



BURNSIDE

**Natural Environment Report
Revision 1
Victoria Road, Stone Road and
Structure 116 Environmental
Assessment**

City of Guelph

**R.J. Burnside & Associates Limited
292 Speedvale Avenue West Unit 20
Guelph ON N1H 1C4 CANADA**

**April 2026
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1.0 Introduction

Guelph is one of the fastest growing communities in Canada. Based on recommendations in the 2022 Transportation Master Plan and the Guelph Innovation District Secondary Plan, upgrades are needed to several key roads in Guelph to support new neighbourhoods planned in the Guelph Innovation District. R.J. Burnside & Associates Limited (Burnside) was retained by the City of Guelph (City) to study how to design the roads and bridges people will rely on as part of their everyday lives, including widening two arterial roads.

A Municipal Class Environmental Assessment (MCEA) was initiated for Victoria Road South, from York Road to Stone Road; Stone Road East, from Victoria Road South to Watson Parkway South; and Structure 116, commonly known as McQuillan's Bridge. The study area is shown on Figure 1.

In addition to the MCEA, the study will include preliminary design of several key pieces of underground infrastructure which will support new neighbourhoods, such as sanitary sewers and watermains.

With public input, the study will identify and recommend:

- A preferred solution and preliminary design for McQuillan's Bridge (Structure 116, Eramosa River)
- A preferred solution and preliminary design for improvements to Victoria Road South, including road bridge Structure 115 (Eramosa River) in addition to safe trail access across Victoria Road South
- A preferred solution and preliminary design for improvements to Stone Road East, including road bridge Structure 117 (Eramosa River)

This Natural Heritage Report (NER) is being prepared as one of several technical studies that will support the MCEA study, with a specific focus on the natural features present in the study area. To prepare this report, Burnside ecologists completed the following:

1. Summarized relevant federal, provincial and municipal natural heritage regulations, policies and plans
2. Reviewed existing records and conduct field investigations to identify natural features in the study area that are subject to the regulations, policies and plans noted under bullet 1, above
3. Identified how natural features should be prioritized and avoided, and what permissions and approvals may be required if avoidance is not possible

A full assessment of impacts to natural features as a result of the project is not included in this report. A preferred solution has not yet been identified as of the date this report was prepared. A detailed ecological impact assessment will be included in the MCEA documentation.

It is also noted that separate MCEA reports are being prepared for the road projects (Victoria Road. and Stone Road.) and Structure 116 / McQuillan's Bridge. This report covers the study area for both projects.

This revision has been prepared to address comments on the first submission from the City of Guelph dated November 17, 2025, and GRCA dated October 29, 2025. The Terms of Reference for this report is provided in Appendix H.



 Study Area



Datum: North American 1983
Coord. System: NAD 1983 UTM Zone 17N
Projection: Transverse Mercator
Central Meridian: 81°0'0.00"W
False Easting: 500,000m
False Northing: 0m
Scale Factor: 0.99980
Rotation: 0

Drawn By: HH
Checked By: SY
Client: City of Guelph
Project: Victoria Road, Stone Road and Structure 116
Environmental Assessment
Project Number: 300059860
Date: 2025/10/14

0 100 200 300 400 500
Metres
1:12,500



1

2.0 Regulations, Policies and Plans

There are several regulations, policies and plans that guide development in and around natural features (Figure 2), as summarized in the following paragraphs.

Fisheries Act

The federal Fisheries Act prohibits causing the “*death of fish by means other than fishing*”, and the “*harmful alteration, disruption or destruction (HADD) of fish habitat*”. If construction activities have the potential to cause the death of fish, or HADD of fish habitat, then the project must be submitted to the Department of Fisheries and Oceans (DFO) as a Request for Review. The proponent responsible for the activities is required to obtain an Authorization from DFO as per Paragraph 34.4(2) and 35(2)(b) of the Fisheries Act.

If project activities occur below the highwater mark of any identified watercourses or headwater drainage features, an assessment of potential impacts to fish and fish habitat is required. DFO has provided standardized Codes of Practice and Measures to Protect Fish and Fish Habitat to mitigate contraventions of the Fisheries Act.

Migratory Birds Convention Act and Migratory Birds Regulations

The *Migratory Birds Convention Act, 1994* (MBCA) and the Migratory Bird Regulations, 2022 (MBR) are federal legislative requirements that are binding on members of the public and all levels of government, including federal and provincial governments.

One key responsibility under the MBCA is described in Section 6 of the associated MBR:

“Subject to subsection 5(9), no person shall disturb, destroy or take a nest, egg, nest shelter, eider duck shelter, or duck box of a migratory bird, or have in his possession a live migratory bird, or a carcass, skin, nest or egg of a migratory bird except under authority of a permit therefor.”

The “incidental take” of migratory bird nests or the disturbance, destruction or taking of the nest of a migratory bird are prohibited under Section 6 of the MBR under the authority of the MBCA. Nests’ contents (eggs and young) are protected by virtue of the MBCA which has implications on development and construction activities that might occur during the breeding season (Canadian Wildlife Service, July 2012).

Provincial Planning Statement (2024)

The 2024 Provincial Planning Statement (PPS) is the complimentary policy document to the Planning Act, 1990 that provides provincial guidance on how development should proceed.

Eight types of natural heritage features are identified in Section 4.1 of the PPS. In summary, development and site alteration are not permitted within:

- Significant wetlands in Ecoregions 5E, 6E and 7E
- Significant coastal wetlands

Development and site alteration are also not permitted within, or adjacent to, the following features unless it can be demonstrated that there will be no negative impacts to the feature or its ecological functions:

- Significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E
- Significant woodlands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River)
- Significant valleylands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River)
- Significant Wildlife Habitat (SWH)
- Significant Areas of Natural and Scientific Interest (ANSI)
- Coastal wetlands in Ecoregions 5E, 6E and 7E

In addition, development, and site alteration on, and adjacent to, fish habitat and the habitat of endangered and threatened species will only be permitted in accordance with provincial and federal regulatory requirements.

It is noted that these policies refer to “development and site alteration” in Ontario. Under the definitions section, the PPS notes that “development” does not include, “activities that create or maintain infrastructure authorized under an environmental assessment process.” Thus, the restrictions on development with the key natural features listed in Section 4.1 do not apply to road construction and widening, municipal water and sewage works and bridge construction and maintenance. However, it is the City’s intent to protect natural features, avoid negative impacts and mitigate negative impacts where they cannot be avoided.

2.1 Species Conservation Act, 2025

The Species Conservation Act, 2025 (SCA) is Ontario’s provincial statute governing the identification, protection, and management of species at risk (SAR). It replaces the former Endangered Species Act, 2007 (ESA) and reflects a shift towards integrating biodiversity conservation with economic and land-use considerations. The SCA has two main objectives:

- To identify species at risk using scientific, community, and Indigenous knowledge
- To protect and conserve species while considering social and economic factors, including sustainable development

O. Reg. 60/26 – Protected Species in Ontario List provides a full list of species that are protected under the SCA. This list includes species classified as extirpated, endangered or threatened species listed by the Committee on the Status of Species at Risk in Ontario (COSSARO), with the exception of aquatic species and migratory birds which are protected under the federal SARA. Species designated as Extirpated, Endangered and Threatened are included on the on the Protected Species in Ontario (PSO) list.

O. Reg. 61/26 – Excepted Activities provides a list of activities that do not require a permit or registration. The following are activities listed under O. Reg. 61/26 that relate to the development industry:

- Protecting a person or animal from an imminent risk to health and safety
- Trapping, incidental killing, harming, capturing, or taking, etc.
- Black Ash or Butternut that are identified as unhealthy (as determined by a professional)

O. Reg. 74/26 – Permit Activities provides a list of activities that require a permit. These activities include killing, harming, capturing, or taking a species as the primary purpose of the activity and is not an incidental results of a broader activity. These activities also include possessing, transporting, collecting, buying, or selling species. It is unlikely that activities associated with development will fall within this regulation.

O.Reg. 75/26 – Registrable Activities provides a list and required actions when registering an activity through the Species Conservation Registry. Registration of an activity will require the creation of a Conservation Plan, Mitigation Measures, Conservation Measures, Training, Monitoring, and Annual Reporting.

City of Guelph Official Plan (February 2024 Consolidation)

The City has identified a Natural Heritage System (NHS) that is comprised of Significant Natural Areas, Natural Areas and Wildlife Crossings.

Significant Natural Areas include:

- Significant Areas of Natural and Scientific Interest (ANSI)
- Habitat of Endangered Species and Threatened species
- Significant Wetlands
- Fish Habitat and permanent and intermittent streams
- Significant Woodlands
- Significant Valleylands
- Significant Landform
- Significant Wildlife Habitat (including Ecological Linkages)
- Restoration Areas
- Minimum or established buffers (where applicable)

Natural Areas include:

- Other Wetlands
- Cultural Woodlands
- Habitat of Significant Species
- Established buffers (where applicable)

Section 4.1.2 of the Official Plan indicates that development and site alteration are generally not permitted within the NHS. Certain exceptions exist, including, “City infrastructure, where essential and authorized under an EA, may be permitted within the Natural Heritage System”. In order to be permissible, the EA must demonstrate that there will be no negative impact on natural features and the project must result in a net ecological gain, among other requirements.

Schedule 4 of the City’s Official Plan shows that there are Significant Natural Areas, Ecological Linkages and Wildlife Crossing Opportunities in the study area. A clip of Schedule 4 is presented in Figure 2A.

