

**APPENDIX E**

**Environmental Impact Study Report**



**REPORT**

**SCHEDULE C MUNICIPAL CLASS ENVIRONMENTAL  
ASSESSMENT DUFFERIN COUNTY ROAD 109 / 2ND  
LINE AMARANTH REALIGNMENT**  
*ENVIRONMENTAL IMPACT STUDY REPORT*

Submitted to:

**DUFFERIN COUNTY**

30 Centre Street,  
Orangeville, ON  
L9W 2X1

Submitted by:

**WSP Canada Inc.**

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221-08590-00

22 February 2024



## Distribution List

One Pdf Copy: Dufferin County

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February 22, 2024

Final

Dufferin County  
30 Centre Street,  
Orangeville, ON  
L9W 2X1

**Attention:** Scott Burns, P.Eng., C.E.T.

Dear Sir:

WSP Canada Inc. is pleased to provide you with our scoped Environmental Impact Study Report as part of a Schedule C Municipal Class Environmental Assessment Study (EA) in support of the realignment of Dufferin County Road 109 and 2<sup>nd</sup> Line Amaranth, in Dufferin County, Ontario.

This study has been scoped to focus on natural features within and adjacent to the preferred alternative. An assessment of the potential for negative impacts to natural features, recommendations for mitigation measures to help maintain the form and function these features, as well as commitments to further ecological studies for later project stages are provided.

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

Sincerely,

Sophie Gibbs  
Ecologist

Heather Drost  
Senior Ecologist

SG/HD/ld

WSP ref.: 221-08590-00

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## 1.0 INTRODUCTION

WSP Canada Inc. (WSP) was retained by Dufferin County to complete a Schedule C Municipal Class Environmental Assessment Study (EA) in support of the realignment of Dufferin County Road 109 and 2<sup>nd</sup> Line, in Dufferin County, Ontario. As part of a proposed development located near Dufferin County Road 109 and 2<sup>nd</sup> Line (Amaranth), 2<sup>nd</sup> Line is proposed to be realigned as the fourth leg of the Dufferin County Road 109 and Dufferin County Road 3 intersection. This realignment could impact other intersections, namely Dufferin County Road 3 and Dufferin County Road 23, which is less than 100m south of the Dufferin County Road 109 and Dufferin County Road 3 intersection. The EA is being conducted to determine the potential impacts of Dufferin County Road 109 and 2<sup>nd</sup> Line Amaranth realignment.

The purpose of this Environment Impact Study Report is to identify the potential impacts on natural environment features and functions associated with the preferred alternative and to provide recommended mitigation measures to avoid or mitigate these potential impacts. The Site is located north of Dufferin County Road 109 along the 2<sup>nd</sup> Line Amaranth and extends south of Dufferin County Road 109 between Dufferin County Road 3 and Dufferin County Road 23, and is currently a mixture of agricultural land and residential and industrial buildings with an area of approximately 26.3 hectares (65.1 acres). The Site is defined as the area directly within the footprint of the preferred alignment, and the Study Area is defined as 120 m around the Site, as depicted on Figures 1 and 2, **Appendix A**.

## 2.0 STUDY APPROACH

### 2.1 Agency Consultation

The Midhurst District Ministry of Natural Resources and Forestry (MNR) was contacted on December 21, 2022 to request information concerning significant species and designated natural features within or adjacent to the Study Area. As of the writing of this report, no response has been received.

The Ministry of the Environment, Conservation and Parks (MECP) was contacted on December 21, 2022 to request available Species at Risk (SAR) records within or adjacent to Study Area; an automated response was promptly received with no project specific natural heritage information. On February 21, 2023 a project-specific response was received requesting that Black Ash (*Fraxinus nigra*), Chimney Swift (*Chaetura pelagica*), Red-headed Woodpecker (*Melanerpes erythrocephalus*), and Canada Warbler (*Cardellina canadensis*) be included in the SAR assessment / screening.

Credit Valley Conservation (CVC) was contacted on December 21, 2022 to request available natural heritage information pertinent to the Study Area such as regulated areas or features of significance (e.g. wetlands, woodlands). Responses on January 17 and May 15 and October 17, 2023, facilitated a Data Sharing Agreement. Data provided included records of 10 bird species and three amphibian species during breeding seasons. The data is from the general project vicinity, through not necessarily within the Study Area. None of the species are listed as SAR under the provincial Endangered Species Act (ESA 2007) or the federal Species at Risk Act (SARA).

All records of agency liaison can be found in **Appendix B**.

### 2.2 Desktop and Background Data Review

The investigation of existing conditions in the Study Area included a background information search and review of online databases to gather data about the local area and provide context for the evaluation of the natural features, including the following:

- Natural Heritage Information Centre (NHIC) database (NHIC 2023)
- Land Information Ontario (LIO) geospatial data (MNR 2023a)
- Species at Risk Public Registry (Canada 2022)
- Species at Risk in Ontario (SARO) List (MNR 2023b)
- Breeding Bird Atlas of Ontario (OBBA) (Cadman et al. 2007)
- Atlas of the Mammals of Ontario (Dobbyn 1994)
- Ontario Reptile and Amphibian Atlas (Ontario Nature 2023)
- Bat Conservation International (BCI) range maps (BCI 2023)
- Ontario Butterfly Atlas (Jones et al. 2021)
- eBird species maps (eBird 2021)
- County of Dufferin Official Plan (Dufferin 2017)



- Official Plan for the Township of Amaranth (Township of Amaranth 2018)
- Official Plan for the Township of East Garafraxa (Township of East Garafraxa 2005)
- Town of Orangeville Official Plan (Town of Orangeville 2020)
- Aerial imagery

## 2.3 Field Surveys

A single reconnaissance-level site visit was conducted on October 11, 2022 to verify existing conditions within the entire Study Area, where accessible. On properties where access was not permitted (i.e., private lands), natural environment features, and functions were assessed from the edge of the Right-of-Way (ROW) or nearest permitted access point (i.e., public lands).

Plant communities on the Site and in the Study Area were first delineated at a desktop level using high resolution aerial imagery, then ground-truthed in the field (where accessible) using the Ecological Land Classification (ELC) system for southern Ontario (Lee et al. 1998) and ELC Ecosystem Catalogue: 2008 Version (Lee 2008), where applicable. This involved systematically traversing the Site and Study Area, where accessible, to ensure a thorough survey of species and communities. During the site visit, information on dominant plant species and plant community structure and composition was recorded in order to define the plant community polygons. A list of all plant species identified during the site visit is available in **Appendix C**, and representative site photographs can be found in **Appendix F**.

General wildlife surveys included general area searches, habitat assessment, documenting observations of tracks and sign, and incidental observations. The full range of habitats across the Study Area were searched, with special attention paid to edge habitats and other areas where mammals might be active. Areas of exposed substrate such as sand or mud were located and examined for any visible tracks. Any wildlife (including mammals, birds, butterflies, and dragonflies) seen and identified were recorded. When encountered, tracks and other signs (e.g., tracks, scats, hair, tree scrapes, etc.) were identified to species, if possible, and recorded.

In addition, suitable habitats for SAR assessed to have a moderate or high potential to be found in the Study Area based on the desktop screening were searched, and sightings or signs of any individuals were recorded. The location, condition, and approximate size of any potential SWH or SAR habitat was recorded in the field.

## 3.0 EXISTING CONDITIONS

### 3.1 Ecosystem Setting and Regional Context

The Study Area is located in Ecoregion 6E-7 (Oak Ridges Ecodistrict), which is underlain by Paleozoic bedrock and is characterized by mostly gently rolling to hilly landscape (Chapman and Putnam, 1972; Chapman and Putnam, 1984). The Study Area is within the Dundalk Till Plain physiographic region, which is comprised of drumlinized till plains, moraines, and glacial spillways (Chapman and Putnam, 1972; Chapman and Putnam, 1984). The ground surface in this till plain is undulating (CTC Source Protection Committee, 2019). Soils are primarily mineral-based fine-textured, well drained mineral material and dominated by Gray Brown Luvisols.

### 3.2 Surface Water Features

The Study Area is located entirely within the Credit River watershed.

There is one drainage feature located within the Study Area that flows into Mill Creek, outside of the Study Area. This drainage feature runs parallel to Dufferin County Road 109 on the south side of the road. Based upon aerial photo review, this drainage feature appears to be a portion of a storm water management system, and no water was observed during the site visit. Mill Creek is present approximately 500 m south and east of the Study Area.

### 3.3 Designated Natural Areas

Features identified as designated natural areas under municipal, provincial, or federal policy are described below. These features are illustrated on **Figure 1, Appendix A**.

Through agency consultation and the desktop and background data review the following features were identified as absent from the Study Area, and are not discussed further in this report: ANSIs, Significant Valleylands, Environmentally Sensitive Areas (ESAs), Provincial Parks, Provincially Significant Wetlands (PSWs), unevaluated wetlands, woodlands, Significant Woodlands, and natural heritage features identified under all three official plans with jurisdiction in the Study Area (listed in **Section 2.2**), including Environmental Protection area, and Natural Core areas and Linkages. One mapped feature, Protected Countryside within the Greenbelt Plan Area, falls within the Study Area, as discussed in the following section (Section 3.3.1).

#### 3.3.1 Greenbelt Plan Area

The purpose of the Greenbelt Plan is to focus population growth in designated Settlement Areas, to foster continued agriculture in designated Protected Countryside and to ensure on-going protection of natural environment features in the designated Natural Heritage System (NHS) (MMAH 2017).

New or expanded infrastructure approved under the EA process is permitted within the Protected Countryside, however the infrastructure must avoid Key Natural Heritage Features (KNHFs) and Key Hydrologic Features (KHF) unless a need is established and there is no reasonable alternative. Where development does intrude or result in loss of KNHFs or KHFs, the impacts and disturbance must be minimized. KNHFs of the Greenbelt Plan include habitat of endangered or threatened species, fish habitat, wetlands, life science ANSI, significant valleylands, significant woodlands, SWH, and rare plant communities (e.g., sand barrens, savannahs, tallgrass prairies and alvars). KHF include permanent or intermittent streams, lakes, seepage areas and springs, and wetlands. Outside of the Greenbelt NHS, KNHF are defined by, and subject to, the policies of the PPS (MMAH 2017).

The entire Study Area is within the Protected Countryside of the Greenbelt Plan area (**Figure 1, Appendix A**). No portion of the Study Area is located within the Greenbelt Plan NHS.

### 3.4 Flora and Vegetation Communities

The Study Area is dominated by active agriculture, fallow fields, regional and municipal roads and associated roadsides, cultural meadows and manicured residential areas with mown grass and planted landscape trees. Natural vegetation communities are present only outside of the 120m Study Area.

A total of 52 vascular plants were identified during the survey on October 11, 2022. Of the 52 identified species, 22 (42%) are native and 30 (58%) are non-native plant species. All the observed species are listed as G5 – G4 (secure to apparently secure nationally) and S5 – S4 (secure to apparently secure provincially). None of the observed species are listed as SAR under the ESA or SARA. One species, Purple-veined Willowherb (*Epilobium coloratum*), is considered regionally rare by CVC (Kaiser 2001). All vascular plants recorded are listed in the Vascular Plant List (**Appendix C**), and representative site photographs can be found in **Appendix F**.

Five vegetation units were delineated within the Study Area. All of these communities are common in Ontario (Bakowsky 1996 / NHIC). Each community is described briefly below. Vegetation communities are delineated on **Figure 2, Appendix A**.

- **Annual Row Crops (OAGM1):** The majority of the Study Area was active agriculture, more specifically Annual Row Crops. At the time of the single fall site visit, the fields had been harvested, and crop type was not evident. This cultural ecosite provides minimal habitat for native plants and wildlife.
- **Mineral Cultural Meadow (CUM1):** This vegetation unit consisted primarily of roadside vegetation typical of ROW areas. Ground layer species included early successional species such as Wild Carrot (*Daucus carota*), Annual Fleabane (*Erigeron annuus*), Grass-leaved Goldenrod (*Euthamia graminifolia*), Common Ragweed (*Ambrosia artemisiifolia*), Common Burdock (*Arctium minus*), Common Milkweed (*Asclepias syriaca*), Smooth Brome (*Bromus inermis*), Brown Knapweed (*Centaurea jacea*), Wild Chicory (*Cichorium intybus*), Canada Thistle (*Cirsium arvense*), Bull Thistle (*Cirsium vulgare*), Wild Strawberry (*Fragaria virginiana*), Smooth Bedstraw (*Galium mollugo*), Butter-and-eggs (*Linaria vulgaris*), Garden Bird's-foot Trefoil (*Lotus corniculatus*), White Sweet-clover (*Melilotus albus*), and Common Buttercup (*Ranunculus acris*). Woody vegetation was rare within this community. Given that this unit includes ROW ditches, it also contained low lying areas with some wetland-associated species, such as Purple-veined Willowherb, Red-osier Dogwood (*Cornus sericea*), and Reed Canarygrass (*Phalaris arundinacea* var. *arundinacea*). This unit was regularly subjected to anthropogenic disturbances, including ROW maintenance and indirect impacts such as salt-spray, and therefore contained a high proportion of invasive and disturbance-tolerant species.
- **Dry-Moist Old Field Meadow (CUM1-1):** This vegetation unit consisted of larger / wider fields, one of which is located in the western portion of Study Area north and south Dufferin County Road 109, and one of which is located southwest of Dufferin County Road 23. These units appear to be former farm residential properties with some evidence of demolished or derelict buildings. The ground layer of this meadow was dominated by grasses, specifically Common Timothy (*Phleum pratense*), Smooth Brome (*Bromus inermis*), and Reed Canarygrass, with a sparse mixture of forbs similar to those listed above, including frequent Common Milkweed. Although this unit was larger and less disturbed in its interior, many of the anthropogenic influences listed above were also present along its edge.

