding Bird Surveys / SAR Habitat Assessments	No observations	None - no suitable breeding habitat on subject property.
Wood Thrush (Hylocichla mustelina)	SC	N/A	OBBA	Nests mainly in second-growth and mature deciduous and mixed forests, with saplings and well-developed understory layers. Prefers large forest mosaics, but may also nest in small forest fragments (MNRF Guelph - Waterloo List, 2014)	High - wooded and forested areas on and adjacent to the subject property provide potentially suitable habitat for this species.	2 Breeding Bird Surveys / SAR Habitat Assessments	One male was observed in the adjacent forested habitat north of the subject property.	Moderate - tree removal is proposed on the subject property. Individuals were not observed over most of the subject property and suitable similar forested habitat is found to the north and east.
Fish								
Redside Dace (Clinostomus elongatus)	END	Species Protection and Habitat Regulation	MNRF (2019)	Generally found in pools and slow-moving areas of small headwater streams with a moderate to high gradient (MNRF Guelph - Hamilton List, 2013).	None - there are no aquatic features that would provide suitable habitat for this species.	3 General Wildlife Surveys / SAR Habitat Assessment	No observations	None - no suitable habitat on subject property.
Insects								
Hungerford's Crawling Water Beetle (Brychius hungerfordi)	END	Species Protection and Habitat Regulation	MNRF (2019)	This beetle is found in small to medium-sized streams with cool, high quality, fast-flowing water, often immediately downstream from beaver dams, culverts and man-made barriers. As larvae, they may require a specific kind of algae (Dichotomosiphon) to eat. (MNRF Species Profile Online 2015)	None - there are no aquatic features that would provide suitable habitat for this species.	3 General Wildlife Surveys / SAR Habitat Assessment	No observations	None - no suitable habitat on subject property.
Monarch (Danaus plexippus)	SC	N/A	Thorold MNRF Regional List (2018)	Exist primarily wherever milkweed and wildflowers exist; abandoned farmland, along roadsides, and other open spaces (MNRF Guelph - Waterloo List, 2014)	High - this is a common species in southern Ontario and likely migrates and / or breeds on or adjacent to the subject property. Open field habitats are present on the subject property, although Common Milkweed was not identified.	3 General Wildlife Surveys / SAR Habitat Assessment	No observations	Moderate - the Contract documents will specify that disturbed areas shall be reseeded with a native wildflower mix including Milkweed species for breeding.
Mammals								
American Badger (Southwestern Ontario population) (Taxidea taxus jacksoni)	END	Species Protection and Habitat Regulation	MNRF (2019)	Generally prefer open habitats, whether natural (grasslands) or man-made (agricultural fields, road right-of-ways, golf courses)(MNRF Guelph - Waterloo List, 2014)	Low - this species is uncommon in the area; however, potentially suitable agricultural field and road right-of-way habitats are present.	3 General Wildlife Surveys / SAR Habitat Assessment	No observations	Minimal - no suitable dens identified on subject property, though species may breed in the surrounding area.