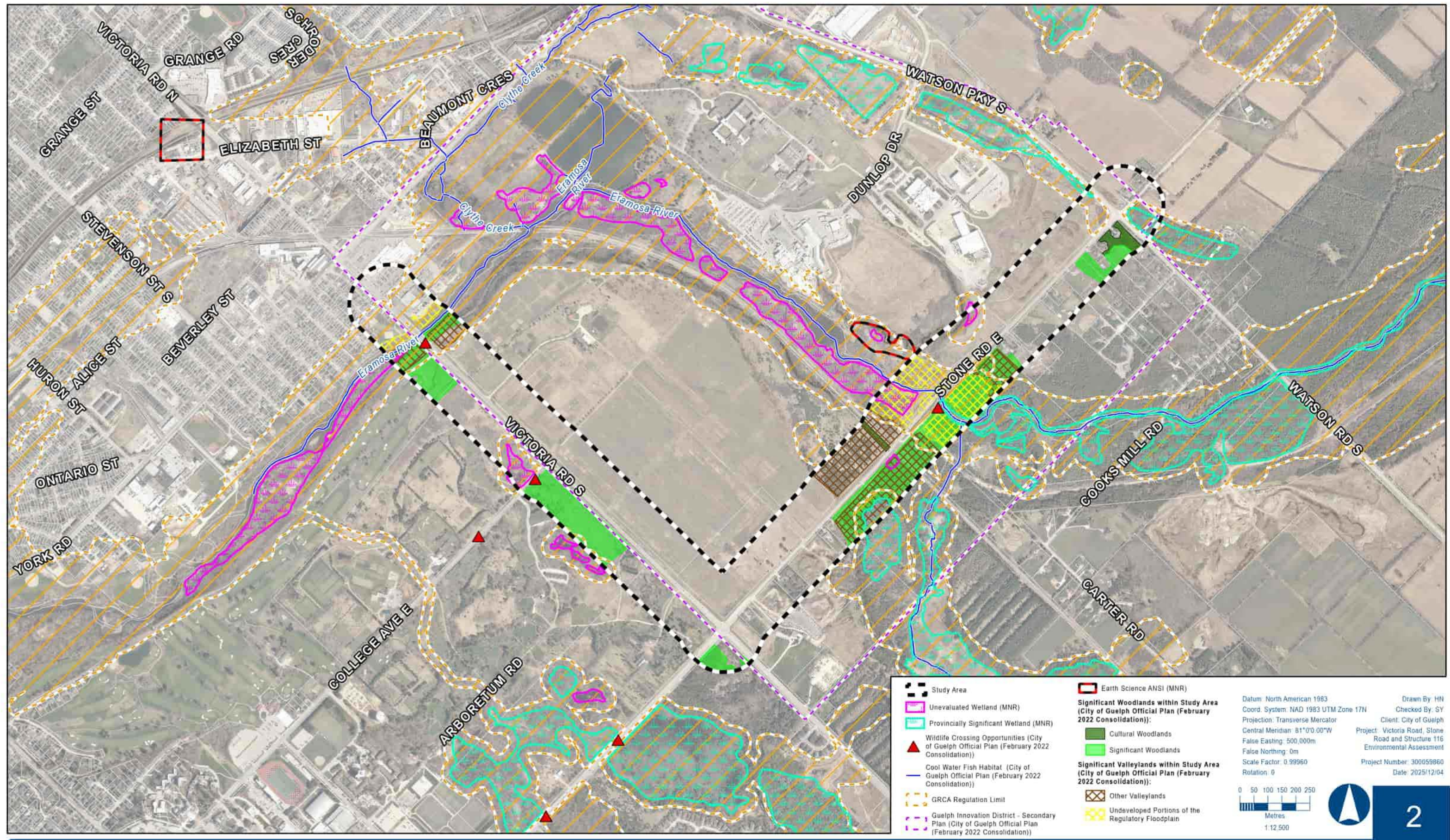
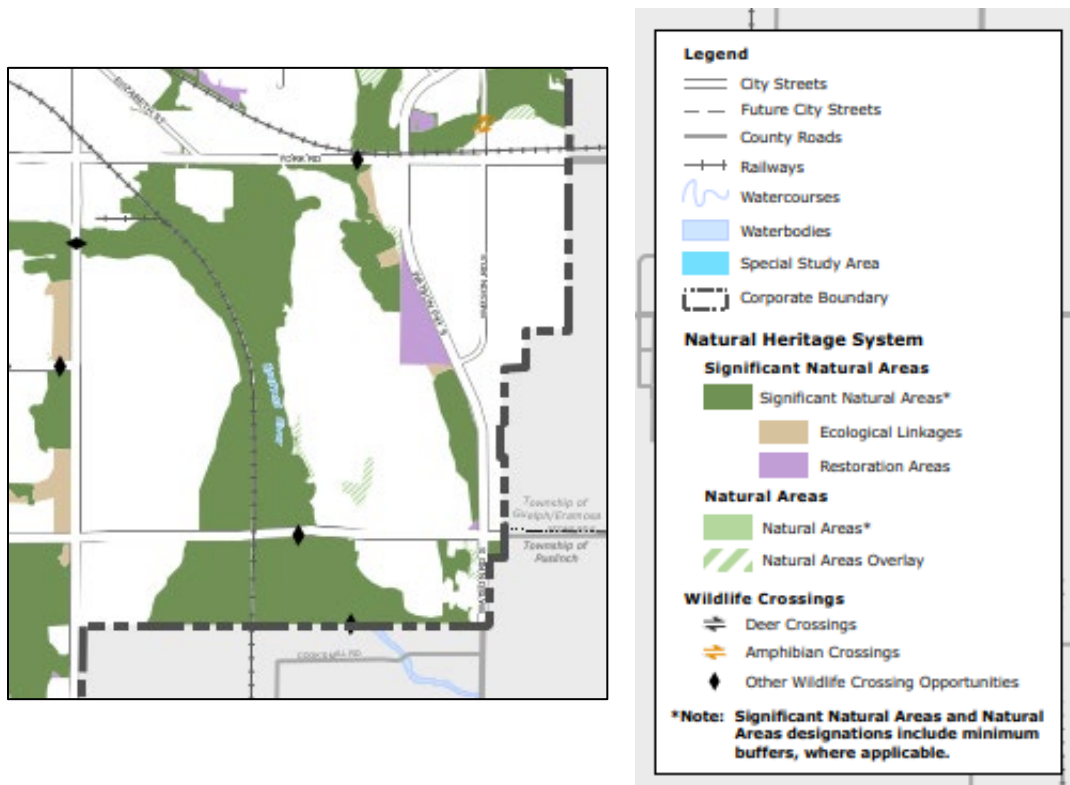


Figure 2A: Official Plan Schedule 4: Natural Heritage System, Clipped to the Study Area

Guelph Innovation District Secondary Plan

The Guelph Innovation District (GID) Secondary Plan provides specific guidance on future development in the GID area. A NHS similar to the one shown in the Official Plan is identified. Section 11.2.2.1 of the Secondary Plan notes that, “The Natural Heritage System shall be protected, maintained, restored and enhanced so that it may fill its role as the centerpiece of the GID”. In addition, “The City will identify and support opportunities to provide greater public access to the Natural Heritage System”. This will be accomplished through development of a formal trail network through the NHS, along the Eramosa River corridor.

Grand River Conservation Authority Regulations

On April 1, 2024, the 36 distinct conservation authority regulations were revoked and consolidated under a single Minister's regulation governing prohibited activities, exemptions, and permits under the *Conservation Authorities Act* (O.Reg 41/24). The regulation limits development on lands which may pose natural hazards, such as wetlands, watercourses, floodplains, erosion-prone lands and lands directly beside these features.

The study area includes lands regulated by the Grand River Conservation Authority (GRCA). A permit under O.Reg 41/24 will be required from the GRCA for works within the regulated areas.

Regulation, Policy and Planning Summary

In summary, the following natural features are subject to the requirements and guidelines of various regulations, policies and plans:

- Significant wetlands
- Significant woodlands
- Significant valleylands
- Significant Wildlife Habitat (SWH)
- Significant Areas of Natural and Scientific Interest (ANSI)
- Fish habitat
- Habitat of Endangered and Threatened species
- The City's Natural Heritage System, including Significant Natural Areas, Ecological Linkages and Wildlife Crossing Opportunities
- Migratory birds
- Natural hazard lands, including watercourses, wetlands, steep valley slopes, and floodplains

The purpose of this study is to identify these features within the study area and to design the proposed project in a manner that avoids and/or mitigates impacts to these features.

3.0 Methodology

3.1 Study Area

The study area included all lands within 120 m of the existing rights-of-way for Victoria Road South, from York Road to Stone Road and Stone Road East, from Victoria Road South to Watson Parkway South. The study area also included 120 m around Structure 116, commonly known as McQuillan's Bridge.

3.2 Records Review

A combination of secondary source information and on-site field investigations were used to identify the presence of the protected natural features described in Section 2.0 in the study area.

A comprehensive desktop assessment was completed to review existing natural heritage information available for the study area. All records within, and in close proximity to, the study area were reviewed as part of the high-level assessment to identify significant natural heritage features that may be impacted by the road and bridge projects.

Information reviewed included, but was not limited to, the following sources:

- Aerial photographic imaging and 1:10,000 Ontario Base Mapping (OBM)
- DFO Aquatic SAR mapping
- Ministry of Natural Resources (MNR) Make a Map: Natural heritage Areas to identify natural heritage features and Natural Heritage Information Centre (NHIC) data of rare wildlife species on, and in the vicinity of, the subject lands: 1x1 km² Squares: 17NJ6222, 17NJ6221, 17NJ6322, 17NJ6321, 17NJ6422, 17NJ6421, 17NJ6522, and 17NJ6521
- MNR Land Information Ontario (LIO) database
- MNR Aquatic Resource Area (ARA) summary data
- MNR Online GeoHub Search (Nesting Sites, White-tailed Deer Wintering Areas)
- Ontario Hydrology Network (OHN) mapping
- The Ontario Breeding Bird Atlas (OBBA) 2001-2005 – 10 x 10 km² Square 17NJ62
- Ontario Reptile and Amphibian Atlas (ORAA) – 10 x 10 km² Square 17NJ62
- iNaturalist records
- eBird records
- GRCA Regulated Areas and features mapping
- City of Guelph Official Plan (February 2024 Consolidation) and Official Plan Amendment (OPA) 42 (June 2014 Consolidation)
- Guelph Innovation District Lands, Blocks 1 & 2, Guelph Environmental Impact Study (NRSI, 2025)

- Phase 1 Environmental Impact Study Natural Heritage Characterization Report (AECOM, 2022)
- City of Guelph Natural Heritage Strategy Phase I: Terrestrial Inventory Design & Defining Locally Significant Natural Areas (Dougan & Associates, 2005)
- City of Guelph Natural Heritage Strategy Phase 2: Terrestrial Inventory & Natural Heritage System. Volume 1 – Report (Dougan & Associates, 2009)

3.3 Field Investigations

In addition, field investigations were carried out over multiple days between June and September 2025, as described in Table 3.1. All studies were carried out from within the City-owned road rights-of-way or nearest publicly accessible vantage point. Survey locations are shown on Figure 3.