- **Residential (CRV):** This area consisted of single-family residential dwellings, with associated horticultural vegetation including mowed turfgrass.
- **Hedgerow (HR):** The hedgerow located along the west side of 2<sup>nd</sup> Line Amaranth directly north of Dufferin County Road 109 was composed of a narrow row of large, mature Sugar Maples (*Acer saccharum*).

### 3.5 Wildlife

As described above, the Study Area is primarily agricultural with little nature vegetation cover providing wildlife habitat. Habitat features present in the Study Area and broader landscape include agricultural fields, fallow fields, roadsides, residential areas, semi-natural features (e.g., cultural meadows, planted trees, and hedgerows). Habitats within the Study Area show varying levels of anthropogenic disturbance. The suite of wildlife species observed during the October 11, 2022 site visit was expected and typical of open field habitats. All of the wildlife species identified during the fall site visit are secure and common, widespread and abundant in Ontario and globally (S4 or S5; G4 or G5).

A total of nine bird species were observed, three of which are considered Species of Interest (CVC 2010): Ruby-crowned Kinglet (*Regulus calendula*), Golden-crowned Kinglet (*R. satrapa*), and Dark-eyed Junco (*Junco hyemalis*). Additionally, two species are considered Species of Urban Interest; American Kestrel (*Falco sparverius*), and Sharp-shinned Hawk (*Accipiter striatus*). One species is considered “area sensitive” according to SWH criteria schedules (MNR 2015): Sharp-shinned Hawk. Given the timing of the field survey (i.e., October) all bird individuals were observed during migration and therefore observations are not an indication of suitable breeding habitat. The full list of species observed are provided in **Appendix D**. In addition, potential breeding habitat for seven SAR birds was identified within the Study Area and is discussed further in **Section 3.7**.

No mammals were recorded in the Study Area during the field survey. However, the general area likely supports a range of mammals often found in similar habitats, including Raccoon (*Procyon lotor*), Eastern Chipmunk (*Tamias striatus*), Eastern Cottontail (*Sylvilagus floridanus*), Grey Squirrel (*Sciurus carolinensis*), Red Squirrel (*Tamiasciurus hudsonicus*) Groundhog (*Marmota monax*), Striped Skunk (*Mephitis mephitis*) and Red Fox (*Vulpes vulpes*), as well as a number of small mammals that often go undetected (e.g., shrews, voles, mice, bats).

No amphibian or reptile species were recorded in the Study Area during the single fall site visit. The Study Area may provide habitat for common species such as American Toad (*Anaxyrus americanus*) and Garter Snake, however no specialized habitat types were identified, including breeding or overwintering habitats. Data provided by CVC through a Data Sharing Agreement indicated the presence of three breeding amphibian species (American Toad, Gray Treefrog [*Dryophytes versicolor*], and Spring Peeper [*Pseudacris crucifer*]), however the breeding location provided is outside of the Study Area.

### 3.6 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 which are important to migratory or non-migratory species (MMAH, 2020). 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 (MMAH, 2020).

**APPENDIX A**

**Socio-Economic Memo**

**APPENDIX B**

**Agricultural Impact Assessment  
Report**

**APPENDIX C**

**Cultural Heritage Report**

**APPENDIX D**

**Stage 1 Archaeological  
Assessment Report**



**APPENDIX E**

**Environmental Impact Study Report**

**APPENDIX F**

**Tree Impact Memo and Tree  
Management Plan**

**APPENDIX G**

**Traffic Analysis Report**

**APPENDIX H**

**Drainage and Stormwater  
Management Report**

**APPENDIX I**

**Hydrogeological Assessment  
Report**

**APPENDIX J**

**Detailed Assessment and  
Evaluation Tables**

**APPENDIX K**

**Contamination Overview Study**

**APPENDIX L**

**Air Quality Impact Assessment  
Report**



**APPENDIX M**

**Noise Assessment Report**

**APPENDIX N**

**Preliminary Design Plan**

**APPENDIX O**

**Construction Staging**

**APPENDIX P**

**Consultation and Engagement  
Summary**

Guidelines and criteria for the identification of SWH are detailed in the Significant Wildlife Habitat: Technical Guide (OMNR, 2000), and the Significant Wildlife Habitat Criterion Schedule for Ecoregion 6E (OMNRF, 2015). SWH 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.

No SWH was identified within the Study Area during the field survey and no SWH is mapped by the province within the Study Area.

### 3.7 Species at Risk

For the purposes of this report, the term SAR refers to those species listed as Endangered, Threatened and Special Concern, listed on the Species at Risk in Ontario (SARO) List (Ontario Regulation 230/08) and protected under the ESA (2007). Species listed as Special Concern do not receive legal protection under the ESA; however, these are species that may become threatened or endangered because of a combination of biological characteristics and identified threats and therefore, are recommended to be included when assessing natural heritage impacts and mitigation measures.

Prior to WSP's site visit, a screening of SAR with potential to be present or use habitat within the Study Area vicinity was completed. The SAR screening table (**Appendix E**) incorporates background information collected from all sources, including agency consultation, as well as the results of the all in-field habitat assessments. The table lists SAR with potential to occur within the Study Area, habitat preferences for each species, an assessment of habitat within the Study Area and provides an assessment of the likelihood and magnitude of impacts to each species considering mitigation measures to be implemented.

The background information review generated a list of 17 potential SAR for the project vicinity. Those species that were considered to have 'moderate' to 'high' potential to occur in the Study Area were surveyed for during the site visit and habitat conditions were assessed in terms of potential suitability. The following nine SAR have 'moderate' to 'high' potential to be present or to use habitat in the Study Area based on habitat suitability: Barn Swallow (*Hirundo rustica*, Special Concern), Bank Swallow (*Riparia riparia*, Threatened), Red-headed Woodpecker (Endangered), Chimney Swift (Threatened) Grasshopper Sparrow (*Ammodramus savannarum*, Special Concern), Bobolink (Threatened), Eastern Meadowlark (Threatened), Monarch (*Danaus plexippus*, Special Concern), and Butternut (*Juglans cinerea*, Endangered). These species are each discussed below.

#### Barn Swallow (SC)

Barn Swallow is widespread in the broader landscape, and likely present within the Study Area during the breeding season (~May to September). Foraging habitat for this species is present over fields throughout the Study Area and there is possibility for this species to occur as foraging visitant. No individuals were observed, and no evidence of nesting habitat or active or past nesting activity was observed during the site visit.

**Bank Swallow (THR)**

There is potential for Bank Swallow to forage over fields throughout the Study Area. No potential eroding banks or anthropogenically created banks were observed during the site visit, additionally it is unlikely that nesting habitat is present out of sight within or adjacent to the Study Area.

**Red-headed Woodpecker (END)**

No individuals were observed, and no evidence of nesting habitat or active or past nesting activity was observed during the site visit. However, suitable nesting and foraging habitat is present the hedgerow that supports a number of mature Sugar Maple trees to the east of 2<sup>nd</sup> Line Amaranth .

**Chimney Swift (THR)**

There is potential for Chimney Swift to forage over fields throughout the Study Area. No potential chimneys or large hollow snags were observed during the site visit, however nesting habitat could be present in nearby downtown Orangeville, outside of the Study Area. No individuals were observed during the site visit.

**Grasshopper Sparrow (SC), Bobolink, and Eastern Meadowlark (THR)**

There is potential breeding, nesting and foraging habitat present for these three grassland bird species within the ~15 ha Dry-Moist Old Field Meadow (CUM1-1) communities located north and south of Dufferin County Road 109 west of 2<sup>nd</sup> Line Amaranth and Dufferin County Road 3, as depicted in Appendix A-2. No individuals were observed during the October field survey.

**Monarch (SC)**

No Monarch individuals were observed during the single fall site visit, however suitable breeding and foraging habitat is present within all cultural meadow communities. These communities support abundant flowering plants (foraging habitat), and occasional Common Milkweed (host plant). Although conditions are present for suitable habitat within the ROW, this habitat is not considered ideal due to the anthropogenic influences. The larger cultural meadow field supported a greater density of Common Milkweed, particularly north of Dufferin County Road 109, and may provide substantial breeding opportunity for the species.

**Butternut (END)**

No Butternut trees were observed during the site visit, however moderate quality potential habitat is present throughout the Study Area, and individuals are known to occur within the immediate vicinity of the Study Area. There is limited potential for Butternut to be present within 50 m of the Site, even where property access was not possible, as visibility from the ROW was mostly unhindered.

## 4.0 PROPOSED WORKS

The Recommended Plan includes the following modifications to the following existing roads:

- 2<sup>nd</sup> Line Amaranth will be realigned to form the fourth leg of the Dufferin County Road 109 and Dufferin County Road 3 intersection. The intersection will be converted from stop-controlled to a four-way signalized intersection.
- The existing Dufferin County Road 109 will be widened to four lanes (two in each direction) with right- and left-turn lanes eastbound and westbound.
- The existing Dufferin County Road 3 will be realigned to remove the channelized northbound right turn lane and to improve the intersection geometry;
- Dufferin County Road 23 will be realigned further south of the existing Dufferin County Road 23 to ensure the intersection of Dufferin County Road 3 and Dufferin County Road 23 does not conflict with the proposed four-legged intersection. In addition, realignment of Dufferin County Road 23 provides adequate left turn storage and taper for vehicles turning left from Dufferin County Road 3 onto Dufferin County Road 23
- As a result of realigning Dufferin County Road 23 to the south, the existing Paula Court will be extended further south to maintain a T-intersection with Dufferin County Road 23.

## 5.0 PRELIMINARY IMPACT ASSESSMENT

### 5.1 Vegetation

Based on the preferred alignment of the Dufferin County Road 109 and 2<sup>nd</sup> Line Amaranth intersection, direct impacts to the vegetation communities and flora are anticipated to be minimal as the proposed works will occur within and adjacent to the existing ROW as well as in agricultural lands and cultural meadow and will not directly impact any natural vegetation communities.

Direct impacts to vegetation include removal of cultural meadow vegetation and agricultural vegetation (i.e., crops), both of which are already affected by anthropogenic influences and support vegetation that is common and widespread across the broader landscape. One regionally rare plant species, Purple-veined Willowherb, is present within the Site, and may be impacted by the proposed works. This species is considered common in the province and is likely to regenerate naturally following construction. Specific mitigation measures to protect individuals are not warranted.

Preliminary impacts to woody vegetation have been assessed through a Tree Inventory and Assessment Memo and Tree Management Plans (WSP, 2023). Extensive tree and shrub removals are not currently anticipated, however removal of six Silver Maples (*Acer saccharinum*) located in the southeastern former farm residential property along Dufferin County Road 23 will be required to accommodate the proposed works (WSP, 2023). No removal of woody vegetation associated with natural vegetation communities (forests, wetlands, etc.) is anticipated. Impacts to trees and shrubs will be further assessed at later design stages, and appropriate mitigation will be refined.

Impacts to the Greenbelt are anticipated to be minimal; some agricultural land will be lost, however the preferred alternative avoids all KNHFs and KHF.

In addition to direct impacts, there is potential for indirect impacts to adjacent vegetation if mitigation measures are not implemented. Indirect impacts to adjacent retained vegetation during and following construction, may include, but are not limited to the following:

- Release of construction-generated sediment to adjacent habitats;
- Vegetation clearing / damage beyond the working area;
- Increased potential for introduction of non-native species;
- Spills of contaminants, fuels and other materials that may reach natural or semi-natural areas; and
- Changes in drainage patterns (groundwater and / or surface runoff flow) that can impact dependent vegetation / wetland areas located either upgradient or downgradient of the impacted area. Blocking of existing surface / subsurface drainage patterns can result in upstream and downstream vegetation dieback / condition changes; an increase in downstream runoff can result in erosion impacts on receiving vegetation.

With mitigation measures outlined in **Section 6.1** below, indirect impacts to vegetation are anticipated to be negligible.

None of the directly impacted vegetation communities, or their habitat values, are rare or limiting within the broader landscape surrounding the project. Following construction, similar vegetation is expected to regenerate



naturally in those areas temporarily disturbed for construction and staging. Impacts to vegetation and habitat features can be managed through implementation of standard mitigation measures, as outlined in **Section 6.1**.

## 5.2 Wildlife and Wildlife Habitat

Wildlife habitat impacts are generally similar to those described for vegetation. The cultural meadow and agricultural areas within the Site, support minimal local habitat and associated wildlife use, as these areas are fragmented and disturbed in nature. There will be a minor loss of wildlife habitat associated with the vegetation removals within the cultural meadow communities. These areas provide habitat that generally supports common, disturbance-tolerant wildlife species; there is potential for various wildlife (e.g., birds, snakes, small mammals, etc.) to enter the proposed work areas during construction.