Species	ESA Status <sup>1</sup> and Regional Occurrence	ESA Protection <sup>2</sup>	Source of Record (Date)	Key Habitats Used by Species in Ontario	Reasonable Likelihood of Presence in Study Area	Surveys Undertaken	Results of Field Surveys	Likelihood and Magnitude of Impacts to Species or Habitat
Small-footed Bat (Myotis leibii)	END	Species and General Habitat Protection	Thorold MNRF Regional List (2018)	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius. Maternal Roosts: primarily under loose rocks on exposed rock outcrops, crevices and cliffs, and occasionally in buildings, under bridges and highway overpasses and under tree bark (MNRF Guelph - Waterloo List, 2014)	<b>Moderate</b> - this species may be found in the general vicinity of the subject property, and potentially suitable wooded and forested habitats are present.	3 General Wildlife Surveys / SAR Habitat Assessment	No observations	<b>Moderate</b> - tree removal is proposed on the subject property. Individuals were not observed on the subject property and suitable similar forested habitat is found to the north and east.
Little Brown Bat (Little Brown Myotis) (Myotis lucifugus)	END	Species and General Habitat Protection	Thorold MNRF Regional List (2018)	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius. Maternal Roosts: Often associated with buildings (attics, barns etc.). Occasionally found in trees (25-44 cm dbh) (MNRF Guelph - Waterloo List, 2014)	<b>Moderate</b> - this species may be found in the general vicinity of the subject property, and potentially suitable wooded and forested habitats are present.	3 General Wildlife Surveys / SAR Bat Habitat Assessment	No observations	<b>Moderate</b> - tree removal is proposed on the subject property. Individuals were not observed on the subject property and suitable similar forested habitat is found to the north and east.
Northern Long-eared Bat (Northern Myotis) (Myotis septentrionalis)	END	Species and General Habitat Protection	Thorold MNRF Regional List (2018)	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius. Maternal Roosts: Often associated with cavities of large diameter trees (25-44 cm dbh). Occasionally found in structures (attics, barns etc.)(MNRF Guelph - Waterloo List, 2014)	<b>Moderate</b> - this species may be found in the general vicinity of the subject property, and potentially suitable wooded and forested habitats are present.	3 General Wildlife Surveys / SAR Bat Habitat Assessment	No observations	<b>Moderate</b> - tree removal is proposed on the subject property. Individuals were not observed on the subject property and suitable similar forested habitat is found to the north and east.
Tri-colored Bat (Perimyotis subflavus)	END	Species and General Habitat Protection	Thorold MNRF Regional List (2018)	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius. Maternal Roosts: Manmade structures or tree cavities. Foraging over still water, rivers, or in forest gaps (COSEWIC 2013f)	<b>Moderate</b> - this species may be found in the general vicinity of the subject property, and potentially suitable wooded and forested habitats are present.	3 General Wildlife Surveys / SAR Bat Habitat Assessment	No observations	<b>Moderate</b> - tree removal is proposed on the subject property. Individuals were not observed on the subject property and suitable similar forested habitat is found to the north and east.
Molluscs								
Rainbow Mussel (Villosa iris )	SC	Species and General Habitat Protection	MNRF (2019)	Most abundant in shallow, well- oxygenated reaches of small- to medium-sized rivers and sometimes lakes, on substrates of cobble, gravel, sand and occasionally mud (MNRF Guelph - Wellington List 2015)	<b>None</b> - there are no aquatic features that would provide suitable habitat for this species.	3 General Wildlife Surveys / SAR Habitat Assessment	No observations	<b>None</b> - no suitable habitat on subject property.
Plants								
Butternut (Juglans cinerea)	END	Species and General Habitat Protection	Thorold MNRF Regional List (2018); NHIC (last observed in 2007)	Generally grows in rich, moist, and well-drained soils often found along streams. It may also be found on well-drained gravel sites, especially those made up of limestone. It is also found, though seldomly, on dry, rocky and sterile soils. In Ontario, the Butternut generally grows alone or in small groups in deciduous forests as well as in hedgerows (MNRF Guelph - Waterloo List, 2014).	<b>Moderate</b> - this species may be found in the general vicinity of the subject property, and potentially suitable wooded and forested habitats are present.	3 ELC / botanical inventory site visits	No observations	<b>None</b> - species was not identified on subject property.
American Hart’s-tonge Fern (Asplenium scolopendrium var. americanum)	SC	N/A	MNRF (2019); NHIC (Last observed in 1960)	This species grows on calcareous rocks in deep shade on slopes in deciduous forest, mostly on the Niagara Escarpment. Most Ontario occurrences are in maple-beech forest. Established plants can grow in exposed, rocky crevices and on outcrops, but moist, mossy areas seem to be essential for spore germination and early plant development (MECP, 2019).	<b>Minimal</b> - suitable calcareous rock not identified.	3 ELC / botanical inventory site visits	No observations	<b>None</b> - species was not identified on subject property.
Reptiles								
Eastern Ribbonsnake (aka. Northern Ribbonsnake) (Thamnophis sauritus septentrionalis)	SC	N/A	Thorold MNRF Regional List (2018)	Generally occur along the edges of shallow ponds, streams, marshes, swamps, or bogs bordered by dense vegetation that provides cover. Abundant exposure to sunlight is also required, and adjacent upland areas may be used for nesting (MNRF Guelph - Waterloo List, 2014)	<b>Minimal</b> - suitable wetlands were not identified on the subject property.	3 General Wildlife Surveys / SAR Habitat Assessment	No observations	<b>None</b> - no identified habitat on subject property.
Snapping Turtle (Chelydra serpentina)	SC	N/A	Thorold MNRF Regional List (2018)	Generally inhabit shallow waters where they can hide under the soft mud and leaf litter. Nesting sites usually occur on gravelly or sandy areas along streams. Snapping Turtles often take advantage of man-made structures for nest sites, including roads (especially gravel shoulders), dams and aggregate pits (MNRF Guelph - Waterloo List, 2014)	<b>Moderate</b> - Snapping Turtles are commonly found in the surrounding areas and the aquatic habitats in the eastern portion of the subject property may provide suitable habitat.	3 General Wildlife Surveys / SAR Habitat Assessment	No observations	<b>Minimal</b> - Snapping Turtles may wander onto the subject property; exclusion fencing and encounter protocols will be implemented to limit potential impacts to turtles encountered within the subject property during the active season.