Table 3.1: Natural Environment Field Investigations

Field Study	Methodology	Location	Staff Involved	Date(s)	Time of Day	Weather Conditions
						(Air Temp °C / Beaufort Sky Code ¹ / Wind Scale ²)
Ecological Land Classification and Botanical Inventory	Ecological Land Classification for Southern Ontario (Lee et al.,1998)	Full Study Area	E. Mekli Ecologist	June 16, 2025	09:00 – 16:00	Start: 20°C; End: 29°C Sky: 1 Wind: 2
			S. Yoshida Ecologist	June 20, 2025	10:06 – 17:54	Start: 20°C; End: 24°C Sky: 1 Wind: 3
			S. Yoshida Ecologist	August 19, 2025	09:15 – 13:00	Start: 18°C; End: 21°C Sky: 2 Wind:1
			S. Yoshida Ecologist	August 20, 2025	09:30 – 11:15	Start: 18°C; End: 20°C Sky: 2 Wind: 2
			E. Mekli Ecologist	August 22, 2025	09:00 – 15:50	Start: 18°C; End: 27°C Sky: 2 Wind: 2
			E. Mekli Ecologist	September 19, 2025	09:25 - 15:00	Start: 20°C; End: 24°C Sky: 2 Wind: 2
			S. Yoshida Ecologist	September 23, 2025	13:40 – 18:10	Start: 22°C; End: 21°C Sky: 2 Wind: 1
Breeding Bird Survey and Bobolink / Eastern Meadowlark Survey	Two surveys at least ten days apart using the method in the Ontario Breeding Bird Atlas Guide for Participants (BSC, March 2001). Three surveys at least seven to ten days apart using the method in the Survey Protocol for Eastern Meadowlark in Ontario (MNR, August 2013). Note: the June 11 survey was a Bobolink / Eastern Meadowlark survey only. All other surveys used both methodologies noted above.	Survey locations shown on Figure 3	S. Yoshida Ecologist	June 3, 2025	06:45 – 10:41	Start: 8°C; End: 22°C Sky: 2 Wind: 1
			S. Yoshida Ecologist	June 6, 2025	08:19 – 10:12	Start: 16°C; End: 22°C Sky: 2 Wind: 2
			S. Yoshida Ecologist	June 11, 2025	07:52 – 08:42	Start: 15°C; End: 16°C Sky: 1 Wind: 2
			S. Yoshida Ecologist	June 17, 2025	06:24 – 10:32	Start: 14°C; End: 22°C Sky: 1 Wind: 2
			S. Yoshida Ecologist	June 18, 2025	08:10 – 09:33	Start: 22°C; End: 223°C Sky: 2 Wind: 1

Field Study	Methodology	Location	Staff Involved	Date(s)	Time of Day	Weather Conditions
						(Air Temp °C / Beaufort Sky Code ¹ / Wind Scale ²)
Amphibian Breeding Call Surveys	Marsh Monitoring Program Participant’s Handbook for Surveying Amphibians (BSC, 2009) Note: Three surveys are typically completed- one in each of April, May and June. The April survey was not completed due to the timing of project commencement.	Survey locations shown on Figure 3	Sarah Yoshida, Ecologist	May 29, 2025	21:23 -	Start: 14°C; End: 12°C Sky: 2 Wind: 3
			Heather Neary GIS Specialist			
			Sarah Yoshida, Ecologist	June 24, 2025	21:38 – 22:20	Start: 25°C; End: 24°C Sky: 1 Wind: 0
			Heather Neary GIS Specialist			
Aquatic Habitat Assessment	Ontario Ministry of Transportation (MTO) Fisheries Protocol – Environmental Guide for Fish and Fish Habitat (June 2009)	Eramosa River, up and downstream of McQuillan’s Bridge	Mark Saunders Aquatic Ecologist	August 19, 2025	09:00 – 11:00	Start: 18°C; End: 19°C Sky: 2 Wind:1
Search for potential wildlife habitats	Survey throughout study areas to search for features that could provide habitat for wildlife or SAR habitat such as: Nests, reptile hibernacula, old barns, structures, uncapped chimneys, foundations, mature forest areas with cavities or other features suitable for bat roosting, turtle nesting or overwintering sites	Full Study Area	All staff	Concurrent during all other field investigations.		
Incidental flora and fauna observations	Visual observations of animals, tracks or scat and compilation of a plant inventory during all site visits.	Full Study Area	All staff	Concurrent during all other field investigations.		

¹NAAMP / Beaufort Sky Codes

- 0 = clear (no cloud cover)
- 1 = partly cloudy (scattered or broken) or variable
- 2 = cloudy or overcast
- 3 = sandstorm, dust storm, or blowing snow
- 4 = fog, smoke, thick dust, or haze
- 5 = drizzle or light rain
- 6 = rain
- 7 = snow or snow / rain mix
- 8 = showers
- 9 = thunderstorms

²Beaufort Wind Scale

- 0 = calm, smoke rises vertically (0-2 km/hr)
- 1 = light air movement, smoke drifts (3-5)
- 2 = slight breeze, wind felt on face; leaves rustle (6-11)
- 3 = gentle breeze, leaves & twigs in constant motion (12-19)
- 4 = moderate breeze, small branches moving, raises dust & loose paper (20-30)
- 5 = fresh breeze, small trees begin to sway (31-39)
- 6 = strong breeze, large branches in motion (40-50)



3.4 Assessment of the Significance of Natural Features

A variety of guidance documents were used to assess the findings of the background review and field investigations to determine whether the natural features in the area meet the definitions and criteria required to be awarded the protections of the various applicable regulations, plans and policies.

Table 3.2 lists the documents and associated criteria used to assess the significance of natural features.

Table 3.2: Criteria Used to Determine Feature Significance

Natural Feature	Source of Criteria Used to Determine Significance
Provincially Significant Wetlands	- Existing provincial mapping from Land Information Ontario - GRCA online mapping - Schedule 4A of the City's Official Plan
Other Wetlands	- GRCA online mapping - Schedule 4A of the City's Official Plan
Significant Woodlands	Schedule 4C of the City's Official Plan
Significant Valleylands	Schedule 4D of the City's Official Plan
Significant Areas of Natural and Scientific Interest (ANSI)	- Existing provincial mapping from Land Information Ontario - Schedule 4A of the City's Official Plan
Significant Wildlife Habitat	- Natural Heritage Reference Manual (MNR, 2010) - Significant Wildlife Habitat Technical Guide (MNR, 2000) - Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E (2015)
Watercourses and Fish Habitat	- GRCA online mapping - Schedule 4B of the City's Official Plan
Habitat of Endangered and Threatened Species	- Species at Risk in Ontario List, as updated from time to time in accordance with the Species Conservation Act - Various species-specific regulations
The City's Natural Heritage System, including Significant Natural Areas, Ecological Linkages and Wildlife Crossing Opportunities	- Schedules 4A through 4E of the City's Official Plan - Schedule B of the GID Secondary Plan
Natural hazard lands, including watercourses, wetlands, steep valley slopes, and floodplains	- GRCA online mapping - O.Reg 41/24

3.5 Species Rarity and Nomenclature

All species herein are described according to nomenclature provided by the NHIC, current to March 30, 2025. Where nomenclature differs between databases or rarity lists, the Database of Vascular Plants of Canada (VASCAN) (Canadensys, 2021) was used as a reference for synonyms of plant names to current taxonomic standards.

Species rarity was determined in accordance with the following sources:

- Species' status as listed on the Species at Risk in Ontario list, under the Species Conservation Act
- Species status, as determined by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and listed under the federal Species at Risk Act (SARA, 2002)
- Species S-rank, as provided by the NHIC species lists (updated March 30, 2025)¹
- Significant Plant List for Wellington County
- Locally Significant Species List – City of Guelph (2012)

4.0 Results of Records Review

The following sections document the findings of the records review.

4.1 Previous Studies

Two recent studies were completed as part of the Guelph Innovation District development approvals process. The study areas for these two reports do not match with this current study; however, there are areas of overlap.

4.1.1 Guelph Innovation District Lands, Blocks 1 & 2, Guelph Environmental Impact Study 2025

Natural Resource Solution Inc. (NSRI) completed an Environmental Impact Study (EIS) in 2025 that characterized important natural heritage features, identified the feature sensitivity, recommended appropriate buffers, identified potential impacts of proposed development and provided plans for mitigation, enhancement and monitoring. The EIS covered lands in Blocks 1 and 2 of the GID, shown on Figure 2B below. The location of these blocks is shown below. Significant findings from the EIS that are relevant to the MCEA include the presence of the following features:

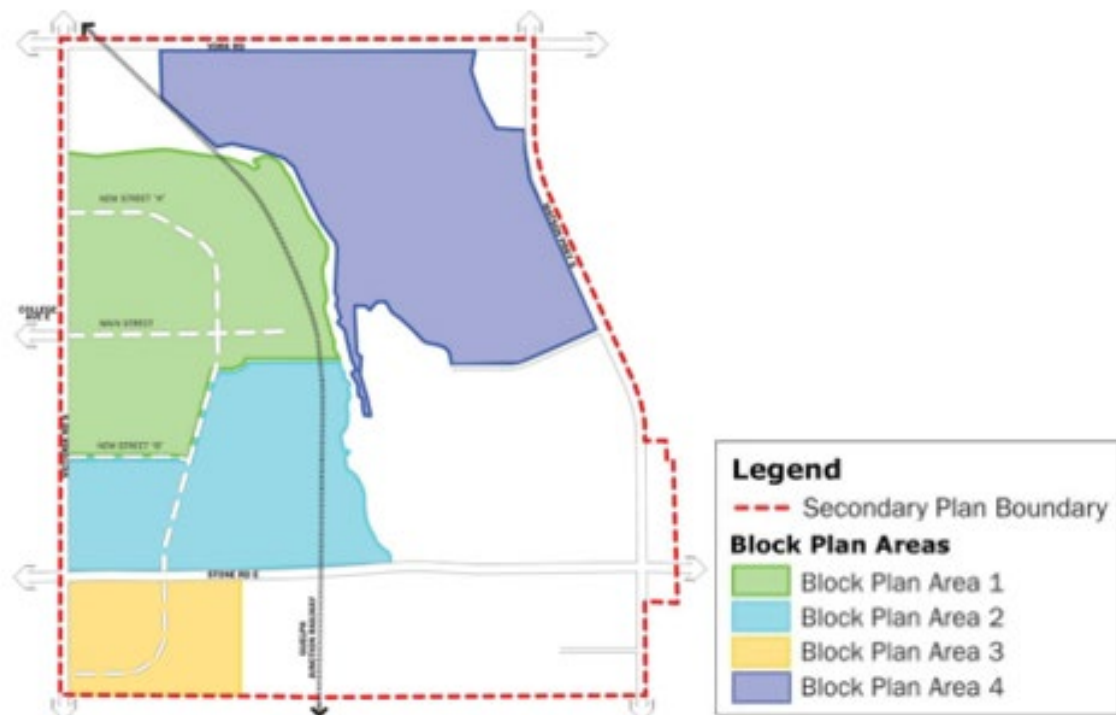
- Significant Woodland along the Eramosa River and the coniferous plantation north of Stone Road

¹ S-Rank is a classification system that denotes a species relative rarity in the state/province. The system was developed by the international organization, NatureServe and adopted by the MNR.