The proposed works are not anticipated to affect the movement of animals, as the barriers created by the preferred alternative will be very similar to those that currently exist as a result of the existing road network.

Although no nests of migratory birds were observed in the vegetation within the Study Area during the single fall site visit, surveys were conducted outside the breeding bird season. There is potential for disturbance-tolerant bird species to nest in vegetation throughout the Site and the Study Area. Most migratory species and their nesting activity are protected by the federal Migratory Birds Convention Act (MBCA 1994). Potential impacts include disturbance to nesting activity or possibly loss of any nests present in the year of construction.

## 5.3 Species at Risk

No SAR were confirmed in the Study Area, however nine SAR have 'moderate' to 'high' potential to occur. Potential impacts to these species are outlined below:

### Barn Swallow (SC), Bank Swallow (THR)

Although these two species are likely to forage within the Study Area, no direct impacts to individuals or their nesting habitats are anticipated. Impacts to foraging habitat will be minimal and temporary and suitable nesting habitat (e.g., banks, bridges, barns, buildings) is not present within the Study Area, and therefore is not anticipated to be impacted by the proposed works. Impacts to these species are not anticipated with the implementation of the mitigation measures outlined in **Section 6.2**.

### Red-headed Woodpecker (END)

No evidence of nesting habitat was observed during the site visit. However, suitable nesting and foraging habitat is present throughout the Study Area, and particularly in the hedgerow supporting numerous mature Sugar Maples to the east of 2<sup>nd</sup> Line Amaranth. Impacts to this species are not anticipated with the implementation of the mitigation measures outlined in **Section 6.2**.

### Chimney Swift (THR)

Although likely to forage within the Study Area during the breeding season, no direct impacts to this species are anticipated as impacts to foraging habitat will be minimal and temporary. Impacts to this species are not anticipated with the implementation of the mitigation measures outlined in **Section 6.2**.

### Grasshopper Sparrow (SC), Bobolink, and Eastern Meadowlark (THR)

There is potential breeding, nesting and foraging habitat present for all three of these grassland bird species within the cultural meadow communities located north and south of Dufferin County Road 109 west of 2<sup>nd</sup> Line Amaranth and Dufferin County Road 3, as shown in **Figure 2, Appendix A**. A portion of this habitat will be directly

impacted by the proposed works, however the area impacted is currently anticipated to be small relative to the available surrounding suitable habitat. Although these species are unlikely to nest or forage on the edge of their grassland habitat, there remains some potential for these species to be impacted directly, or to be disturbed during the breeding season. Mitigation measures to protect these species are outlined in **Section 6.2** however further assessment of the impacts to these SAR birds should be undertaken at future design stages.

### **Monarch (SC)**

Impacts to foraging and breeding habitat for Monarch will be minimal, relative to the surrounding available suitable habitat. Specifically, the larger cultural meadow north of Dufferin Road 109, which will not be impacted, supported a greater density of Common Milkweed (host plant). Impacts to this species are not anticipated with the implementation of the mitigation measures outlined in **Section 6.1**.

### **Butternut (END)**

Potential habitat for Butternut is present throughout the Study Area, and individuals are known to occur within the immediate vicinity of the Study Area, however no Butternut were observed during the site visit and there is little potential for individuals to be present and undetected within 50 m of the Site. Impacts to this species are therefore not anticipated. Impacts to this species are not anticipated with the implementation of the mitigation Measures outlined in **Section 6.1**.

## 6.0 MITIGATION RECOMMENDATIONS

### 6.1 Vegetation and Wildlife Habitat

The following mitigation measures will be implemented in order to minimize impacts to vegetation, and associated wildlife habitat features and functions within and adjacent to the proposed ROW during and following construction.

- Clearly delineate vegetation clearing and retention zones on contract documents.
- Limit vegetation removals to the extent required for construction, and as delineated on contract drawings. Trees shall not be removed from beyond the grading limits.
- Employ appropriate vegetation clearing techniques (e.g., trees to be felled away from retained natural areas and watercourses, trimming of damaged branches and roots).
- Implement standard practices such as sediment and erosion controls, spill prevention, etc. during the construction phase of the project.
- Conduct equipment maintenance and refueling at the designated and properly contained maintenance areas in the works yard or at commercial garages located well away from watercourses and outside retained vegetation areas. The Contractor will have a Spills Prevention Plan and required materials on site at all times.
- Stabilize and re-vegetate exposed surfaces as soon as possible following disturbance, specifically within 15 days near watercourses and within 45 days in graded areas. Re-vegetate with CVC Seed Mix 1 (Upland Mix), to ensure each ecosite is returned to pre-construction condition or better. Seed mix and cover crop details are provided in the CVC Plant Selection Guideline (CVC 2018).
- Develop planting plans for the road relocation (to be developed at detail design) that utilize plant species that are native to this region of Ontario.
- Implement dust control using water, not chemical suppressants.
- Ensure equipment arrives on site in clean condition, operated on dry land and in a manner that minimizes disturbance to watercourses and vegetation.
- Follow the Clean Equipment Protocol for Industry, as prepared by the Peterborough Stewardship Council and Ontario Invasive Plant Council (May 2016).
- Implement environmental inspection during construction to ensure that all mitigation measures are implemented properly, maintained, and repaired, and remedial measures are initiated in a timely manner where warranted.

### 6.2 Wildlife

The mitigation measures outlined above are designed to minimize effects to vegetation and protect adjacent vegetation areas, which in turn protect the associated wildlife habitat functions. However, it is also necessary to ensure the protection of breeding birds, as well as other wildlife that may breed or otherwise use areas where construction is proposed. Wildlife-specific mitigation measures are outlined below.

#### Migratory Birds

Nesting migratory birds are protected under the Migratory Birds Convention Act (MBCA, 1994). No work is permitted to proceed that would result in the destruction of active nests (nests with eggs or young birds), or the

wounding or killing of bird species protected under the MBCA and / or Regulations under that Act. Updated Migratory Birds Regulations came into force on July 30, 2022. These modernized regulations include, but are not limited to, protections for inactive nests considered to have a high conservation value for migratory birds. The nests of 18 species (listed in Schedule 1 of the regulations), whose nests are reused, are provided year-round nest protection, unless they have been shown to be abandoned. Pileated Woodpecker (*Dryocopus pileatus*) is the only species with some potential to occur in the Study Area; removal of these nests (i.e., tree removals) requires three years of monitoring to demonstrate the inactivity of a given nest. No removals of large trees in Pileated Woodpecker habitat are currently anticipated as part of the proposed works and this eventuality is unlikely. In order to protect nesting migratory birds, in accordance with the MBCA, the Contractor will ensure that:

- No active nests (nests with eggs or young birds) will be removed or disturbed in accordance with the Migratory Birds Convention Act (MBCA 1994).
- No vegetation clearing (including grubbing and removal of trees, shrubs, and grasses) will occur during the bird nesting season (**April 1 to August 31**).
- Should large trees be required to be removed, an evaluation by a qualified biologist will be completed to exclude the possibility of use by protected migratory species (e.g., Pileated Woodpecker).

### Other Wildlife

- Any wildlife incidentally encountered during construction will not be knowingly harmed or harassed and will be allowed to move away on its own.
- In the event that an animal encountered during construction does not move from the construction zone and construction activities are such that continuing construction in the area would result in harm to the animal, all activities that could potentially harm the animal will cease immediately and the Contract Administrator and / or Environmental Inspector will be notified.
- All disturbed areas will be restored to pre-construction conditions.

## 6.3 Species at Risk

Nine SAR (Barn Swallow, Bank Swallow, Red-headed Woodpecker, Chimney Swift, Grasshopper Sparrow, Bobolink, Eastern Meadowlark, Monarch, and Butternut) have potential to occur within the Study Area. Only Endangered and Threatened species have legal protection under the provincial ESA; of the nine SAR with potential to occur, six are protected under the ESA: Bank Swallow, Red-headed Woodpecker, Chimney Swift, Bobolink, Eastern Meadowlark, and Butternut. To protect these species and any other SAR generally, the following mitigation measures will be implemented and specified within the Contract documents:

- If a SAR is encountered within or adjacent to the construction site and construction activities are such that continuing construction in that area would result in a contravention of the ESA (2007), all activities that would result in a contravention will stop, and the Contractor will contact the MECP SAR Biologist to discuss next steps.

### SAR Birds:

- Adhere to mitigation measures outlined in **Section 6.2** for MBCA compliance to avoid impacts to SAR bird species potentially nesting in the work area or vicinity.

## 7.0 RECOMMENDATIONS AND COMMITMENTS TO FUTURE WORK

The preliminary impact assessment and mitigation recommendations outlined in this report are based on the preliminary design of the preferred alignment. This assessment is based on background information and a single reconnaissance-level site visit in October 2022 which included the identification of potential habitats for wildlife and SAR. It is expected that additional studies will be required at the detail design stage to further document the features and functions that may be impacted by the proposed works. The following additional work is recommended.

- Conduct targeted Bobolink / Eastern Meadowlark Surveys (i.e., three site visits during the breeding bird season) to further assess habitat potential and to confirm whether SAR grassland birds are utilizing habitats that may be impacted by the proposed works.
- Conduct breeding bird surveys concurrently with two of the Bobolink / Eastern Meadowlark Surveys, in the remainder of the Study Area to determine the presence of additional potential SAR and SWH.
- Further assess fish and fish habitat, specifically to characterize the drainage feature on the Site, assess potential impacts to this feature and develop mitigation measures.
- Conduct a Headwater Drainage Feature assessment using CVC or TRCA methodology, and develop suitable mitigation measures, as required.

Mitigation measures outlined in this report should also be reviewed and refined at the detailed design stage to ensure impacts to vegetation, wildlife, and SAR are avoided or minimized and that all applicable permits and approvals are obtained.

## 8.0 CONCLUSIONS

This document addresses the proposed realignment of Dufferin County Road 109 and 2<sup>nd</sup> Line Amaranth, in Dufferin County, Ontario. Construction is currently proposed to take place within and adjacent to the existing ROW, as well as in agricultural lands and cultural meadow. This will result in some limited removal of vegetation and associated wildlife habitat.

Potential impacts associated with the construction activities include the removal of predominantly cultural vegetation communities and agricultural lands. The affected vegetation community types, species and associated habitats are common and tolerant of disturbance, reflecting their anthropogenic origins, location along an actively maintained ROW and immediately adjacent lands. Tree removals are currently anticipated to be minimal.

The wildlife species recorded within the Study Area are generally common, rural / urban-tolerant species. Based on the available background information and site visit findings, nine SAR have potential to use habitat within the Study Area, specifically: Barn Swallow, Bank Swallow, Red-headed Woodpecker, Chimney Swift, Grasshopper Sparrow, Bobolink, Eastern Meadowlark, Monarch, and Butternut. Impacts to SAR birds are generally limited to the temporary disturbance of foraging habitat as they are unlikely to nest within the affected areas of the alignment. Specific measures for some species, such as the use of a timing restriction for vegetation clearing to protect migratory and SAR birds, are required to ensure that impacts are minimized. Breeding bird surveys and Bobolink / Eastern Meadowlark Surveys are recommendations to confirm whether SAR are utilizing habitats within the Study Area, and to develop further mitigation measures, as required.

A series of standard mitigation measures directed at avoiding and minimizing impacts to vegetation, wildlife, wildlife habitat and SAR, are recommended for implementation during construction. These will be further developed / refined at later design stages. It is also recommended that the additional surveys outlined in Section 7 be undertaken at detail design to further document existing conditions and assess potential impacts of the proposed works.