Species	ESA Status <sup>1</sup> and Regional Occurrence	ESA Protection <sup>2</sup>	Source of Record (Date)	Key Habitats Used by Species in Ontario	Reasonable Likelihood of Presence in Study Area	Surveys Undertaken	Results of Field Surveys	Likelihood and Magnitude of Impacts to Species or Habitat
Midland Painted Turtle (Chrysemys picta marginata)	SC	N/A	ORAA	Painted Turtlesoccupy slow moving, relatively shallow and well-vegetated wetlands (e.g., swamps, marshes, ponds, fens, bogs, and oxbows) and water bodies (e.g., lakes, rivers, creeks, and streams) with abundant basking sites and organic substrate. These turtles are found in association with submergent aquatic plants, which are used for cover and feeding. The species is semi-tolerant of human-altered landscapes and may occasionally be found occupying urban ponds and lands subject to anthropogenic disturbance (e.g., farm ponds, impoundments, water treatment facilities). Suitable nesting habitat includes open, often south-facing, and sloped areas with sandy-loamy and/or gravel substrate usually within 1200 m of aquatic active season habitats. Painted Turtles overwinter in shallow water with deep sediment.	Moderate - Midland Painted Turtles are not commonly found in the surrounding areas; however, the aquatic habitats in the eastern portion of the subject property may provide suitable habitat.	3 General Wildlife Surveys / SAR Habitat Assessment	No observations	Minimal - Midland Painted Turtles may wander onto the subject property; exclusion fencing and encounter protocols will be implemented to limit potential impacts to turtles encountered within the subject property during the active season.

<sup>1</sup>ESA (Endangered Species Act) Status  
(provincial status from MNRF May 2014)

<sup>2</sup>ESA (Endangered Species Act) Protection  
(provincial status from MNRF May 2014)

<sup>3</sup>COSEWIC (Committee on the Status of Endangered Wildlife in Canada) (federal status from COSEWIC)

<sup>4</sup>SARA (Species at Risk Act) Status (federal status - listed)

# APPENDIX

D

CAVITY TREE DATA

Appendix D - Bat Habitat Assessment - Cavity Tree Data									Broos Subdivision			
Plot Number	Snag Description										Locations - UTM (Zone 17 T)	
	Cavity / Snag Number	Tree Species	Potential Roosting Habitat for Tri-coloured Bat Due to Tree Species? (Yes / No)	DBH (cm)	Height Class	Decay Class 1-3? (Yes/No)	Other Snag within 10m (Yes/No)	Snag Attributes	Max. Cavity Height (m)	Location/Comments	Easting	Northing
Little Brown Bat/Northern Myotis Potential												
B7	1	Sugar Maple	Yes	36.5	4	No	No	Loose bark, cavity, crack	2.7	0.4 to 2.5 m; 2.7 m to top. Open with decay. Photo 1-2	515289	4892561
B7	2	White Ash	No	31	2	Yes (3)	No	loose bark	2	frost crack with peeling bark 1.75 to 2 m. Photo 3-4	515281	4892578
B9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	mostly young, <10 DBH	N/A	N/A
B8	3	Sugar Maple	Yes	41	3	yes (2)	no	cavity, knot hole	5	knot hole angled upward at 5m. Branch with open cavity at 5m. Photo 5-8	515273	4892663