- Provincially Significant Wetland (Eramosa River Blue Springs Creek) and unevaluated wetlands
- Significant Valleylands surrounding the Eramosa River
- A cliff and talus slope habitat type along the bank of the Eramosa River to the east of Victoria Road
- Confirmed habitat for Threatened birds (Bobolink and Eastern Meadowlark)
- Confirmed Turtle Wintering Area throughout the length of the Eramosa River
- Possible sites for Waterfowl Stopover and Staging Areas and Waterfowl Nesting Areas beside the river
- Locally Significant Wildlife Species observations, including:
 - Ring-billed Gull
 - Savannah Sparrow
 - Northern Flicker
 - Pine Warbler

Most of the features are located within the Eramosa River and its valley. The Bobolink and Eastern Meadowlark habitat was found just outside of the valley in a farm field that stretches to Stone Rd. just to the west of the river.

Figure 2B: Location of Block Plan Areas Within the GID Lands



4.1.2 Phase 1 Environmental Impact Study Natural Heritage Characterization Report 2022

AECOM Canada Ltd. (AECOM) completed an EIS in 2022 in support of the overall Master Plan Concept and Site Plan for the City of Guelph Operations Campus, which includes the lands north of Stone Road between Watson Road and the Eramosa River. The study evaluates and identifies significant natural features, determines preliminary environmental development constraints and provides opportunities for enhancement. In addition to the significant features along the Eramosa River valley, this EIS also found:

- Habitat for Eastern Meadowlark, a Threatened species, in the meadow associated with the landfill at the northwest corner of Watson Road. and Stone Road
- Habitat for Snapping Turtle, a species of Special Concern, along the Eramosa River
- Possible habitat for Bat Maternity Colonies within woodlands in the study area
- Possible habitat for Eastern Wood-pewee and Red-headed Woodpecker, two Species of Conservation Concern in the woodlands south of Stone Road

4.2 Natural Heritage Information Centre Database

The Natural Heritage Information Centre database, maintained by the MNR was accessed to search for records of provincially significant plants, vegetation communities and all forms of wildlife within the study area and the surrounding areas. Species ranked S3 are considered to be vulnerable, while species listed as S2 are considered imperiled, and S1 are critically imperiled. Species ranked as S4 and S5 are considered secure. The search revealed records for the following Species of Conservation Concern (under the previous Endangered Species Act), listed by SARA or Provincially Rare species.

Endangered (END) and Threatened (THR) Species with their SARA rankings:

- Red-headed Woodpecker (*Melanerpes erythrocephalus*) – END
- Barn Swallow (*Hirundo rustica*) – THR
- Butternut (*Juglans cinerea*) – END
- Black Ash (*Fraxinus nigra*) – END
- Eastern Meadowlark (*Sturnella magna*) – THR
- Bobolink (*Dolichonyx oryzivorus*) – THR
- Least Bittern (*Botaurus exilis*) – THR

Special Concern Species (SC) according to SARA:

- Wood Thrush (*Hylocichla mustelina*) – SC
- Eastern Wood-pewee (*Contopus virens*) – SC
- Grasshopper Sparrow (*Ammodramus savannarum*) – SC
- Snapping Turtle (*Chelydra serpentina*) – SC
- American Bumble Bee (*Bombus pensylvanicus*) – SC
- Common Hop-tree (*Ptelea trifoliata*) – SC

- Eastern Ribbonsnake (*Thamnophis saurita*) – SC

Other rare species²:

- Potter Wasp Sp. (*Ancistrocerus campestris*) – S1
- Upland Sandpiper (*Bartramia longicauda*) – S2B
- Bristling Shadow Lichen (*Phaeophyscia hirsute*) – S2S3
- Hoary Long-horned Bee (*Peponapis pruinose*) – S2S3
- Painted Skimmer (*Libellula semifasciata*) – S3
- Tawny Emperor (*Asterocampa clyton*) – S3
- Blushing Scale Lichen (*Psora decipiens*) – S3
- Yellowjacket Wasp (*Vespula vidua*) – S3
- American Coot (*Fulica americana*) – S3B, S4N
- Swamp Darner (*Epiaeschna heros*) – S3S4
- Yellow-banded Bumble Bee (*Bombus terricola*) – S3S5
- Midland Painted Turtle (*Chrysemys picta marginata*) – S4
- Eastern Milksnake (*Lampropeltis Triangulum*) – S4
- Western Chorus Frog – Great Lakes – St. Lawrence – Canadian Shield population (*Pseudacris maculata* pop. 1) – S4
- Northern Map Turtle (*Graptemys geographica*) – S4
- Speckled Giant Lacewing (*Polystoechotes punctata*) – SH
- American Burying Beetle (*Nicrophorus americanus*) – SH

NHIC records are provided in Appendix A. These records cover an area that encompasses the study area of this project but also extends well beyond it. Although a species may be included on the list, its habitat may not be present in the smaller project study area. The habitat requirements of each of these species and the presence of suitable habitat is provided in Appendix B.

4.3 Ontario Breeding Birds Atlas

A review of the Ontario Breeding Bird Atlas (OBBA) identified records of 166 bird species in the vicinity of the site. The relative rarity* of each species is identified in Table 4.1.

²S1 - Critically Imperiled

S2 - Imperiled

S3 - Vulnerable

S4 - Apparently Secure

S5 - Secure

SNA - Not applicable, not suitable for conservation activities

SH - Possibly Extirpated (Historical)

Table 4.1: Provincial S-Ranks of Bird Species Recorded in the Vicinity of the Site

Rarity Ranking (SRank)*	Number of Species
S1 (S1?B, S1B)	0
S2 (S2B, S2N)	6
S3 (S3, S3B, S3N)	24
S4 (S4, S4B, S4N, S4M)	69
S5 (S5, S5B, S5N, S5N)	103
SNA	6

*S1 - Critically Imperiled

S2 - Imperiled

S3 - Vulnerable

S4 - Apparently Secure

S5 - Secure

SNA - Not applicable, not suitable for conservation activities

SH - Possible Extirpated (Historical)

The majority of bird species in the area are common, secure and not at risk. Some bird species have multiple rarity rankings, reflecting differing conservation statuses for breeding, non-breeding, and migratory populations. Of the species listed above, 15 were listed under the provincial former Endangered Species Act, 2007 either as SC, THR, or END but are no longer afforded protection under the Species Conservation Act but are still protected under SARA. Suitable habitat is present within the study area for eleven of those species, as follows:

Endangered and Threatened species with their SARA rankings:

- Red-headed Woodpecker (*Melanerpes erythrocephalus*) – END
- Barn Swallow (*Hirundo rustica*) – THR
- Bank Swallow (*Riparia riparia*) – THR
- Bobolink (*Dolichonyx oryzivorus*) – THR
- Chimney Swift (*Chaetura pelagica*) – THR
- Eastern Meadowlark (*Sturnella magna*) – THR

Special Concern species according to SARA:

- American Bumble Bee (*Bombus pensylvanicus*) – SC
- Canada Warbler (*Cardellina canadensis*) – THR
- Eastern Wood-pewee (*Contopus virens*) – SC
- Golden-winged Warbler (*Vermivora chrysoptera*) – THR
- Grasshopper Sparrow (*Ammodramus savannarum pratensis*) – SC
- Wood Thrush (*Hylocichla mustelina*) – THR
- Yellow-banded Bumble Bee (*Bombus terricola*) – SC

Other rare species:

- Potter Wasp Sp. (*Ancistrocerus campestris*) – S1
- Bristling Shadow Lichen (*Phaeophyscia hirsuta*) – S2S3
- Hoary Long-horned Bee (*Peponapis pruinosa*) – S2S3
- Blushing Scale Lichen (*Psora decipiens*) – S3
- Yellowjacket Wasp (*Vespula vidua*) – S3
- Swamp Darner (*Epiaeschna heros*) – S3S4

Further information regarding the habitat requirements for each species is discussed in greater detail in Appendix B.

OBBA records are provided in Appendix A.

4.4 Ontario Reptile and Amphibian Atlas

A review of the Ontario Reptiles and Amphibian Atlas (ORAA) identified records of twenty-seven different species of reptiles and amphibians within the vicinity of the site. The “Latest Year” column identifies that date of the most recent record of the species in the area. Records over twenty years old are generally considered to be outdated and may not reflect the current presence of a species in the area. The relative rarity* of each species is identified in Table 4.2 below.

Table 4.2: Reptiles and Amphibians Documented in the Vicinity of the Site

Common Name	Scientific Name	SRank*	Latest Year
Reptiles			
Blanding's Turtle	<i>Emydoidea blandingii</i>	S3	2016
Midland Painted Turtle	<i>Chrysemys picta marginata</i>	S4	2018
Snapping Turtle	<i>Chelydra serpentina</i>	S4	2019
Northern Map Turtle	<i>Graptemys geographica</i>	S3	1925
Red-eared Slider	<i>Trachemys scripta elegans</i>	SNA	2018
Dekay's Brownsnake	<i>Storeria dekayi</i>	S5	2018
Eastern Gartersnake	<i>Thamnophis sirtalis sirtalis</i>	S5	2018
Eastern Ribbonsnake	<i>Thamnophis sauritus</i>	S4	1985
Milksnake	<i>Lampropeltis triangulum</i>	S4	2018
Northern Watersnake	<i>Nerodia sipedon</i>	S5	2008
Red-bellied Snake	<i>Storeria occipitomaculata</i>	S5	2018

Common Name	Scientific Name	SRank*	Latest Year
Smooth Greensnake	<i>Opheodrys vernalis</i>	S4	2019
Amphibians			
American Bullfrog	<i>Lithobates catesbeianus</i>	S4	2000
Gray Treefrog	<i>Hyla versicolor</i>	S5	2018
Green Frog	<i>Lithobates clamitans</i>	S5	2019
Northern Leopard Frog	<i>Lithobates pipiens</i>	S5	2018
Pickerel Frog	<i>Lithobates palustris</i>	S4	2014
Spring Peeper	<i>Pseudacris crucifer</i>	S5	2019
Western Chorus Frog	<i>Pseudacris maculata</i>	S4	2017
Wood Frog	<i>Lithobates sylvaticus</i>	S5	2019
American Toad	<i>Anaxyrus americanus</i>	S5	2019
Blue-spotted Salamander	<i>Ambystoma laterale</i>	S4	2016
Red-spotted Newt	<i>Notophthalmus viridescens</i> <i>viridescens</i>	S5	2016
Eastern Red-backed Salamander	<i>Plethodon cinereus</i>	S5	2018
Spotted Salamander	<i>Ambystoma maculatum</i>	S4	2016
Mudpuppy	<i>Necturus maculosus</i>	S4	2013

*S1 - Critically Imperiled

S2 - Imperiled

S3 - Vulnerable

S4 - Apparently Secure

S5 - Secure

SNA - Not applicable, not suitable for conservation activities

SH - Possible Extirpated (Historical)

Of the 27 species listed above, a total of four are listed under the previous Provincial *Endangered Species Act, 2007*, as either SC, THR, or END Suitable habitat is present in the study area for three of these species:

- Eastern Ribbonsnake – SC
- Northern Map Turtle – SC
- Snapping Turtle – SC

Another three species are listed as SC, THR, or END on the federal *Species at Risk Act, 2002*. Suitable habitat is present in the study area for all these species:

- Eastern Milksnake – SC
- Midland Painted Turtle – SC
- Western Chorus Frog – THR

ORAA records are provided in Appendix A. Further information regarding the habitat requirements for each species is discussed in greater detail in Appendix B.