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# Signature Page

## WSP Canada Inc.



Sophie Gibbs, BSc, MES  
*Terrestrial Ecologist*



Heather Drost, BSc  
*Senior Ecologist*

SG/HD/ld

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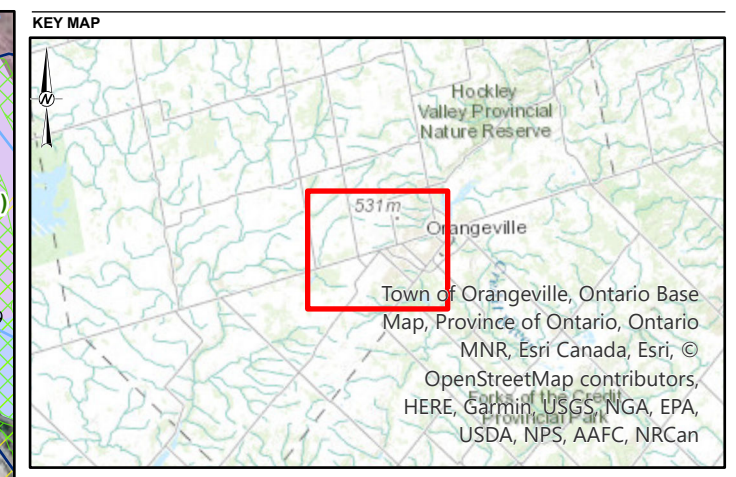
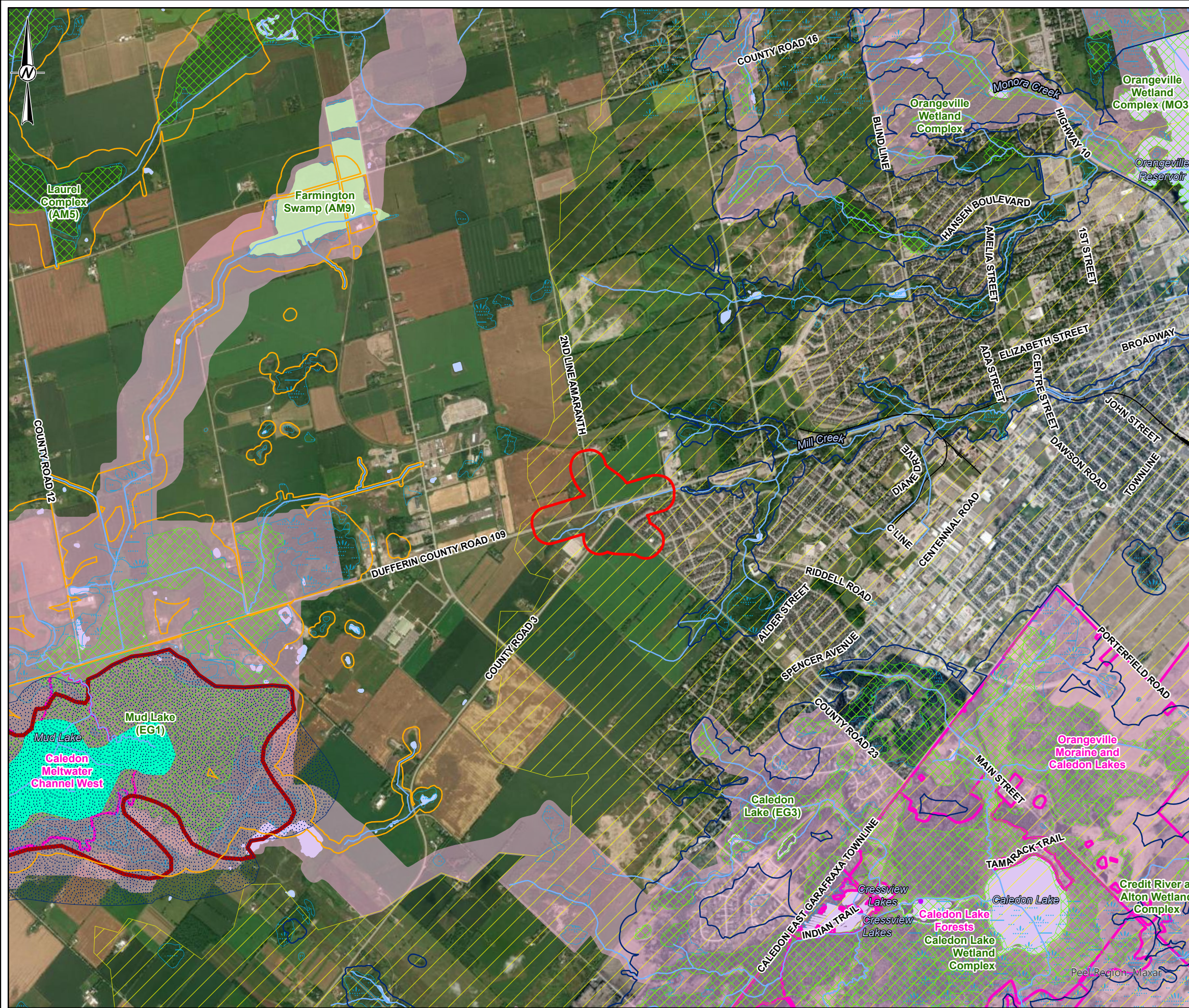
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**APPENDIX A**

**FIGURES**

**A-1 STUDY AREA CONTEXT**

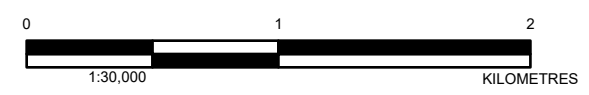
**A-2 EXISTING CONDITIONS**



SCALE: 1:500,000

LEGEND

|  |   |  |   |
|--|---|--|---|
|  | PREFERRED ALIGNMENT OPTION 1B: STUDY AREA |  | AREA OF NATURAL AND SCIENTIFIC INTEREST       |
|  | RAILWAY                                   |  | GREENBELT DESIGNATION - PROTECTED COUNTRYSIDE |
|  | REGULATION LIMIT (GRCA)                   |  | NATURAL HERITAGE SYSTEM AREA                  |
|  | REGULATION LIMIT (CVC)                    |  | UNEVALUATED WETLAND                           |
|  | GREAT BLUE HERON NESTING SITE/COLONY      |  | EVALUATED WETLAND                             |
|  | WATERFOWL NURSERY AREA                    |  | PROVINCIALY SIGNIFICANT WETLAND               |
|  | WHITE-TAILED DEER WINTERING AREA          |  | WATERCOURSE                                   |
|  | WHITE-TAILED DEER YARD                    |  | WATERBODY                                     |



NOTE(S)  
1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)  
1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO  
2. BASE MAP: MAXAR  
3. COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 17N

CLIENT  
COUNTY OF DUFFERIN

PROJECT  
DUFFERIN ROAD 109

TITLE  
STUDY AREA CONTEXT

|            |            |            |
|------------|------------|------------|
| CONSULTANT | YYYY-MM-DD | 2024-02-22 |
| DESIGNED   | ----       |            |
| PREPARED   | ####       |            |
| REVIEWED   | ----       |            |
| APPROVED   | ----       |            |

PROJECT NO. 221-08590-00 CONTROL 0001 REV. A FIGURE 1

PRINT: S:\Clients\County\_of\_Dufferin\CountyRoad109\9999\_PROJ\NaturaEnv\Environment\Map\_Environment.aprx PRINTED ON: AT: 12:04:25 PM

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B 28mm



**APPENDIX B**

**AGENCY CORRESPONDENCE**

**From:** Chris Lorenz  
**Sent:** Thu, 5 Jan 2023 20:09:48 +0000  
**To:** Gibbs, Sophie  
**Subject:** RE: Natural Heritage Background Information Request for Dufferin Road 109 EA

Hi Sophie, Happy New Year!

Unfortunately GRCA has very little background natural heritage information within and immediately adjacent the study area. I have included what we have below:

1. There are no watercourses within 120 m of the study area, within GRCA jurisdiction (based on Figure 2 – Detailed Project View in the info request letter).
2. There are no aquatic SAR mapped within 120 m of the study area, within GRCA jurisdiction
3. Nearby records of Species of concern include:
  - a. Bobolink (*Dolichonyx oryzivorus*)
  - b. Eastern Meadowlark (*Sturnella magna*)
  - c. Snapping Turtle (*Chelydra serpentina*)
4. There are no mapped wetlands within 120 m of study area, within GRCA jurisdiction.
5. There are no ANSIs within 120 m of the study area.
6. There are no mapped wildlife habitat values within 120 m of the study area.
7. There is a high groundwater table in the study area that is within GRCA jurisdiction.

Thank you Sophie, I hope you are doing well!

Chris

**Chris Lorenz, M.Sc.**  
Resource Planner  
Grand River Conservation Authority  
519-621-2763 ext. 2236

---

**From:** Gibbs, Sophie <[Sophie.Gibbs@wsp.com](mailto:Sophie.Gibbs@wsp.com)>  
**Sent:** Wednesday, December 21, 2022 2:48 PM  
**To:** Planning <[planning@grandriver.ca](mailto:planning@grandriver.ca)>  
**Cc:** Pugh, Margaret <[Margaret.Pugh@wsp.com](mailto:Margaret.Pugh@wsp.com)>  
**Subject:** Natural Heritage Background Information Request for Dufferin Road 109 EA

To Whom it May Concern,

WSP Canada Group Limited has been retained by Dufferin Region to complete a Schedule C Municipal Class Environmental Assessment Study (EA) in support of the Dufferin County Road 109 and 2nd Line realignment project, as further detailed in the attached letter. WSP is contacting Grand River Conservation Authority (GRCA) to formally request if any ecological background information is available

in the vicinity of the project. Please note that we will also be contacting the MNRF, MECP and CVC for additional information.

Please let me know if you require any further details to complete this request.

Thank you,

Sophie



**Sophie Gibbs**

Terrestrial Ecologist

B.Sc., M.E.S.

*she / her*

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**From:** Species at Risk (MECP)  
**Sent:** Tue, 21 Feb 2023 17:12:05 +0000  
**To:** Gibbs, Sophie  
**Subject:** RE: Natural Heritage Background Information Request for Dufferin Road 109 EA

Hi Sophie,

I apologize for the delayed response.

In addition to the species you have listed in your Pre-screening, we have records for the following in proximity to this site.

END/THR - black ash (protections paused until 2024), red-headed woodpecker,  
chimney swift  
SC- Canada warbler

Please note it remains the proponents responsibility to:

- Carry out preliminary screening for their project,
- Obtain the best available information for all applicable information sources,
- Conduct necessary field studies or inventories to identify and confirm the presence of absence of species at risk or their habitat,
- Consider any potential impacts to species at risk that a proposed activity might cause, and
- Comply with the Endangered Species Act (ESA).

Additionally, while this data represents MECP's best current available information, it is important to note that a lack of information for a site does not mean that species at risk or their habitat are not present. There are many areas where the Government of Ontario does not currently have information, especially in more remote parts of the province. On-site assessments can better verify site conditions, identify and confirm presence of species at risk and/or their habitats. It is the responsibility of the proponent to ensure that species at risk are not killed, harmed, or harassed, and that their habitat is not damaged or destroyed through the activities carried out on the site.

*Lisa McShane* she/her

Management Biologist – Species at Risk | Landscape Species Recovery Section, Species at Risk  
Branch | Ministry of Environment, Conservation and Parks | [lisa.mcshane@ontario.ca](mailto:lisa.mcshane@ontario.ca) | (226) 668-0527

---

**From:** Gibbs, Sophie <Sophie.Gibbs@wsp.com>  
**Sent:** Wednesday, December 21, 2022 2:35 PM  
**To:** Species at Risk (MECP) <SAROntario@ontario.ca>  
**Cc:** Pugh, Margaret <Margaret.Pugh@wsp.com>  
**Subject:** Natural Heritage Background Information Request for Dufferin Road 109 EA

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To Whom it May Concern,

WSP Canada Group Limited has been retained by Dufferin Region to complete a Schedule C Municipal Class Environmental Assessment Study (EA) in support of the Dufferin County Road 109 and 2nd Line realignment project, as further detailed in the attached letter. WSP is contacting the Ministry of the Environment, Conservation and Parks (MECP) to formally request if any ecological background information is available in the vicinity of the project. Please note that we will also be contacting the MNRF, GRCA and CVC for additional information.

Please let me know if you require any further details to complete this request.

Thank you,

Sophie



**Sophie Gibbs**

Terrestrial Ecologist

B.Sc., M.E.S.

*she / her*

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M+ 1 519-998-6506

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## Diwan, Lekha Kundara

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**From:** Pierce, Ryan <ryan.pierce@cvc.ca>  
**Sent:** October 18, 2023 12:01 PM  
**To:** Gibbs, Sophie; Pugh, Margaret  
**Cc:** Bhatt, Stuti  
**Subject:** RE: [External] Natural Heritage Background Information Request for Dufferin Road 109 EA (DR 22/075)

Hi Sophie,

Thank you for the signed DSA.

The data can be accessed here:  [DR 22 075](#)

If you have any questions or concerns, please contact me.

Cheers,

**Ryan Pierce** | he/him/his

Planning Technician, Planning and Development Services | Credit Valley Conservation

905-670-1615 ext. 380

[ryan.pierce@cvc.ca](mailto:ryan.pierce@cvc.ca) | [cvc.ca](http://cvc.ca)



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Conservation**



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**From:** Gibbs, Sophie <[Sophie.Gibbs@wsp.com](mailto:Sophie.Gibbs@wsp.com)>  
**Sent:** Tuesday, October 17, 2023 1:31 PM  
**To:** Bhatt, Stuti <[stuti.bhatt@cvc.ca](mailto:stuti.bhatt@cvc.ca)>  
**Subject:** RE: [External] Natural Heritage Background Information Request for Dufferin Road 109 EA

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Hi Stuti,

Please find the attached signed DSA.

Thanks!



**Sophie Gibbs**  
Terrestrial Ecologist  
B.Sc., M.E.S.

she / her

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M+ 1 519-998-6506

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Kitchener, Ontario  
N2K 1M3 Canada

[wsp.com](http://wsp.com)

---

**From:** Bhatt, Stuti <[stuti.bhatt@cvc.ca](mailto:stuti.bhatt@cvc.ca)>  
**Sent:** Monday, May 15, 2023 9:24 PM  
**To:** Gibbs, Sophie <[Sophie.Gibbs@wsp.com](mailto:Sophie.Gibbs@wsp.com)>  
**Subject:** RE: [External] Natural Heritage Background Information Request for Dufferin Road 109 EA

Hi Sophie,

Apologies for the delay.

Please complete Schedule 2, sign, and return the attached Data Sharing Agreement (DSA) at your earliest convenience. Staff who need direct access to the data should be included on Schedule 2. A representative from the proponent will also need to sign the DSA before we can release any data.