Appendix D - Bat Habitat Assessment - Cavity Tree Data										Broos Subdivision		
Plot Number	Snag Description										Locations - UTM (Zone 17 T)	
	Cavity / Snag Number	Tree Species	Potential Roosting Habitat for Tri-coloured Bat Due to Tree Species? (Yes / No)	DBH (cm)	Height Class	Decay Class 1-3? (Yes/No)	Other Snag within 10m (Yes/No)	Snag Attributes	Max. Cavity Height (m)	Location/Comments	Easting	Northing
B6	4	Sugar Maple	Yes	49	2	yes (2)	no	cavity, knot hole, loose bark	4	peeling bark with decay 2-4m, conk, cavity at 4m with used nest inside. Photo 9-11	515062	4892548
B6	5	Sugar Maple	Yes	21, 83	1	yes (1)	no	cavity, knot hole	2	2 knot holes/ broken branch with decay inside at 1.5 to 2m. Photo 12-14	515078	4892550
B10	6	American Beech	No	31	2	no	yes	knot hole	10	Knot hole at 10m with decay. Photo 15-17	5156027	4892599

Appendix D - Bat Habitat Assessment - Cavity Tree Data										Broos Subdivision		
Plot Number	Snag Description										Locations - UTM (Zone 17 T)	
	Cavity / Snag Number	Tree Species	Potential Roosting Habitat for Tri-coloured Bat Due to Tree Species? (Yes / No)	DBH (cm)	Height Class	Decay Class 1-3? (Yes/No)	Other Snag within 10m (Yes/No)	Snag Attributes	Max. Cavity Height (m)	Location/Comments	Easting	Northing
B10	7	American Beech	No	55.5	1	yes (1)	yes	cavity, knot hole	5	Knot hole at 5m. Wound with decay and compartmentalization. Peeling bark on branches. Photo 18-20./	515024	4892606
B10	8	American Beech	No	20	3	yes (2)	yes	cavity, crack	10	Frost crack at 10m with cavity. Photo 21-22	515030	4892610
B10	9	American Beech	No	19	4	no	yes	crack	6	Topped with cavity at 6m. Photo 23-25	515034	4892596

Appendix D - Bat Habitat Assessment - Cavity Tree Data									Broos Subdivision			
Plot Number	Snag Description									Location/Comments	Locations - UTM (Zone 17 T)	
	Cavity / Snag Number	Tree Species	Potential Roosting Habitat for Tri-coloured Bat Due to Tree Species? (Yes / No)	DBH (cm)	Height Class	Decay Class 1-3? (Yes/No)	Other Snag within 10m (Yes/No)	Snag Attributes	Max. Cavity Height (m)		Easting	Northing
B2	10	White Ash	No	30.5	2	Yes	yes	cavity	20	Small cavity 20 on canopy branch. Photo 26-28	515022	4892562
B2	11	White Ash	No	19	2	Yes	yes	cavity, crack	20	Crack with decay at 20m. Photo 29-31	515032	4892561
B2	12	American Beech	No	30	3	Yes	yes	crack	20	Crack at 20m, 50cm long. Photo 32-34	515026	4892556
B4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B3	14	Sugar Maple	Yes	30	3	Yes	yes	cavity	4.5	Large cavity 5x 10cm at 4.5m: goes upward. Photo 38-40	514948	4892623

Appendix D - Bat Habitat Assessment - Cavity Tree Data										Broos Subdivision		
Plot Number	Snag Description										Locations - UTM (Zone 17 T)	
	Cavity / Snag Number	Tree Species	Potential Roosting Habitat for Tri-coloured Bat Due to Tree Species? (Yes / No)	DBH (cm)	Height Class	Decay Class 1-3? (Yes/No)	Other Snag within 10m (Yes/No)	Snag Attributes	Max. Cavity Height (m)	Location/Comments	Easting	Northing
B3	15	Sugar Maple	Yes	23	4	Yes (2)	no	cavity	2	2 cavities/woodpecker holes at 2m in decayed crack. Topped. Photo 41-43	514950	4892610
B1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tri-coloured Bat Potential												
Plot Number	Cavity / Snag Number	Tree Species	Potential Roosting Habitat for Tri-coloured Bat Due to Tree Species? (Yes / No)	DBH (cm)	Dead / Dying Leaf Clusters?	Tree Status (Live/Dead)	Preferred Tree Species within 10m?	Other Locational Attributes	Location / Comments		Easting	Northing
B5	13	American Beech	No	25	Yes	Live	Yes		Squirrel's nest? Beech bark disease evidence. Photo 35-37		514989	4892574