4.5 Wildlife Crossings

Schedule 4 of the City's Official Plan identifies that Other Wildlife Crossing Opportunities are present at three crossings within the Study Area.

- The Eramosa River at Victoria Road
- Across College Ave, just west of Victoria Road
- The Eramosa River at Stone Road

These locations are shown on Figure 2.

4.6 Fish Records

MNR Aquatic Resources Area (ARA) mapping states that the Eramosa River is present within the study area. The river has a cold-water thermal regime. The table below identifies the fish species that have been historically observed in this watercourse, reflecting the coldwater classification. According to the DFO Species at Risk Act (SARA) mapping, there are no END, THR or SC species found within the study area.

Table 4.3: Fish species historically observed in the Eramosa River

Species Name	Scientific Name	Thermal Regime Preference
American Brook Lamprey	<i>Lampetra appendix</i>	Cold
Blacknose Dace (Western)	<i>Rhinichthys atratulus</i>	Cool
Blackside Darter	<i>Percina maculata</i>	-
Bluntnose Minnow	<i>Pimephales notatus</i>	Warm
Brook Stickleback	<i>Culaea inconstans</i>	Cool
Brook Trout	<i>Salvelinus fontinalis</i>	Cold
Brown Trout	<i>Salmo trutta</i>	Cool
Central Mudminnow	<i>Umbra limi</i>	Cool
Common Shiner	<i>Luxilus cornutus</i>	Cool
Creek Chub	<i>Semotilus atromaculatus</i>	Cool
Fantail Darter	<i>Etheostoma flabellare</i>	-
Greenside Darter	<i>Etheostoma blenniodes</i>	-

Species Name	Scientific Name	Thermal Regime Preference
Hornyhead Chub	<i>Nocomis biguttatus</i>	Cool
Iowa Darter	<i>Etheostoma exile</i>	-
Johnny Darter	<i>Etheostoma nigrum</i>	Cool
Largemouth Bass	<i>Micropterus salmoides</i>	Warm
Longnose Dace	<i>Rhinichthys cataractae</i>	Cool
Mottled Sculpin	<i>Cottus bairdii</i>	Cool
Northern Hog Sucker	<i>Hypentelium nigricans</i>	Warm
Pumpkinseed	<i>Lepomis gibbosus</i>	Warm
Rainbow Darter	<i>Etheostoma caeruleum</i>	-
River Chub	<i>Nocomis micropogon</i>	Cool
Rock Bass	<i>Ambloplites rupestris</i>	Cool
Slimy Sculpin	<i>Cottus cognatus</i>	Cold
Smallmouth Bass	<i>Micropterus dolomieu</i>	Cool
White Suckers	<i>Catostomus commersonii</i>	Cool

Source: MNRF ARA Mapping (2017)

5.0 Results of Field Investigations

5.1 Vegetation Communities

Vegetation communities are assemblages of plants with similar characteristics, such as Sugar Maple forests or cattail marshes.

In total, 44 different vegetation communities were identified within the study area. None of the 44 identified communities are rare in Ontario.

In some cases, “inclusions” are identified within vegetation communities. Inclusions are vegetation groups that are too small to be an individually identified community but are areas within communities that have different enough characteristics to warrant mention.

Two inclusions have characteristics that are considered to be rare in Ontario. These are:

- White Cedar Treed Calcareous Cliff Type (CLT1-1)
- Sugar Maple – Ironwood – White Ash Treed Calcareous Cliff Type (CLT1-2)

These were identified in association with the Eramosa River valley and the Cultural Woodland (CUW1a), Dry-Fresh Sugar Maple – Beech Deciduous Forest (FOM5-2), and an additional Cultural Woodland (CUW1e) communities respectively.

Vegetation communities, including these rare inclusions are shown on Figure 4.

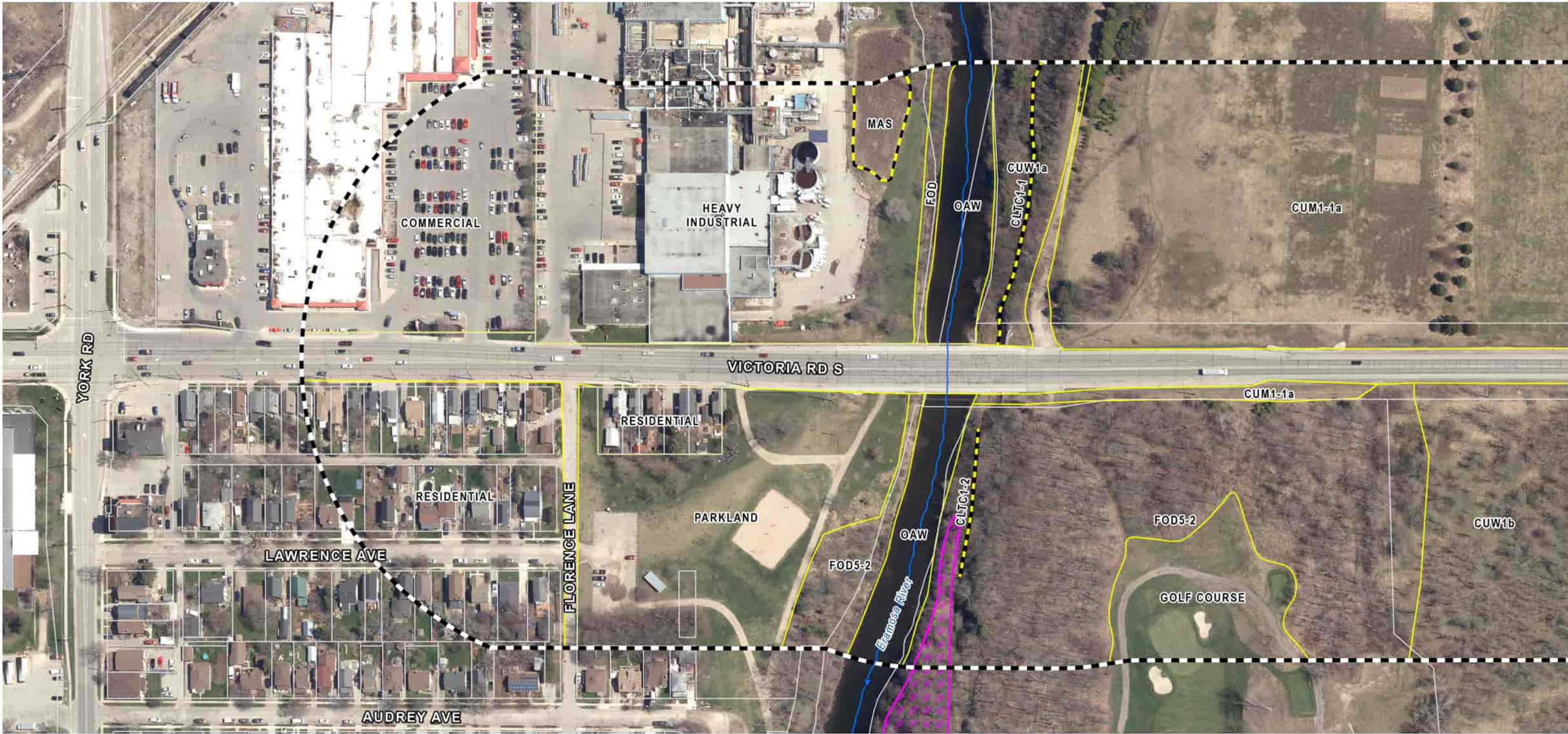
Appendix D provides a detailed description of the ELC communities present within the study area.

5.2 Botanical Inventory

A detailed list of plants identified on the subject lands can be found in Appendix E. The following summarizes the flora observed in the study area and on the adjacent lands (approximately 30 m).

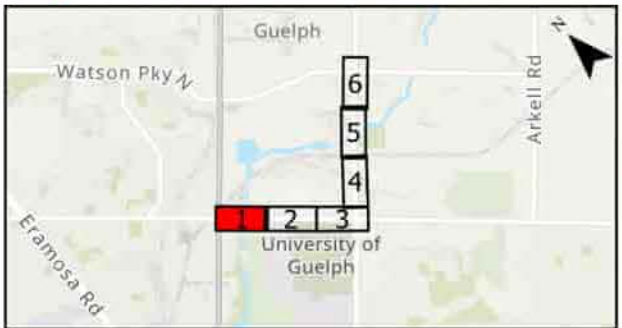
- Of the 231 plant taxa observed, 229 were identified to a species, or subspecies level.
- Of those species, 149 (65%) were native and 80 (35%) were non-native to Ontario.
- 11 species were observed that are considered rare (R) or uncommon (U) to the City of Guelph (Dugan and Associates, 2009)

A detailed tree inventory will be completed under a separate cover when additional information is known about the preferred alternative for the bridge and the preferred road alignment.