Please click the following links to access CVC's fish data and ELC data:

Fish data - <https://cvc-camaps.opendata.arcgis.com/datasets/camaps::fish-collection-records-1999-2021/explore>

ELC data - <https://cvc-camaps.opendata.arcgis.com/datasets/camaps::ecological-land-classification-elc-and-land-use-2022/about>

Please let me know if you have any questions at all.

Best regards,

**Stuti Bhatt**

Planning Technician, Planning and Development Services | Credit Valley Conservation  
905-670-1615 ext 350 | M: 437-221-3614  
[stuti.bhatt@cvc.ca](mailto:stuti.bhatt@cvc.ca) | [cvc.ca](http://cvc.ca)



---

**From:** Gibbs, Sophie <[Sophie.Gibbs@wsp.com](mailto:Sophie.Gibbs@wsp.com)>  
**Sent:** Thursday, April 20, 2023 10:47 AM  
**To:** Bhatt, Stuti <[stuti.bhatt@cvc.ca](mailto:stuti.bhatt@cvc.ca)>  
**Cc:** Pugh, Margaret <[Margaret.Pugh@wsp.com](mailto:Margaret.Pugh@wsp.com)>  
**Subject:** RE: [External] Natural Heritage Background Information Request for Dufferin Road 109 EA

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Hi Stuti,

Just wanted to follow up on this info request, I believe my email below is our last correspondence.

Thanks!

Sophie

---

**From:** Gibbs, Sophie  
**Sent:** January 19, 2023 8:49 AM  
**To:** Bhatt, Stuti <[stuti.bhatt@cvc.ca](mailto:stuti.bhatt@cvc.ca)>  
**Cc:** Pugh, Margaret <[Margaret.Pugh@wsp.com](mailto:Margaret.Pugh@wsp.com)>  
**Subject:** RE: [External] Natural Heritage Background Information Request for Dufferin Road 109 EA

Hi Stuti,

I've included the requested info below:

- Project name: Schedule C Municipal Class EA Dufferin County Road 109/2<sup>nd</sup> Line Realignment
- Proponent: County of Dufferin
- User: General public / road users
- Intended use publications: The road realignment is intended to improve traffic flow and user experience
- Publications: the ecology department deliverable will be an Environment Impact Study Report

A shapefile of the study area is attached. Let me know if you need anything else.

Thanks!

Sophie

---

**From:** Bhatt, Stuti <[stuti.bhatt@cvc.ca](mailto:stuti.bhatt@cvc.ca)>  
**Sent:** January 17, 2023 2:59 PM  
**To:** Gibbs, Sophie <[Sophie.Gibbs@wsp.com](mailto:Sophie.Gibbs@wsp.com)>  
**Cc:** Pugh, Margaret <[Margaret.Pugh@wsp.com](mailto:Margaret.Pugh@wsp.com)>  
**Subject:** RE: [External] Natural Heritage Background Information Request for Dufferin Road 109 EA

Hi Sophie,

Thank you for your email. Please provide the following information along with a map of your interest area so I can proceed with a data sharing agreement. If possible, please also send a shapefile of the interest area\*.

- Project name:
- Proponent:
- User:
- Intended use and publications:

Please feel free to get in touch if you have any questions.

Best regards,

**Stuti Bhatt**

Planning Technician, Planning and Development Services | Credit Valley Conservation  
905-670-1615 ext 350 | M: 437-221-3614  
[stuti.bhatt@cvc.ca](mailto:stuti.bhatt@cvc.ca) | [cvc.ca](http://cvc.ca)



---

**From:** Gibbs, Sophie <[Sophie.Gibbs@wsp.com](mailto:ophie.gibbs@wsp.com)>  
**Sent:** Wednesday, December 21, 2022 2:41 PM  
**To:** ZZG-CVC-Planning <[planning@cvc.ca](mailto:planning@cvc.ca)>  
**Cc:** Pugh, Margaret <[Margaret.Pugh@wsp.com](mailto:Margaret.Pugh@wsp.com)>  
**Subject:** [External] Natural Heritage Background Information Request for Dufferin Road 109 EA

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Please let me know if you require any further details to complete this request.

Thank you,

Sophie



**Sophie Gibbs**  
Terrestrial Ecologist  
B.Sc., M.E.S.  
*she / her*

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-LAEHhHHzdJzBITWfa4Hgs7pbKl

Appendix B - CVC Data

| TAXA TYPE    | SCIENTIFIC_NAME                  | COMMON_NAME          | Primary Surveyor                 | Additional Surveyors | Visit Date | Abundance | UTME          | UTMN           | Evidence Faunal | NATIVE STATUS ONTARIO | GLOBAL RANK | PROVINCIAL RANK | SCC TIER | Source  |
|--------------|----------------------------------|----------------------|----------------------------------|----------------------|------------|-----------|---------------|----------------|-----------------|-----------------------|-------------|-----------------|----------|---|
| Bird         | <i>Agelaius phoeniceus</i>       | Red-winged Blackbird | Sarah Piett                      |                      | 6/11/2014  | 1         | 567999.171499 | 4861100.514884 | SM              | native                | G5          | S5              | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Agelaius phoeniceus</i>       | Red-winged Blackbird | Sarah Piett                      |                      | 6/11/2014  | 1         | 567827.022681 | 4861048.685132 | SM              | native                | G5          | S5              | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Agelaius phoeniceus</i>       | Red-winged Blackbird | Sarah Piett                      |                      | 6/11/2014  | 2         | 568420.064236 | 4861865.895661 | SM              | native                | G5          | S5              | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Agelaius phoeniceus</i>       | Red-winged Blackbird | Sarah Piett                      |                      | 6/11/2014  | 1         | 568444.12805  | 4861939.938163 | SM              | native                | G5          | S5              | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Agelaius phoeniceus</i>       | Red-winged Blackbird | Sarah Piett                      |                      | 6/11/2014  | 1         | 568502.745031 | 4861670.917071 | SM              | native                | G5          | S5              | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Agelaius phoeniceus</i>       | Red-winged Blackbird | Sarah Piett                      |                      | 6/11/2014  | 1         | 568606.404534 | 4861915.257329 | SM              | native                | G5          | S5              | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Agelaius phoeniceus</i>       | Red-winged Blackbird | Sarah Piett                      |                      | 6/11/2014  | 1         | 568041.856293 | 4861196.390974 | SM              | native                | G5          | S5              | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Agelaius phoeniceus</i>       | Red-winged Blackbird | Sarah Piett                      |                      | 6/11/2014  | 1         | 568002.366958 | 4861518.475859 | SM              | native                | G5          | S5              | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Agelaius phoeniceus</i>       | Red-winged Blackbird | Sarah Piett                      |                      | 6/11/2014  | 1         | 568561.632695 | 4862242.095393 | SM              | native                | G5          | S5              | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Agelaius phoeniceus</i>       | Red-winged Blackbird | Sarah Piett                      |                      | 6/11/2014  | 1         | 568363.569002 | 4862422.265482 | SM              | native                | G5          | S5              | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Branta canadensis</i>         | Canada Goose         | Sarah Piett                      |                      | 6/11/2014  | 6         | 567831.341827 | 4860763.004477 | FL              | native                | G5          | S5              | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Branta canadensis</i>         | Canada Goose         | Sarah Piett                      |                      | 6/11/2014  | 8         | 567998.047812 | 4861415.433377 | OB              | native                | G5          | S5              | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Corvus brachyrhynchos</i>     | American Crow        | Sarah Piett                      |                      | 6/11/2014  | 1         | 568217.090215 | 4861574.007736 | SM              | native                | G5          | S5              | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Eremophila alpestris</i>      | Horned Lark          | Sarah Piett                      |                      | 6/11/2014  | 1         | 568325.113153 | 4861323.7774   | SM              | native                | G5          | S4              | 3        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Melospiza melodia</i>         | Song Sparrow         | Sarah Piett                      |                      | 6/11/2014  | 1         | 568407.723819 | 4861809.746763 | SM              | native                | G5          | S5              | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Melospiza melodia</i>         | Song Sparrow         | Sarah Piett                      |                      | 6/11/2014  | 1         | 568623.681118 | 4861866.512681 | SM              | native                | G5          | S5              | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Melospiza melodia</i>         | Song Sparrow         | Sarah Piett                      |                      | 6/11/2014  | 1         | 568012.239292 | 4861459.858878 | SM              | native                | G5          | S5              | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Passerculus sandwichensis</i> | Savannah Sparrow     | Sarah Piett                      |                      | 6/11/2014  | 1         | 567921.690185 | 4861022.54953  | SM              | native                | G5          | S5B,S3N         | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Passerculus sandwichensis</i> | Savannah Sparrow     | Sarah Piett                      |                      | 6/11/2014  | 1         | 568023.942356 | 4860919.09014  | SM              | native                | G5          | S5B,S3N         | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Passerculus sandwichensis</i> | Savannah Sparrow     | Sarah Piett                      |                      | 6/11/2014  | 1         | 568320.45146  | 4861824.89179  | SM              | native                | G5          | S5B,S3N         | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Passerculus sandwichensis</i> | Savannah Sparrow     | Sarah Piett                      |                      | 6/11/2014  | 1         | 568613.516076 | 4861723.24614  | SM              | native                | G5          | S5B,S3N         | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Passerculus sandwichensis</i> | Savannah Sparrow     | Sarah Piett                      |                      | 6/11/2014  | 1         | 568259.806677 | 4861318.99753  | SM              | native                | G5          | S5B,S3N         | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Passerculus sandwichensis</i> | Savannah Sparrow     | Sarah Piett                      |                      | 6/11/2014  | 1         | 568151.430717 | 4861265.76247  | SM              | native                | G5          | S5B,S3N         | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Passerculus sandwichensis</i> | Savannah Sparrow     | Sarah Piett                      |                      | 6/11/2014  | 1         | 568481.937159 | 4862371.49575  | SM              | native                | G5          | S5B,S3N         | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Passerculus sandwichensis</i> | Savannah Sparrow     | Sarah Piett                      |                      | 6/11/2014  | 1         | 568410.82452  | 4862139.08464  | SM              | native                | G5          | S5B,S3N         | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Passerculus sandwichensis</i> | Savannah Sparrow     | Sarah Piett                      |                      | 6/11/2014  | 1         | 568390.050317 | 4862189.49023  | SM              | native                | G5          | S5B,S3N         | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Passerculus sandwichensis</i> | Savannah Sparrow     | Sarah Piett                      |                      | 6/11/2014  | 1         | 568586.190805 | 4862286.50723  | SM              | native                | G5          | S5B,S3N         | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Passerculus sandwichensis</i> | Savannah Sparrow     | Sarah Piett                      |                      | 6/11/2014  | 1         | 568521.717332 | 4862453.5104   | SM              | native                | G5          | S5B,S3N         | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Quiscalus quiscula</i>        | Common Grackle       | Sarah Piett                      |                      | 6/11/2014  | 1         | 567865.894995 | 4860905.536294 | SM              | native                | G5          | S5              | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Spinus tristis</i>            | American Goldfinch   | Sarah Piett                      |                      | 6/11/2014  | 1         | 568397.505149 | 4862243.329434 | SM              | native                | G5          | S5              | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Spizella passerina</i>        | Chipping Sparrow     | Sarah Piett                      |                      | 6/11/2014  | 1         | 568578.638596 | 4861834.427597 | SM              | native                | G5          | S5B,S3N         | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Spizella passerina</i>        | Chipping Sparrow     | Sarah Piett                      |                      | 6/11/2014  | 1         | 568110.962629 | 4861509.837567 | SM              | native                | G5          | S5B,S3N         | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Sturnus vulgaris</i>          | European Starling    | Sarah Piett                      |                      | 6/11/2014  | 3         | 568016.558438 | 4861325.348332 | SM              | non-native            | G5          | SNA             | 5        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Sturnus vulgaris</i>          | European Starling    | Sarah Piett                      |                      | 6/11/2014  | 1         | 568157.856213 | 4861482.68865  | SM              | non-native            | G5          | SNA             | 5        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Turdus migratorius</i>        | American Robin       | Sarah Piett                      |                      | 6/11/2014  | 1         | 568710.681058 | 4861851.704181 | SM              | native                | G5          | S5              | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Turdus migratorius</i>        | American Robin       | Sarah Piett                      |                      | 6/11/2014  | 1         | 568107.877524 | 4861400.007856 | SM              | native                | G5          | S5              | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Turdus migratorius</i>        | American Robin       | Sarah Piett                      |                      | 6/11/2014  | 1         | 568129.473254 | 4861324.114291 | VO              | native                | G5          | S5              | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Turdus migratorius</i>        | American Robin       | Sarah Piett                      |                      | 6/11/2014  | 1         | 568398.12217  | 4862313.052791 | SM              | native                | G5          | S5              | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Bird         | <i>Turdus migratorius</i>        | American Robin       | Sarah Piett                      |                      | 6/11/2014  | 1         | 568333.33498  | 4862247.64858  | SM              | native                | G5          | S5              | 4        | NH database - CVC Survey - Targeted Grassland Birds |
| Herpetofauna | <i>Anaxyrus americanus</i>       | American Toad        | Candice Harrison (nee Petherick) | Leanne Wallis        | 5/21/2014  | 1         | 568028        | 4861127        | L1              | native                | G5          | S5              | 3        | NH database - CVC Survey - Amphibian Road Call      |
| Herpetofauna | <i>Dryophytes versicolor</i>     | Gray Treefrog        | Candice Harrison (nee Petherick) | Leanne Wallis        | 5/21/2014  | 1         | 568028        | 4861127        | L1              | native                | G5          | S5              | 3        | NH database - CVC Survey - Amphibian Road Call      |
| Herpetofauna | <i>Pseudacris crucifer</i>       | Spring Peeper        | Candice Harrison (nee Petherick) | Leanne Wallis        | 5/21/2014  |           | 568028        | 4861127        | L3              | native                | G5          | S5              | 3        | NH database - CVC Survey - Amphibian Road Call      |



## Diwan, Lekha Kundara

---

**From:** Gibbs, Sophie  
**Sent:** December 21, 2022 2:29 PM  
**To:** Benvenuti, Jodi (MNRF)  
**Cc:** Pugh, Margaret  
**Subject:** Natural Heritage Background Information Request for Dufferin Road 109 EA  
**Attachments:** DufferinRoad109EA\_InfoRequest\_21Dec2022\_MNRF.pdf

Hello Jodi,

WSP Canada Group Limited has been retained by Dufferin Region to complete a Schedule C Municipal Class Environmental Assessment Study (EA) in support of the Dufferin County Road 109 and 2nd Line realignment project, as further detailed in the attached letter. WSP is contacting the Ministry of Natural Resources and Forestry (MNRF) to formally request if any ecological background information is available in the vicinity of the project. Please note that we will also be contacting the MECP, GRCA and CVC for additional information.