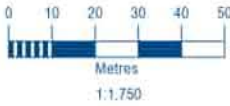
- Study Area
- Watercourse (Thermal Regime - Cool)
- Ecological Land Classification

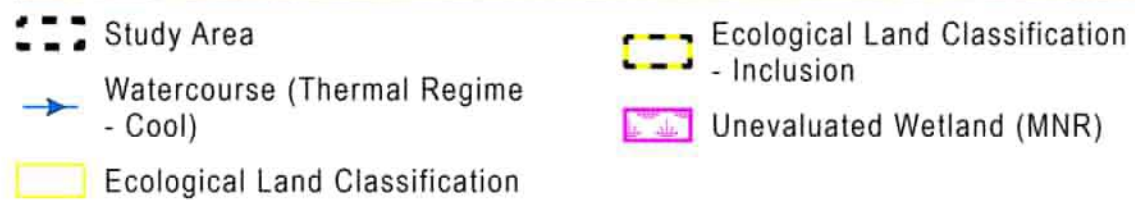
- Ecological Land Classification - Inclusion
- Unevaluated Wetland (MNR)



Datum: North American 1983
Coord. System: NAD 1983 UTM Zone 17N
Projection: Transverse Mercator
Central Meridian: 81°0'0.00"W
False Easting: 500,000m
False Northing: 0m
Scale Factor: 0.99960
Rotation: 44.08

Drawn By: HN
Checked By: SY
Client: City of Guelph
Project: Victoria Road, Stone Road and Structure 116
Environmental Assessment
Project Number: 300059860
Date: 2025/12/02



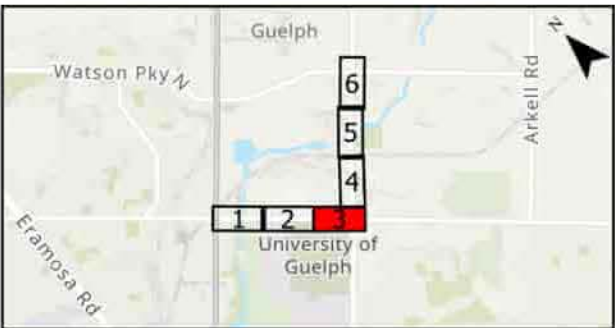


0 10 20 30 40
Metres
1:1,750



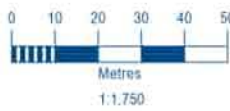
- Study Area
- Watercourse (Thermal Regime - Cool)
- Ecological Land Classification

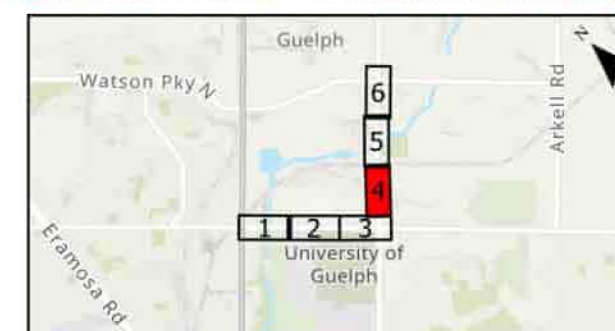
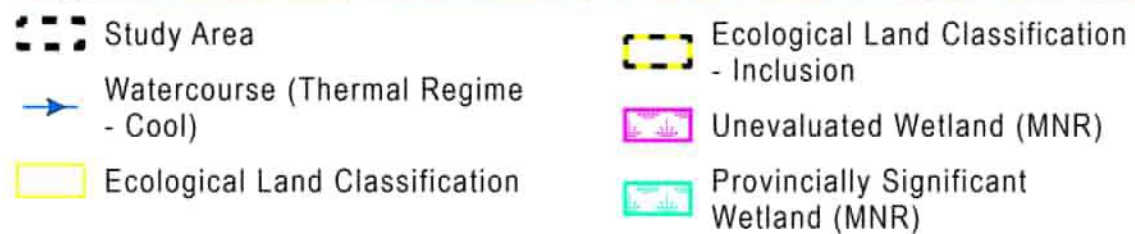
- Ecological Land Classification - Inclusion
- Unevaluated Wetland (MNR)



Datum: North American 1983
Coord. System: NAD 1983 UTM Zone 17N
Projection: Transverse Mercator
Central Meridian: 81°0'0.00\"W
False Easting: 500,000m
False Northing: 0m
Scale Factor: 0.99960
Rotation: 43.84

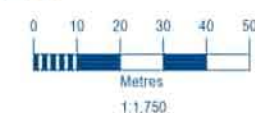
Drawn By: HN
Checked By: SY
Client: City of Guelph
Project: Victoria Road, Stone Road and Structure 116
Environmental Assessment
Project Number: 300059860
Date: 2025/12/02

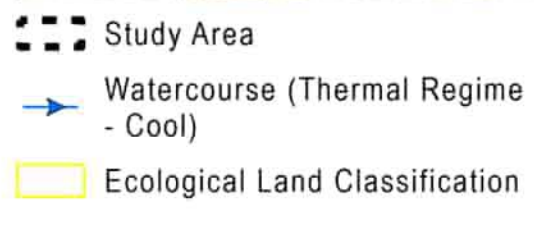


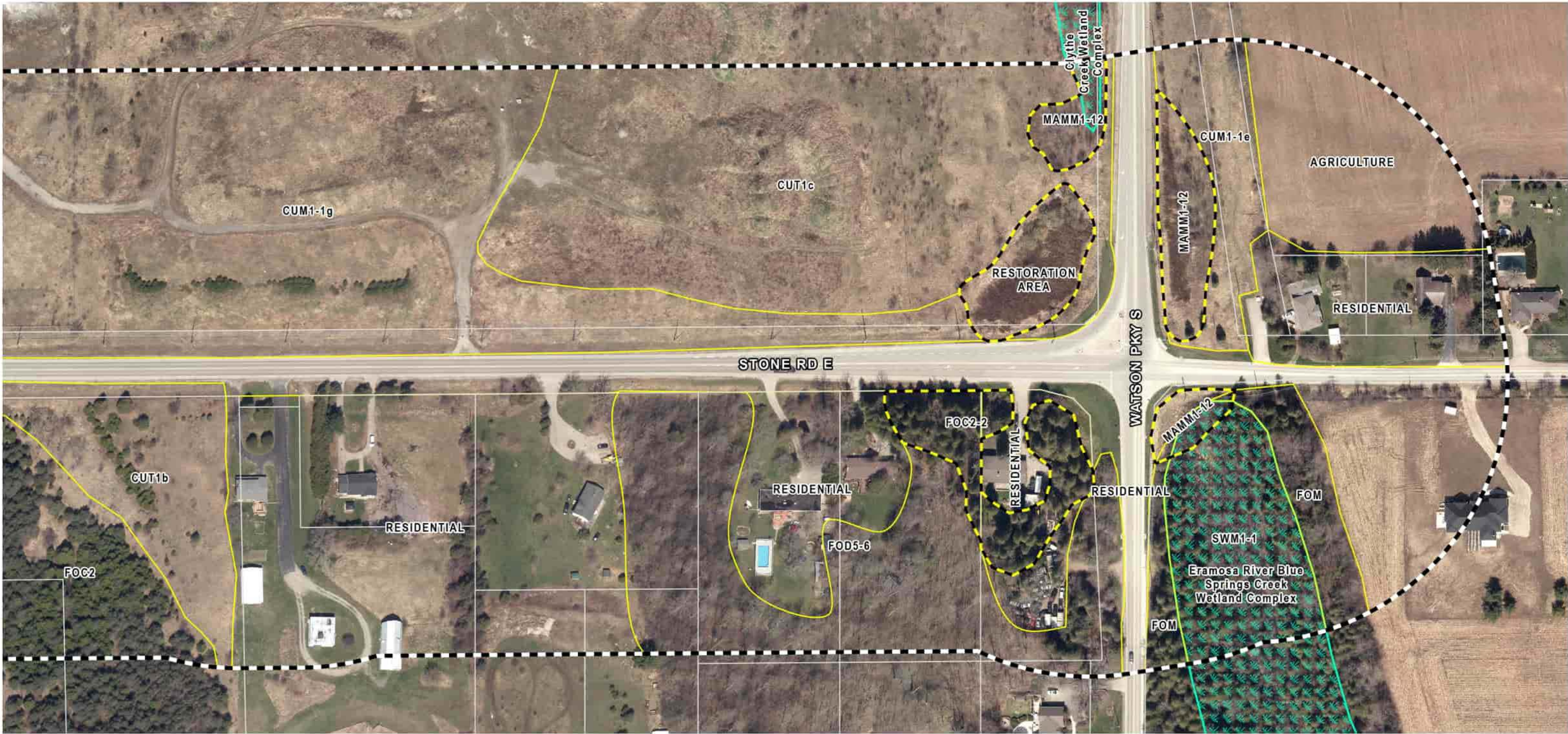


Datum: North American 1983
Coord. System: HAD 1983 UTM Zone 17N
Projection: Transverse Mercator
Central Meridian: 81°0'0.00"W
False Easting: 500,000m
False Northing: 0m
Scale Factor: 0.99960
Rotation: -45.74

Drawn By: HN
Checked By: SY
Client: City of Guelph
Project: Victoria Road, Stone Road and Structure 116
Environmental Assessment
Project Number: 300059860
Date: 2025/12/02

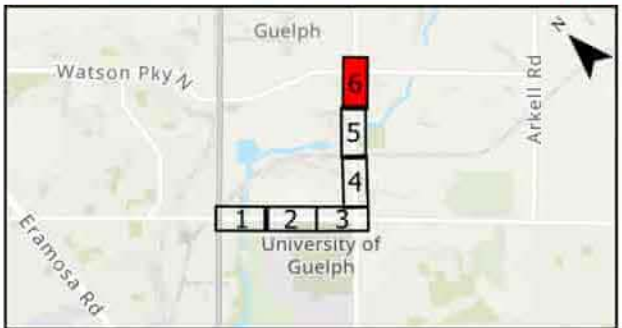


 Provincially Significant Wetland (MNR)



- Study Area
- Watercourse (Thermal Regime - Cool)
- Ecological Land Classification

- Ecological Land Classification - Inclusion
- Provincially Significant Wetland (MNR)



Datum: North American 1983
Coord. System: NAD 1983 UTM Zone 17N
Projection: Transverse Mercator
Central Meridian: 81°0'0.00"W
False Easting: 500,000m
False Northing: 0m
Scale Factor: 0.99960
Rotation: -45.74

Drawn By: HN
Checked By: SY
Client: City of Guelph
Project: Victoria Road, Stone Road and Structure 116
Environmental Assessment
Project Number: 300059860
Date: 2025/12/02