Please let me know if you require any further details to complete this request.

Thank you,

Sophie



**Sophie Gibbs**

Terrestrial Ecologist

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*she / her*

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**APPENDIX C**

**VASCULAR PLANT SPECIES LIST**

**APPENDIX C**  
**Vascular Plant Species List**

February 2024  
221-08590-00

| SCIENTIFIC NAME                | COMMON NAME                | CC <sup>1</sup> | CW <sup>1</sup> | G_RANK <sup>3</sup> | S_RANK <sup>4</sup> | COSEWIC <sup>5</sup> | SARA <sup>6</sup> | ESA Status <sup>7</sup> | NATIVE STATUS <sup>9</sup> | PEEL/CVC (Kaiser, 2001) <sup>8</sup> |
|--------------------------------|----------------------------|-----------------|-----------------|---------------------|---------------------|----------------------|-------------------|-------------------------|----------------------------|--------------------------------------|
| <i>Acer negundo</i>            | Manitoba Maple             | 0               | 0               | G5                  | S5                  |                      |                   |                         | N                          | X                                    |
| <i>Acer platanoides</i>        | Norway Maple               |                 | 5               | GNR                 | SNA                 |                      |                   |                         | I                          | X                                    |
| <i>Acer rubrum</i>             | Red Maple                  | 4               | 0               | G5                  | S5                  |                      |                   |                         | N                          | X                                    |
| <i>Ambrosia artemisiifolia</i> | Common Ragweed             | 0               | 3               | G5                  | S5                  |                      |                   |                         | N                          | X                                    |
| <i>Arctium minus</i>           | Common Burdock             |                 | 3               | GNR                 | SNA                 |                      |                   |                         | I                          | X                                    |
| <i>Artemisia annua</i>         | Annual Wormwood            |                 | 3               | GNR                 | SNA                 |                      |                   |                         | I                          | X                                    |
| <i>Asclepias syriaca</i>       | Common Milkweed            | 0               | 5               | G5                  | S5                  |                      |                   |                         | N                          | X                                    |
| <i>Bromus inermis</i>          | Smooth Brome               |                 | 5               | G5                  | SNA                 |                      |                   |                         | I                          | X                                    |
| <i>Carduus nutans</i>          | Nodding Thistle            |                 | 3               | GNR                 | SNA                 |                      |                   |                         | I                          |                                      |
| <i>Centaurea jacea</i>         | Brown Knapweed             |                 | 5               | GNR                 | SNA                 |                      |                   |                         | I                          |                                      |
| <i>Cichorium intybus</i>       | Wild Chicory               |                 | 5               | GNR                 | SNA                 |                      |                   |                         | I                          | X                                    |
| <i>Cirsium arvense</i>         | Canada Thistle             |                 | 3               | G5                  | SNA                 |                      |                   |                         | I                          | X                                    |
| <i>Cirsium vulgare</i>         | Bull Thistle               |                 | 3               | GNR                 | SNA                 |                      |                   |                         | I                          | X                                    |
| <i>Clinopodium vulgare</i>     | Wild Basil                 | 4               | 5               | G5                  | S5                  |                      |                   |                         | N                          | X                                    |
| <i>Cornus sericea</i>          | Red-osier Dogwood          | 2               | -3              | G5                  | S5                  |                      |                   |                         | N                          | X                                    |
| <i>Daucus carota</i>           | Wild Carrot                |                 | 5               | GNR                 | SNA                 |                      |                   |                         | I                          | X                                    |
| <i>Epilobium coloratum</i>     | Purple-veined Willowherb   | 3               | -5              | G5                  | S5                  |                      |                   |                         | N                          | R/L                                  |
| <i>Erigeron annuus</i>         | Annual Fleabane            | 0               | 3               | G5                  | S5                  |                      |                   |                         | N                          | X                                    |
| <i>Euthamia graminifolia</i>   | Grass-leaved Goldenrod     | 2               | 0               | G5                  | S5                  |                      |                   |                         | N                          | X                                    |
| <i>Fragaria virginiana</i>     | Wild Strawberry            | 2               | 3               | G5                  | S5                  |                      |                   |                         | N                          |                                      |
| <i>Galium mollugo</i>          | Smooth Bedstraw            |                 | 5               | GNR                 | SNA                 |                      |                   |                         | I                          | X                                    |
| <i>Linaria vulgaris</i>        | Butter-and-eggs            |                 | 5               | GNR                 | SNA                 |                      |                   |                         | I                          | X                                    |
| <i>Lonicera tatarica</i>       | Tatarian Honeysuckle       |                 | 3               | GNR                 | SNA                 |                      |                   |                         | I                          | X                                    |
| <i>Lotus corniculatus</i>      | Garden Bird's-foot Trefoil |                 | 3               | GNR                 | SNA                 |                      |                   |                         | I                          | X                                    |
| <i>Matricaria discoidea</i>    | Pineappleweed              |                 | 3               | G5                  | SNA                 |                      |                   |                         | I                          | X                                    |
| <i>Melilotus albus</i>         | White Sweet-clover         |                 | 3               | G5                  | SNA                 |                      |                   |                         | I                          | X                                    |

**APPENDIX C**  
**Vascular Plant Species List**

February 2024  
221-08590-00

| SCIENTIFIC NAME                                       | COMMON NAME            | CC <sup>1</sup> | CW <sup>1</sup> | G_RANK <sup>3</sup> | S_RANK <sup>4</sup> | COSEWIC <sup>5</sup> | SARA <sup>6</sup> | ESA Status <sup>7</sup> | NATIVE STATUS <sup>9</sup> | PEEL/CVC (Kaiser, 2001) <sup>8</sup> |
|---|------------------------|-----------------|-----------------|---------------------|---------------------|----------------------|-------------------|-------------------------|----------------------------|--------------------------------------|
| <i>Parthenocissus vitacea</i>                         | Thicket Creeper        | 4               | 3               | G5                  | S5                  |                      |                   |                         | N                          | X                                    |
| <i>Phalaris arundinacea</i> var. <i>arundinacea</i>   | Reed Canarygrass       | 0               | -3              | G5TNR               | S5                  |                      |                   |                         | N                          | X                                    |
| <i>Phleum pratense</i>                                | Common Timothy         |                 | 3               | GNR                 | SNA                 |                      |                   |                         | I                          | X                                    |
| <i>Plantago major</i>                                 | Common Plantain        |                 | 3               | G5                  | SNA                 |                      |                   |                         | I                          | X                                    |
| <i>Plantago rugelii</i>                               | Rugel's Plantain       | 1               | 0               | G5                  | S5                  |                      |                   |                         | N                          | X                                    |
| <i>Prunus avium</i>                                   | Sweet Cherry           |                 | 5               | GNR                 | SNA                 |                      |                   |                         | I                          | X                                    |
| <i>Ranunculus acris</i>                               | Common Buttercup       |                 | 0               | G5                  | SNA                 |                      |                   |                         | I                          | X                                    |
| <i>Rhamnus cathartica</i>                             | European Buckthorn     |                 | 0               | GNR                 | SNA                 |                      |                   |                         | I                          | X                                    |
| <i>Rhus typhina</i>                                   | Staghorn Sumac         | 1               | 3               | G5                  | S5                  |                      |                   |                         | N                          | X                                    |
| <i>Rubus idaeus</i>                                   | Red Raspberry          | 2               | 3               | G5                  | S5                  |                      |                   |                         | N                          |                                      |
| <i>Rumex crispus</i>                                  | Curled Dock            |                 | 0               | GNR                 | SNA                 |                      |                   |                         | I                          | X                                    |
| <i>Saponaria officinalis</i>                          | Bouncing-bet           |                 | 3               | GNR                 | SNA                 |                      |                   |                         | I                          | X                                    |
| <i>Silene vulgaris</i>                                | Bladder Champion       |                 | 5               | GNR                 | SNA                 |                      |                   |                         | I                          | X                                    |
| <i>Solidago altissima</i> var. <i>altissima</i>       | Eastern Tall Goldenrod | 1               | 3               | G--T5               | S5                  |                      |                   |                         | N                          | X                                    |
| <i>Sonchus arvensis</i> ssp. <i>arvensis</i>          | Glandular Sow-thistle  |                 | 3               | GNRTNR              | SNA                 |                      |                   |                         | I                          | X                                    |
| <i>Symphyotrichum ericoides</i> var. <i>ericoides</i> | White Heath Aster      | 4               | 3               | G5T5                | S5                  |                      |                   |                         | N                          | X                                    |
| <i>Symphyotrichum lanceolatum</i>                     | Panicled Aster         | 3               | -3              | G5                  | S5                  |                      |                   |                         | N                          |                                      |
| <i>Symphyotrichum novae-angliae</i>                   | New England Aster      | 2               | -3              | G5                  | S5                  |                      |                   |                         | N                          | X                                    |
| <i>Syringa vulgaris</i>                               | Common Lilac           |                 | 5               | GNR                 | SNA                 |                      |                   |                         | I                          | X                                    |
| <i>Taraxacum officinale</i>                           | Common Dandelion       |                 | 3               | G5                  | SNA                 |                      |                   |                         | I                          | X                                    |
| <i>Trifolium pratense</i>                             | Red Clover             |                 | 3               | GNR                 | SNA                 |                      |                   |                         | I                          | X                                    |
| <i>Tussilago farfara</i>                              | Coltsfoot              |                 | 3               | GNR                 | SNA                 |                      |                   |                         | I                          | X                                    |
| <i>Ulmus americana</i>                                | White Elm              | 3               | -3              | G4                  | S5                  |                      |                   |                         | N                          | X                                    |
| <i>Viburnum lentago</i>                               | Nannyberry             | 4               | 0               | G5                  | S5                  |                      |                   |                         | N                          | X                                    |
| <i>Vicia cracca</i>                                   | Tufted Vetch           |                 | 5               | GNR                 | SNA                 |                      |                   |                         | I                          | X                                    |
| <i>Vitis riparia</i>                                  | Riverbank Grape        | 0               | 0               | G5                  | S5                  |                      |                   |                         | N                          | X                                    |

## 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.

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.

### <sup>2</sup> G-Rank (Global)

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

Nature Serve: <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.

### <sup>2</sup>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.

**<sup>3</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.

*Provincial/Sub-national (S) Conservation Status Ranks*

- 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
- 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 – Nation of state/province conservation status not yet assessed.
- 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.

**<sup>4</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>

*COSEWIC Conservation Status Ranks*

- 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 (formerly vulnerable) – A species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.

**<sup>5</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. 2022)*

<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.

*SARA Conservation Status Ranks*

- 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>6</sup> ESA Status (Species at Risk in Ontario)**

*Provincial status from MNRF (Status as of Dec. 2022)*

<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.

*MNRF Conservation Status Ranks*

- EXP: Extirpated – 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.

**<sup>7</sup> Native Status**

*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)

Codes are defined as follows:

- N: Native  
I: Introduced

**<sup>8</sup> Peel and/or CVC**

*Kaiser, Jeff. 2001. The Vascular Plant Flora of the Region of Peel and the Credit River Watershed. Prepared for Credit Valley Conservation, The Regional Municipality of Peel, and the Toronto and Region Conservation Authority.*

Codes are defined as follows:

- R: Regionally Rare (GTA), fewer than 40 locations  
L: Locally Rare (Peel and Credit River Watershed), fewer than 11 stations

**APPENDIX D**

**WILDLIFE SPECIES LIST**



**APPENDIX D**  
**Wildlife Species List**

February 2024  
221-08590-00

| Taxon | Common Name            | Scientific Name             | Grank <sup>1</sup> | Srank <sup>2</sup> | ESA Status <sup>3</sup> | SARA Status <sup>4</sup> | SARA Schedule <sup>4</sup> | CVC (2010) <sup>5</sup> | MNRF Area Sensitive Birds <sup>6</sup> | Protected Under MBCA |
|-------|------------------------|-----------------------------|--------------------|--------------------|-------------------------|--------------------------|----------------------------|-------------------------|--|----------------------|
| Birds | American Kestrel       | <i>Falco sparverius</i>     | G5                 | S4                 |                         |                          |                            | 3                       |  |                      |
|       | Black-capped Chickadee | <i>Poecile atricapillus</i> | G5                 | S5                 |                         |                          |                            | 4                       |  | ✓                    |
|       | Blue Jay               | <i>Cyanocitta cristata</i>  | G5                 | S5                 |                         |                          |                            | 4                       |  |                      |
|       | Dark-eyed Junco        | <i>Junco hyemalis</i>       | G5                 | S5B                |                         |                          |                            | 2                       |  | ✓                    |
|       | Golden-crowned Kinglet | <i>Regulus satrapa</i>      | G5                 | S5B                |                         |                          |                            | 2                       |  | ✓                    |
|       | Mourning Dove          | <i>Zenaidura macroura</i>   | G5                 | S5                 |                         |                          |                            | 4                       |  | ✓                    |
|       | Ruby-crowned Kinglet   | <i>Regulus calendula</i>    | G5                 | S4B                |                         |                          |                            | 2                       |  | ✓                    |
|       | Sharp-shinned Hawk     | <i>Accipiter striatus</i>   | G5                 | S5B,SZN            | NAR                     |                          |                            | 3                       | X                                      |                      |
|       | Song Sparrow           | <i>Melospiza melodia</i>    | G5                 | S5B                |                         |                          |                            | 4                       |  | ✓                    |

## Legend

### <sup>1</sup>G-Rank (global)

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.

- G1 Extremely rare - usually 5 or fewer occurrences in the overall range or very few remaining individuals; or because of some factor(s) making it especially vulnerable to Extinction.
- G2 Very rare - usually between 5 and 20 occurrences in the overall range or with many individuals in fewer occurrences; or because of some factor(s) making it vulnerable to Extinction.
- G3 Rare to uncommon - usually between 20 and 100 occurrences; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.
- G4 Common - usually more than 100 occurrences; usually not susceptible to immediate threats.
- G5 Very common - demonstrably secure under present conditions.

### <sup>2</sup>S-Rank (provincial)

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 - Critically imperiled in the nation or state/province because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province.
- S2 Imperiled - Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.
- S3 Vulnerable - Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
- S4 Apparently Secure - Uncommon but not rare; some cause for long-term concern due to declines or other factors.
- S5 Secure - Common, widespread, and abundant in the nation or state/province.
- 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).
- SAN Non-breeding accidental.

### <sup>3</sup>ESA Status (Species at Risk in Ontario) Status

*Provincial status from MECP (Status as of Jan 2022)*

<https://www.ontario.ca/page/species-risk-ontario>

The provincial review process is implemented by the Committee on the Status of Species at Risk in Ontario (COSSARO). COSSARO is an independent advisory panel to the Ontario Ministry of Environment, Conservation and Parks (MECP) that assesses the status of species at risk of extinction.

#### *MECP Conservation Status Ranks*

- EXT Extinct - A species that no longer exists anywhere in the world.
- EXP Extirpated - A species that lives somewhere in the world, lived at one time in the wild in Ontario, but no longer lives in the wild in Ontario.
- END Endangered - A species that is facing imminent Extinction or extirpation.
- THR Threatened - A species that is likely to become Endangered if steps are not taken to address factors threatening to lead to its Extinction or extirpation.
- SC Special Concern – A species that may become Threatened or Endangered because of a combination of biological characteristics and identified threats.

### <sup>4</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 Jan 2022)*

<https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html>

The Act establishes Schedule 1, as the official list of wildlife species at risk. It classifies those species as being either Extirpated, Endangered, Threatened, or a Special Concern. Once listed, the measures to protect and recover a listed wildlife species are implemented.

- EXT Extinct - A wildlife species that no longer exists.  
 EXP Extirpated - A wildlife species that no longer exists in the wild in Canada, but exists elsewhere in the wild.  
 END Endangered - A wildlife species that is facing imminent extirpation or Extinction.  
 THR Threatened - A wildlife species that is likely to become Endangered if nothing is done to reverse the factors leading to its extirpation or Extinction.  
 SC Special Concern - A wildlife species that may become a Threatened or an Endangered species because of a combination of biological characteristics and identified threats.

**Schedule 1:** is the official list of species that are classified as Extirpated, Endangered, Threatened and Special Concern.

**Schedule 2:** species listed in Schedule 2 are species that had been designated as Endangered or Threatened, and have yet to be re-assessed by COSEWIC using revised criteria. Once these species have been re-assessed, they may be considered for inclusion in Schedule 1.

**Schedule 3:** species listed in Schedule 3 are species that had been designated as Special Concern, and have yet to be re-assessed by COSEWIC using revised criteria. Once these species have been re-assessed, they may be considered for inclusion in Schedule 1.

The Act establishes Schedule 1 as the official list of wildlife species at risk. However, please note that while Schedule 1 lists species that are Extirpated, Endangered, Threatened and Special Concern, the prohibitions do not apply to species of Special Concern.

Species that were designated at risk by COSEWIC prior to October 1999 (Schedule 2 & 3) must be reassessed using revised criteria before they can be considered for addition to Schedule 1 of SARA. After they have been assessed, the Governor in Council may on the recommendation of the Minister, decide on whether or not they should be added to the List of Wildlife Species at Risk.

**<sup>5</sup>Credit Valley Conservation (2010)**

Credit Valley Conservation Species of Conservation Concern Project (June 2010). These rankings are part of a draft watershed list current as of June 2010. This list is a dynamic document and subject to periodic review.

| TIER | TITLE                                  | CRITERIA   |
|------|--|--|
| 1    | Species of Conservation Concern        | Federal/provincial legislation, COSEWIC and COSSARO designations, NHIC S1-S3? ranks, local rarity (anticipated)* |
| 2    | Species of Interest                    | Local lists, CVC data, professional judgment   |
| 3    | Species of Urban Interest              | Mississauga NAS Ranks, CVC data, professional judgment   |
| 4    | Secure Species                         | CVC data, professional judgment  |
| 5    | Non-Native & Non-Native Hybrid Species | Not native to Ontario and/or the Credit River watershed but found planted or naturalized.                        |

\* An anticipated outcome is for locally rare species to be updated to Tier 1 status and for CVC to develop policy to protect these species.

### **Tier 1—Species of Conservation Concern**

Tier 1 species, Species of Conservation Concern, are either currently protected under Canada's Species At Risk Act (SARA) or Ontario's Endangered Species Act (ESA), have been designated a species at risk by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) or by the Committee on the Status of Species at Risk on Ontario (COSSARO), or have been assigned at Subnational Rank (S-rank) of S1-S3<sup>7</sup> by the Natural Heritage Information Centre (NHIC). Tier 1 species are generally characterized by low abundance, low population density, specialized habitat requirements, and/or a narrow tolerance for survival.

### **Tier 2—Species of Interest**

Tier 2 species are those that have not been identified as Species of Conservation Concern but may be at risk from extirpation from the Credit River Watershed. These species appear to be exhibiting population declines, are naturally rare, are known or suspected to be sensitive to habitat loss and the effects of urbanization, or are species for which data is lacking. CVC aims to track these species to ensure that through policy and stewardship they receive the protection they require to prevent extirpation.

### **Tier 3—Species of Urban Interest**

Species that have been designated Tier 3 are being tracked in urban areas. Urban areas are considered to be those within 2 km of built up cities or towns, including Mississauga, Brampton, Georgetown, Acton, Erin and Orangeville. Generally these species are secure in rural areas but have shown declines in or sensitivities to areas that are anthropogenically influenced or disturbed. CVC is interested in tracking these species to guide management decisions and address species declines in urban areas.

### **Tier 4—Secure Species**

Tier 4 species are currently considered to be secure in the Credit River watershed. CVC continues to record these species and their relative abundance; however their locations and exact numbers are not recorded.

### **Tier 5—Non-Native and Non-Native Hybrid Species**

Tier 5 species are those that are not native either to Ontario or to the Credit River watershed. Not all Tier 5 species are considered invasive and harmful; CVC has prioritized invasive species for management and developed a list of the Top 16 invasive species within the watershed. Data collected on these Top 16 invasive species will help guide management decisions to protect native floral and faunal biodiversity and reduce the ecological and economic impacts of invasive species.

X=Present

### **<sup>7</sup> MNR Area Sensitive Species**

Area Sensitivity is defined as species requiring large areas of suitable habitat in order to sustain population numbers

**APPENDIX E**

**SAR SCREENING**

| Taxon     | Common Name    | Scientific Name              | S-rank <sup>1</sup> | ESA Status <sup>2</sup> | SARA Status <sup>3</sup> | COSEWIC Status <sup>4</sup> | Habitat Requirements  | Probability to Occur in the Study Area   | Potential Project Impact and Mitigation  |
|-----------|----------------|------------------------------|---------------------|-------------------------|--------------------------|-----------------------------|---|--|--|
| Arthropod | Monarch        | <i>Danaus plexippus</i>      | S2N, S4B            | SC                      | SC                       | END                         | In Ontario, monarch is found throughout the northern and southern regions of the province. This butterfly is found wherever there is milkweed ( <i>Asclepias</i> spp.) plants for its caterpillars and wildflowers that supply a nectar source for adults. It is often found on abandoned farmland, meadows, open wetlands, prairies and roadsides, but also in city gardens and parks. Important staging areas during migration occur along the north shores of the Great Lakes (COSEWIC 2010).  | <b>High</b><br>Suitable habitat is present throughout much of the study area; this species is a habitat generalist and occurs frequently in the broader landscape.                                       | No individuals observed. Minimal or temporary impacts to suitable foraging / breeding habitat are anticipated (suitable habitat will regenerate following completion of proposed works).                   |
| Bird      | Bank swallow   | <i>Riparia riparia</i>       | S4B                 | THR                     | THR                      | THR                         | In Ontario, bank swallow breeds in a variety of natural and anthropogenic habitats, including lake bluffs, stream and riverbanks, sand and gravel pits, and roadcuts. Nests are generally built in a vertical or near-vertical bank. Breeding sites are typically located near open foraging sites such as rivers, lakes, grasslands, agricultural fields, wetlands and riparian woods. Forested areas are generally avoided (Garrison 1999).   | <b>Moderate</b><br>Likely to occur as foraging visitant over fields and forests throughout the study area and broader landscape. No potential nesting habitat is present within the Study Area           | Unlikely to be impacted as a foraging visitant; no confirmed nesting habitat within study area. No individuals observed.   |
| Bird      | Barn swallow   | <i>Hirundo rustica</i>       | S4B                 | SC                      | THR                      | SC                          | In Ontario, barn swallow breeds in areas that contain a suitable nesting structure, open areas for foraging, and a body of water. This species nests in human made structures including barns, buildings, sheds, bridges, and culverts. Preferred foraging habitat includes grassy fields, pastures, agricultural cropland, lake and river shorelines, cleared rights-of-way, and wetlands (COSEWIC 2011). Mud nests are fastened to vertical walls or built on a ledge underneath an overhang. Suitable nests from previous years are reused (Brown and Brown 2019).   | <b>Moderate</b><br>Likely to occur as foraging visitant over fields and forests throughout the study area and broader landscape. No potential nesting habitat is present within the Study Area           | Unlikely to be impacted as a foraging visitant; no confirmed nesting habitat within study area. No individuals observed.   |
| Bird      | Bobolink       | <i>Dolichonyx oryzivorus</i> | S4B                 | THR                     | THR                      | THR                         | In Ontario, bobolink breeds in grasslands or graminoid dominated hayfields with tall vegetation (Gabhauer 2007). Bobolink prefers grassland habitat with a forb component and a moderate litter layer. They have low tolerance for presence of woody vegetation and are sensitive to frequent mowing within the breeding season. They are most abundant in established, but regularly maintained, hayfields, but also breed in lightly grazed pastures, old or fallow fields, cultural meadows and newly planted hayfields. Their nest is woven from grasses and forbs. It is built on the ground, in dense vegetation, usually under the cover of one or more forbs (Renfrew et al. 2015). | <b>High</b><br>Potential breeding and foraging habitat is present in the large Cultural Meadow present within the Study Area, and recent records indicate potential presence during the breeding season. | Unlikely to be impacted as foraging / migrating visitant and the proposed works will be mostly outside of the potential breeding habitat. Further assessment should be undertaken at future design phases. |
| Bird      | Canada warbler | <i>Cardellina canadensis</i> | S4B                 | SC                      | THR                      | SC                          | In Ontario, breeding habitat for Canada warbler consists of moist mixed forests with a well-developed shrubby understory. This includes low-lying areas such as cedar and alder swamps, and riparian thickets (McLaren 2007). It is also found in densely vegetated regenerating forest openings. Suitable habitat often contains a developed moss layer and an uneven forest floor. Nests are well concealed on or near the ground in dense shrub or fern cover, often in stumps, fallen logs, overhanging stream banks or mossy hummocks (Reitsma et al. 2010).   | <b>None</b><br>Suitable habitat is present in the broader landscape, however no suitable forest habitat is present within the Study Area.  | No nesting or foraging habitat present within the Study Area. Individuals unlikely to be impacted during migration.  |