0 10 20 30 40 50
Metres
1:1,750

4.6

ELC Descriptions

CUM1-1: Dry-Moist Old Field Meadow
CUP1-1: Sugar Maple Deciduous Plantation
CUT1: Mineral Cultural Thicket Ecosite
CUW1: Mineral Cultural Woodland Ecosite
FOC2: Dry – Fresh Cedar Coniferous Forest Ecosite
FOC2-2: Dry-Fresh White Cedar Coniferous Forest
FOC4-1: Fresh-Moist White Cedar Coniferous Forest
FOD: Deciduous Forest
FOD3-1: Dry-Fresh Poplar Deciduous Forest
FOD5-1: Dry-Fresh Sugar Maple Deciduous Forest
FOD5-2: Dry-Fresh Sugar Maple - Beech Deciduous Forest
FOD5-6: Dry-Fresh Sugar Maple - Basswood Deciduous Forest
FOD7: Fresh-Moist Lowland Deciduous Forest Ecosite
FOD8-1: Fresh-Moist Poplar Deciduous Forest
FOM: Mixed Forest
FOM4: Dry – Fresh White Cedar Mixed Forest Ecosite
FOM4-2: Dry-Fresh White Cedar - Poplar Mixed Forest
MAM: Meadow Marsh
MAMM1-12: Common Reed Graminoid Mineral Meadow Marsh
MAMO2-3: Mixed Forb Organic Meadow Marsh
MAS: Shallow Marsh
OAW: Open water
SWD: Deciduous Swamp
SWM: Mixed Swamp
SWM4-1: White Cedar - Hardwood Organic Mixed Swamp
SWT: Thicket Swamp
SWT4-1: Red-osier Organic Deciduous Thicket Swamp Type
SWTM3: Willow Mineral Deciduous Thicket Swamp
TAGM1: Coniferous Plantation
THDM2-1: Sumach Deciduous Shrub Thicket

Drawn By: HN
Checked By: SY
Client: City of Guelph
Project: Victoria Road, Stone Road and Structure 116
Environmental Assessment
Project Number: 300059860
Date: 2025/12/02

5.3 Breeding Bird Surveys

A total of 59 species of resident bird species, exhibiting some level of breeding evidence (possible, probable, or confirmed), were observed in the study area during targeted breeding bird surveys in 2025 (see Appendix C).

Four of the species were observed in the study area during the breeding bird window, but no breeding evidence (i.e., suitable breeding habitat or breeding behaviour) was recorded: Cape May Warbler (*Setophaga tigrina*), Chimney Swift (*Chaetura pelagica*), Cooper's Hawk (*Chaetura pelagica*), and Red-tailed Hawk (*Buteo jamaicensis*).

According to MNR's Significant Wildlife Habitat Technical Guide (SWHTG; 2000), "area sensitive" species are defined as species that require large areas of suitable habitat for long term population survival. Fragmentation of essential habitats can result in overall declines in populations. Seven "area sensitive" bird species, as defined by MNR, were observed exhibiting breeding evidence in the study area during the breeding bird surveys: American Redstart (*Setophaga ruticilla*), Hairy Woodpecker (*Picoides villosus*), Least Flycatcher (*Empidonax minimus*), Black-and-white Warbler (*Mniotilta varia*), Eastern Meadowlark (*Sturnella magna*), Savannah Sparrow (*Passerculus sandwichensis*), and White-breasted Nuthatch (*Sitta carolinensis*). Except for Savannah Sparrow and Eastern Meadowlark, the remaining five species were recorded in the City of Guelph NHS.

Three bird species, listed as both provincially and/or federally significant, were observed in the study area during breeding bird surveys: Barn Swallow (Special Concern), Eastern Wood-pewee (*Contopus virens*) (Special Concern), Bank Swallow (*Riparia riparia*) (Threatened) and Eastern Meadowlark (Threatened). SAR and SWH Screening Tables for the study area are included in Appendix B & F. The significance of these species is discussed in more detail in Section 5.1.5 and 5.1.6.

In total, 19 locally significant bird species were observed during the course of breeding bird surveys. The locations of the above species observations can be found on Figure 3. The species present and the survey stations at which they were found are as follows:

- American Redstart (BBS-005, BBS-008, BBS-010, BBS-017, BBS, 018, BBS-020, BBS-023)
- Baltimore Oriole (BBS-019, BBS-020, BBS-020, BBS-022, BBS-023)
- Bank Swallow (BBS-012)
- Belted Kingfisher (BBS-001, BBS-012, BBS-023)
- Black-and-white Warbler (BBS-017, BBS-023)
- Blue-winged Warbler (BBS-012)
- Cliff Swallow (Stone Road Bridge)
- Cooper's Hawk (Flyover)

- Eastern Kingbird (BBS-003, BBS-006, BBS-010, BBS-012, BBS-01, BBS-019, BBS-020, BBS-021)
- Eastern Wood-pewee (BBS-002, BBS-008)
- Field Sparrow (BBS-001, BBS-003, BBS-004, BBS-006, BBS-012, BBS-019, BBS-020)
- Hairy Woodpecker (BBS-019)
- Least Flycatcher (BBS-008)
- Northern Flicker (BBS-003, BBS-004, BBS-008, BBS-019)
- Orchard Oriole (BBS-019)
- Red-bellied Woodpecker (BBS-004, BBS-008)
- Rose-breasted Grosbeak (BBS-003)
- Savannah Sparrow (BBS-003, BBS-004, BBS-005, BBS-006, BBS-009, BBS-012)
- Willow Flycatcher (BBS-001, BBS-019, BBS-021)

Habitat for raptors may be present in the forested lands of the University of Guelph Arboretum or the valleylands of the Eramosa River contained within the NHS. However, no breeding evidence of raptors was recorded during any field investigations within the study area, including early spring surveys during turtle basking surveys. Two raptors were recorded within the study area as incidental observations only (Red-tailed Hawk and Cooper's Hawk).

5.4 Structure Surveys

Some bird species are known to nest on human-made structures. As such, surveys included focused observations on structures where nesting could potentially occur. Surveys were conducted at the three bridges within the study area. Residential and institutional buildings are also present well beyond the road ROWs that may support breeding birds. Inspections of residential and institutional buildings for evidence of nesting were not included in the current scope of field investigations.

Structures with active nests are summarized in Table 5.1.

Table 5.1: Nesting Observed on Bridges in the Study Area

Structure	Species Nesting	# of Nests
Victoria Rd. Bridge (Structure 115)	Barn Swallow	4
	Rock Dove, <i>Columba livia</i>	Suspected by active nests not confirmed
McQuillan's Bridge (Structure 116)	Eastern Phoebe, <i>Sayornis phoebe</i>	1
Stone Rd. Bridge (Structure 117)	Eastern Phoebe	1
	Cliff Swallow, <i>Petrochelidon pyrrhonota</i>	3

5.5 Amphibian Breeding Call Surveys

No anuran species were identified within the study area during targeted amphibian breeding call surveys.

Table 5.2: Amphibian Breeding Call Survey Results

Survey Date	Station ID	Species Observed	No. of Individuals
May 29, 2025	AMP-001	No species recorded	-
	AMP-002	No species recorded	-
	AMP-003	No species recorded	-
	AMP-004	No species recorded	-
	AMP-005	No species recorded	-
June 24, 2025	AMP-001	No species recorded	-
	AMP-002	No species recorded	-
	AMP-003	No species recorded	-
	AMP-004	No species recorded	-
	AMP-005	No species recorded	-

An April survey will be completed in 2026, and the findings will be provided in a revised submission of this report.

5.6 Incidental Wildlife Observations

Incidental wildlife observations recorded by Burnside during field investigations are listed in Table 5.3 below. All observed species are common and widespread in Ontario.

Table 5.3: Summary of Study Area Incidental Wildlife Observations by Burnside Staff

Common Name	Scientific Name	Number Observed	S-Rank*	Location / Comments
Black Capped Chickadee	<i>Poecile atricapillus</i>	1	S5	FODM5-2
Blue Jay	<i>Cyanocitta cristata</i>	1	S5	FODM7
Hickory Tussock Moth	<i>Lophocampa caryae</i>	1	S5	FODM5-2
Gray Squirrel	<i>Sciurus carolinensis</i>	2	S5	FODM5-1
Eastern Chipmunk	<i>Tamias striatus</i>	1	S5	FODM5-1

Common Name	Scientific Name	Number Observed	S-Rank*	Location / Comments
Eastern Wood-pewee (Special Concern)	<i>Contopus virens</i>	1	S4B	FODM5-1 (audible)
Northern Leopard Frog	<i>Lithobates pipiens</i>	1	S5	SWM1-1
Mourning Cloak	<i>Nymphalis antiopa</i>	1	S5	FOMM4-2
Swallowtail	<i>Papilio spp.</i>	1		THDM3-1
Red-tailed Hawk	<i>Buteo jamaicensis</i>	1	S5	MEGM3-5
Turkey Vulture	<i>Cathartes aura</i>	1	S5B,S3N	THDM2-6 and WOCM1-2 (flyover)

*S1 - Critically Imperiled

S2 - Imperiled

S3 - Vulnerable

S4 - Apparently Secure

S5 - Secure

SNA - Not applicable, not suitable for conservation activities

5.7 Aquatic Habitat

Burnside staff reviewed the existing aquatic conditions associated with McQuillan's Bridge on August 19, 2025. This section will describe the conditions observed during this site visit. The conditions were cloudy with an air temperature of 16°C. Please refer to Appendix G for the corresponding photos within the sections below.

5.7.1 Upstream Conditions of McQuillan's Bridge

Upstream of Mc Quillan's Bridge, the watercourse generally flows from east to west through a forested corridor in an otherwise developed landscape (Photo 1 in Appendix G). The upstream area was moderately shaded (~50% overhead cover) by large Willows and Dogwoods (Photo 2 in Appendix G). Both banks were stable with no observable erosion. A narrow (<1 m) informal pedestrian path along the southwest corner of McQuillan's Bridge, toward the upstream side, has resulted in a localized erosion risk due to trampled vegetation and compacted soils (Photo 2 in Appendix G). The watercourse in this reach consisted of a run with a fairly uniform width of ~18 m and depth of ~0.3 m. Substrate was dominated by cobbles (80% cover), with gravel patches near the shoreline (20% cover). No aquatic vegetation was observed, although cobbles were coated with a fine layer of organic debris. Woody debris was common along the banks (~10% cover), providing localized habitat complexity (Photo 3 in Appendix G).