| Taxon  | Common Name                                     | Scientific Name                                     | S-rank <sup>1</sup> | ESA Status <sup>2</sup> | SARA Status <sup>3</sup> | COSEWIC Status <sup>4</sup> | Habitat Requirements   | Probability to Occur in the Study Area  | Potential Project Impact and Mitigation  |
|--------|---|---|---------------------|-------------------------|--------------------------|-----------------------------|--|---|--|
| Bird   | Chimney swift                                   | <i>Chaetura pelagica</i>                            | S3B                 | THR                     | THR                      | THR                         | In Ontario, chimney swift breeding habitat is varied and includes urban, suburban, rural and wooded sites. They are most commonly associated with towns and cities with large concentrations of chimneys. Preferred nesting sites are dark, sheltered spots with a vertical surface to which the bird can grip. Unused chimneys are the primary nesting and roosting structure, but other anthropogenic structures and large diameter cavity trees are also used (COSEWIC 2007).   | <b>Moderate</b><br>Likely to occur as foraging visitant over fields and forests throughout the study area and broader landscape. No potential nesting habitat is present within the Study Area  | Unlikely to be impacted as a foraging visitant; no confirmed nesting habitat within study area.  |
| Bird   | Eastern meadowlark                              | <i>Sturnella magna</i>                              | S4B                 | THR                     | THR                      | THR                         | In Ontario, eastern meadowlark breeds in pastures, hayfields, meadows and old fields. Eastern meadowlark prefers moderately tall grasslands with abundant litter cover, high grass proportion, and a forb component (Hull 2019). They prefer well drained sites or slopes, and sites with different cover layers (Roseberry and Klimstra 1970).  | <b>High</b><br>Potential breeding and foraging habitat is present in the large Cultural Meadow present within the Study Area, and recent records indicate potential presence during the breeding season.  | Unlikely to be impacted as foraging / migrating visitant and the proposed works will be mostly outside of the potential breeding habitat. Further assessment should be undertaken at future design phases.       |
| Bird   | Eastern wood-pewee                              | <i>Contopus virens</i>                              | S4B                 | SC                      | SC                       | SC                          | In Ontario, eastern wood-pewee inhabits a wide variety of wooded upland and lowland habitats, including deciduous, coniferous, or mixed forests. It occurs most frequently in forests with some degree of openness. Intermediate-aged forests with a relatively sparse midstory are preferred. In younger forests with a relatively dense midstory, it tends to inhabit the edges. Also occurs in anthropogenic habitats providing an open forested aspect such as parks and suburban neighborhoods. Nest is constructed atop a horizontal branch, 1-2 m above the ground, in a wide variety of deciduous and coniferous trees (COSEWIC 2012). | <b>None</b><br>Suitable habitat is present in the broader landscape, however no suitable forest habitat is present within the Study Area.   | No nesting or foraging habitat present within the Study Area. Individuals unlikely to be impacted during migration.  |
| Bird   | Grasshopper sparrow <i>pratensis</i> subspecies | <i>Ammodramus savannarum (pratensis subspecies)</i> | S4B                 | SC                      | SC                       | SC                          | In Ontario, grasshopper sparrow is found in medium to large grasslands with low herbaceous cover and few shrubs. It also uses a wide variety of agricultural fields, including cereal crops and pastures. Close-grazed pastures and limestone plains (e.g. Carden and Napanee Plains) support highest density of this bird in the province (COSEWIC 2013).   | <b>High</b><br>Potential breeding and foraging habitat is present in the large Cultural Meadow present within the Study Area.   | Unlikely to be impacted as foraging / migrating visitant and the proposed works will be mostly outside of the potential breeding habitat. Further assessment should be undertaken at future design phases.       |
| Bird   | Red-headed woodpecker                           | <i>Melanerpes erythrocephalus</i>                   | S4B                 | END                     | END                      | END                         | In Ontario, red-headed woodpecker breeds in open, deciduous woodlands or woodland edges and are often found in parks, cemeteries, golf courses, orchards and savannahs (Woodliffe 2007). They may also breed in forest clearings or open agricultural areas provided that large trees are available for nesting. They prefer forests with little or no understory vegetation. They are often associated with beech or oak forests, beaver ponds and swamp forests where snags are numerous. Nests are excavated in the trunks of large dead trees (Frei et al. 2017).  | <b>Moderate</b><br>Suitable nesting habitat present in treed areas within broader study area, including hedgerows with mature trees.  | Unlikely to be impacted as a foraging visitant; no confirmed nesting habitat within study area. Large tree are not expected to be removed or disturbed.  |
| Mammal | Eastern small-footed myotis                     | <i>Myotis leibii</i>                                | S2S3                | END                     | —                        | —                           | In Ontario, eastern small-footed myotis is not known to roost in trees, but there is very little known about its roosting habits. The species generally roosts on the ground under rocks, in rock crevices, talus slopes and rock piles, but it occasionally inhabits buildings. Entrances of caves or abandoned mines where humidity is low, and temperatures are cool and sometimes subfreezing may be used as hibernacula (Humphrey 2017).  | <b>Low</b><br>Suitable habitat is present in the broader landscape, however no suitable forest habitat is present within the Study Area. Limited day roost habitat may be present in the hedgerow with mature trees. No rock piles were observed during the field survey. | Unlikely to be impacted as foraging visitant (majority of works to occur during daytime, when bats are not active in area); no suitable roosting habitat (rock outcrops, crevices) identified within study area. |

| Taxon          | Common Name         | Scientific Name               | S-rank <sup>1</sup> | ESA Status <sup>2</sup>                                 | SARA Status <sup>3</sup> | COSEWIC Status <sup>4</sup> | Habitat Requirements   | Probability to Occur in the Study Area   | Potential Project Impact and Mitigation  |
|----------------|---------------------|-------------------------------|---------------------|---|--------------------------|-----------------------------|--|--|--|
| Mammal         | Little brown myotis | <i>Myotis lucifugus</i>       | S3                  | END   | END                      | END                         | In Ontario, this species' range is extensive and covers much of the province. It will roost in both natural and man-made structures. Roosting colonies require a number of large dead trees, in specific stages of decay and that project above the canopy in relatively open areas. May form nursery colonies in the attics of buildings within 1 km of water. Caves or abandoned mines may be used as hibernacula, but high humidity and stable above freezing temperatures are required (ECCC 2018).  | <b>Low</b><br>Suitable habitat is present in the broader landscape, however no suitable forest habitat is present within the Study Area. Limited day roost habitat may be present in the hedgerow with mature trees. | Unlikely to be impacted as foraging visitant (majority of works to occur during daytime, when bats are not active in area); no suitable forested habitat identified within Study Area. |
| Mammal         | Northern myotis     | <i>Myotis septentrionalis</i> | S3                  | END   | END                      | END                         | In Ontario, this species' range is extensive and covers much of the province. It will usually roost in hollows, crevices, and under loose bark of mature trees. Roosts may be established in the main trunk or a large branch of either living or dead trees. Caves or abandoned mines may be used as hibernacula, but high humidity and stable above freezing temperatures are required (ECCC 2018).  | <b>Low</b><br>Suitable habitat is present in the broader landscape, however no suitable forest habitat is present within the Study Area. Limited day roost habitat may be present in the hedgerow with mature trees. | Unlikely to be impacted as foraging visitant (majority of works to occur during daytime, when bats are not active in area); no suitable forested habitat identified within Study Area. |
| Mammal         | Tri-colored bat     | <i>Perimyotis subflavus</i>   | S3?                 | END   | END                      | END                         | In Ontario, tri-colored bat may roost in foliage, in clumps of old leaves, hanging moss or squirrel nests. They are occasionally found in buildings although there are no records of this in Canada. They typically feed over aquatic areas with an affinity to large-bodied water and will likely roost in close proximity to these. Hibernation sites are found deep within caves or mines in areas of relatively warm temperatures. These bats have strong roost fidelity to their winter hibernation sites and may choose the exact same spot in a cave or mine from year to year (ECCC 2018). | <b>Low</b><br>Suitable habitat is present in the broader landscape, however no suitable forest habitat is present within the Study Area. Limited day roost habitat may be present in the hedgerow with mature trees. | Unlikely to be impacted as foraging visitant (majority of works to occur during daytime, when bats are not active in area); no suitable forested habitat identified within Study Area. |
| Reptile        | Snapping turtle     | <i>Chelydra serpentina</i>    | S4                  | SC  | SC                       | SC                          | In Ontario, snapping turtle uses a wide range of waterbodies, but shows preference for areas with shallow, slow-moving water, soft substrates and dense aquatic vegetation. Hibernation takes place in soft substrates under water. Nesting sites consist of sand or gravel banks along waterways or roadways (COSEWIC 2008).  | <b>Low</b><br>Marginal habitat may be present in the watercourse that bisects the Study Area, however given its intermittent nature, it does not provide suitable habitat for this species life history.             | Habitat within the Study Area is extremely limited, and individuals are not anticipated to be impacted by the proposed works.  |
| Vascular Plant | Black ash           | <i>Fraxinus nigra</i>         | S3                  | END (temporary suspension of protection until Jan 2024) | —                        | THR                         | Found throughout Ontario in moist ecosystems; commonly found in northern swampy woodlands (MNR 2018). This species typically grows on mucky or peaty soils and is considered a facultative wetland species (Reznicek et al. 2011).   | <b>Low</b><br>Suitable habitat is present in the broader landscape, however no suitable swamp habitat is present within the Study Area.  | No Black Ash observed within the Study Area and no habitat is present. No direct / recent records in the project vicinity.   |
| Vascular Plant | Butternut           | <i>Juglans cinerea</i>        | S2?                 | END   | END                      | END                         | In Ontario, butternut is found along stream banks, on wooded valley slopes, and in deciduous and mixed forests. It is commonly associated with beech, maple, oak and hickory (Voss and Reznicek 2012). Butternut prefers moist, fertile, well-drained soils, but can also be found in rocky limestone soils. This species is shade intolerant (Farrar 1995).   | <b>Moderate</b><br>Suitable habitat is present throughout the broader landscape and marginal habitat is present within the Study Area. This species is generally known to occur in the vicinity Study Area.          | No Butternut observed within the Study Area and no direct / recent records in the project vicinity   |

<sup>1</sup> Provincial Ranks (SRANK) are Rarity Ranks assigned to a species or ecological communities, by the Natural Heritage Information Centre (NHIC). These ranks are not legal designations. SRANKS are evaluated by NHIC on a continual basis and updated lists produced annually. SX (Presumed Extirpated), SH (Possibly Extirpated - Historical), S1 (Critically Imperiled), S2 (Imperiled), S3 (Vulnerable), S4 (Apparently Secure), S5 (Secure), SNA (Not Applicable), S#S# (Range Rank), S? (Not ranked yet), SAB (Breeding Accident), SAN (Non-breeding Accident), SX (Apparently Extirpated). Last assessed November 2019.

<sup>2</sup> Endangered Species Act (ESA), 2007. General (O.Reg 242/08 last amended 1 April 2021 as O. Reg 228/21). Species at Risk in Ontario List (O.Reg 230/08 last amended 26 January 2022 as O. Reg. 24/22); Schedule 1 (Extirpated - EXP), Schedule 2 (Endangered - END), Schedule 3 (Threatened - THR), Schedule 4 (Special Concern - SC)

<sup>3</sup> Species at Risk Act (SARA), 2002. Schedule 1 (Last amended 01 September 2021); Part 1 (Extirpated), Part 2 (Endangered), Part 3 (Threatened), Part 4 (Special Concern)

<sup>4</sup> Committee on the Status of Endangered Wildlife in Canada (COSEWIC)



**APPENDIX F**

**REPRESENTATIVE SITE  
PHOTOGRAPHS**



Photo 1: View of the maple dominated hedgerow and north-western cultural meadow. View looking northwest, Oct 11, 2022.



Photo 2: View of the northwestern cultural meadow, which provides potential Bobolink / Eastern Meadowlark habitat. View looking northwest, Oct 11, 2022.



Photo 3: View of the northwestern cultural meadow, which provides potential Bobolink / Eastern Meadowlark habitat. View looking southwest, Oct 11, 2022.



Photo 4: View of the western cultural meadow (south of Road 109), which provides potential Bobolink / Eastern Meadowlark habitat. View looking west, Oct 11, 2022.



Photo 5: View of the western cultural meadow (south of Road 109), which provides potential Bobolink / Eastern Meadowlark habitat. View looking southeast, Oct 11, 2022.



Photo 6: View of the western cultural meadow (south of Road 109), which provides potential Bobolink / Eastern Meadowlark habitat. View looking south, Oct 11, 2022.



Photo 7: View of the typical roadside / agricultural land use within the Study Area, on County Road 3. View looking south-east, Oct 11, 2022.



Photo 8: View of small eastern patch of cultural meadow. View looking southwest, Oct 11, 2022.



County of Dufferin Rd 109 / 2nd Line Realignment  
REPRESENTATIVE SITE PHOTOGRAPHS

Date: October 2023

Project No: 221-08590-00

Appendix F

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