5.7.2 McQuillan's Bridge to Stone Road Bridge

Immediately beneath McQuillan's Bridge, the channel transitions into a riffle (Photo 4). The channel widens slightly (20 m) with shallower depths (~0.15 m) beneath the bridge, narrowing again to ~18 m downstream. Substrate in this reach was dominated by cobbles (~90% cover) with scattered boulders (~10%) (Photo 5 in Appendix G). Shorelines remained stable; however, riparian cover decreased compared to the upstream reach, with only herbaceous vegetation present, providing minimal overhead cover (Photo 6 in Appendix G). No significant instream woody debris or vegetation was observed.

The hardened shoreline associated with the McQuillan's Bridge was evident. On the south bank, the hardened section extended ~5.8 m along the channel (~58 m² of riparian area), with ~8 m² protruding directly into the channel. The north bank was smaller (~20 m²) and did not extend into the channel at the time of the survey.

5.7.3 Stone Road Bridge

At the Stone Road Bridge, the riffle continued with no noticeable changes. Downstream of the bridge, the channel gradually transitioned back into a run, with depths increasing to ~0.3 m (Photo 7 in Appendix G). Banks remained stable and no changes to instream habitat were noted.

6.0 Significance of Natural Features

All the natural features identified through the records review and field investigations were assessed to determine their significance and whether they are subject to the regulations, policies and plans described in Section 2.0.

Wetland limits within the study area will be delineated with GRCA and City staff and woodland limits will be delineated with City staff in 2026. Mapping to illustrate updated limits of these features may be issued if these limits have changed beyond the illustrated features in the figure set of this submission.

The following features have some level of protection or are subject to permit and approval requirements.

6.1 Provincially Significant Wetlands

Two previously evaluated and known Provincially Significant Wetlands (PSWs) are located within the study area and its vicinity: the Eramosa River Blue Springs Creek Wetland Complex and Torrance Creek Swamp PSW.

PSWs are shown on Figure 2.

6.2 Other Wetlands

Additional unevaluated and non-Provincially Significant Wetlands are present in the study area. Schedule 4A of the City's Official Plan identifies a wetland east of the Victoria Road bridge (Structure 115) as a "Locally Significant Wetland". Another Locally Significant Wetland is identified extending northwest from the Watson Parkway South and Stone Road intersection. Several other smaller wetlands were also observed during field investigations. All wetlands are shown on Figure 2.

6.3 Significant Woodlands

Section 4.1.3.6 of the City's Official Plan provides defining criteria to identify Significant Woodlands. Specifically, Significant Woodlands are:

1. *Woodlands* (not identified as *cultural woodlands* or *plantations*) of 1 hectare or greater in size, and a 10 metre *minimum buffer*
2. *Woodlands* 0.5 hectare in size or greater consisting of Dry-Fresh Sugar Maple Deciduous Forest and a 10 metre *minimum buffer*
3. *Woodland* types ranked as S1 (Critically Imperiled), S2 (Imperiled) or S3 (Vulnerable) by the provincial government Natural Heritage Information Centre, and a 10 metre *minimum buffer*

Schedule 4C identifies that extensive Significant Woodlands are found south of Stone Road and are associated with the Eramosa River valley. A narrow polygon of Significant Woodland is also identified east and west of the Victoria Street bridge, as shown on Figure 2.

6.4 Significant Valleylands

OPA 42 Schedule 10D identifies that Significant Valleylands are found associated with the Eramosa River valley, with two designations: 'Undeveloped Portions of the Regulatory Floodplain' and 'Other Valleylands'. These designated lands occur on lands north and south of Stone Road and east and west of Victoria Road, as shown on Figure 2.

6.5 Significant Areas of Natural and Scientific Interest

Provincially significant ANSI's are "identified as provincially significant using evaluation criteria and procedures established by the Province, as amended from time to time".

The NHRM (MNR, 2010) states that provincially significant ANSIs include some of the most significant and best examples of these features in the province, and only include ANSIs identified as provincially significant.

OPA 42 Schedule 10A identifies the ANSIs within the City. The Guelph Correctional Centre Quarry provincial Earth Sciences ANSI borders the study area and is shown on Figure 2.

6.6 Significant Wildlife and Wildlife Habitat

The findings of the records review and field investigations were assessed and compared to criteria provided in several provincial documents, including the Natural Heritage Reference Manual (MNR, 2010), the SWHTG (2000) and SWH Criteria Schedule for Ecoregion 6E (2015).

Appendix F includes a screening of the various potential types of SWH for the study area and adjacent lands.

Through field investigations, some types of habitat have been confirmed as being present. For other habitat types, Burnside was able to confirm that certain habitat characteristics are present (e.g. woodlands of a certain size) but were not able to confirm that representative species are present in sufficient numbers to meet SWH criteria. As such, these areas are identified as “Candidate SWH”. For planning and project design purposes, Candidate SWH are sometimes assumed to be significant and treated as such with respect to protection, restoration and mitigation design.

Table 6.1 lists the confirmed and candidate SWH types present in the study area. Confirmed and candidate habitats are presented on Figure 5A and 5B.

Table 6.1: Candidate and Confirmed SWH on the Subject Lands

Seasonal Concentration Areas of Animals	• Waterfowl Stopover & Staging Areas (Aquatic) – Candidate • Bat Maternity Colonies – Candidate • Turtle Wintering Areas – Confirmed (NRSI, 2025)
Rare Vegetation Communities	• Cliffs and Talus Slopes – Confirmed
Specialized Habitats for Wildlife Considered Significant Wildlife Habitat	• Bald Eagle & Osprey Nesting, Foraging & Perching Habitat – Candidate
Habitat for Species of Conservation Concern Considered Significant Wildlife Habitat	• Terrestrial Crayfish – Candidate • Special Concern and Rare Wildlife Species – Candidate and Confirmed

Each type of wildlife habitat that may be present is described in greater detail below.

Waterfowl Stopover & Staging Areas (Aquatic) – Candidate

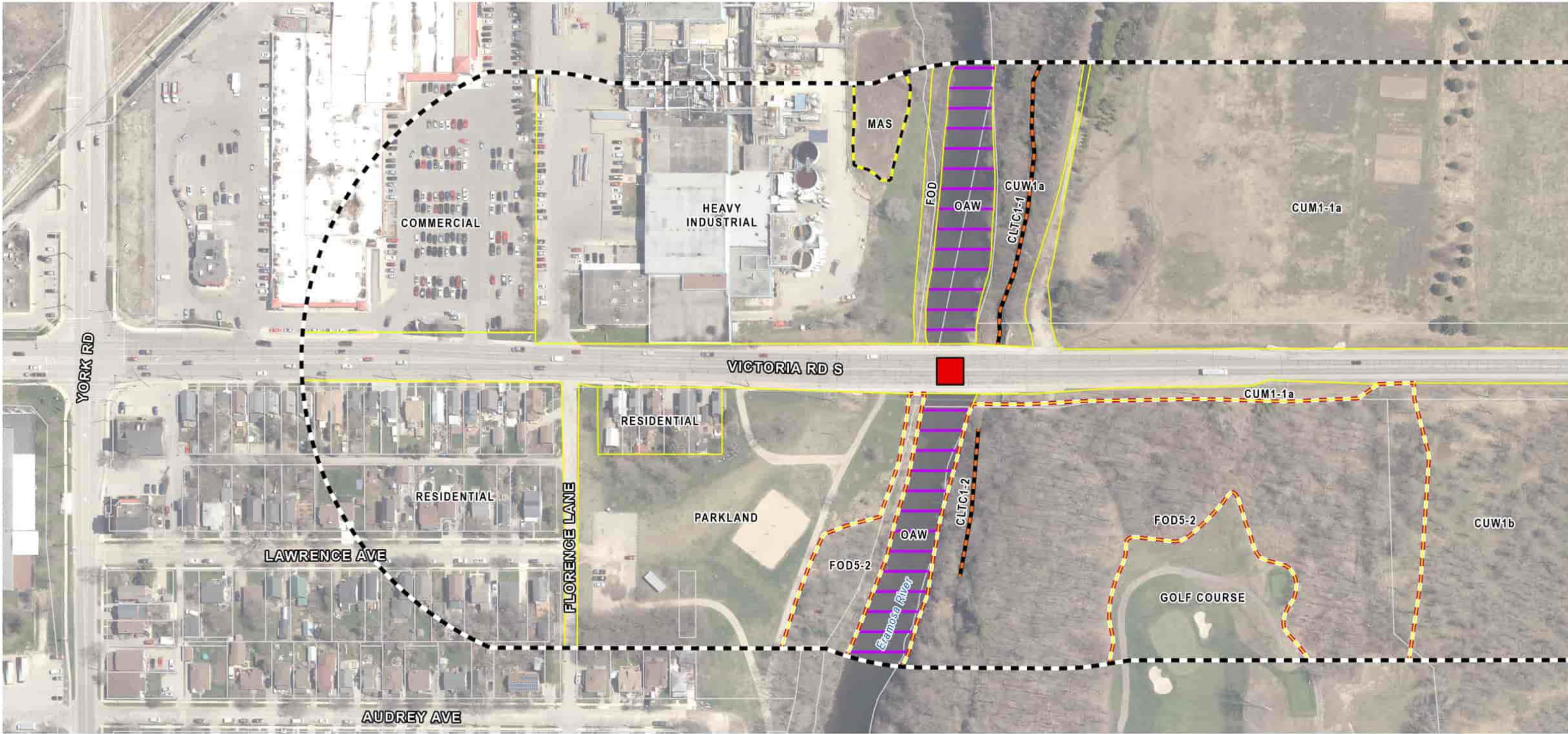
Large aggregations of waterfowl may be supported along the Eramosa River. This feature was also identified as being possibly supported along the Eramosa River in the recent studies described in Section 4.1. Wetland communities present within the study area are not sufficiently large enough to support large aggregations of waterfowl.

Spring waterfowl surveys to confirm the presence of this feature were not included in the current scope of field investigations, but the area is assumed to be significant.

Bat Maternity Colonies – Candidate

Bat maternity colonies may be supported within the deciduous and mixed forest and treed wetland communities located throughout the study area. Of particular importance is the forested lands associated with the University of Guelph arboretum and riparian valleylands of the Eramosa River which contain mature Sugar Maple and Red Oak trees. Suitable foraging habitat (i.e. open upland communities, wetlands, and the Eramosa River) and flyways (the Eramosa River valley) are also present in association with candidate bat maternity colonies, creating high-quality bat maternity roosting habitat.

Bat maternity roost tree surveys to confirm the presence / absence of this feature will be conducted once the preferred alternative has been established and the preliminary grading limits are known. Acoustic surveys to confirm the presence / absence of this feature are not included in the current scope of field investigations.

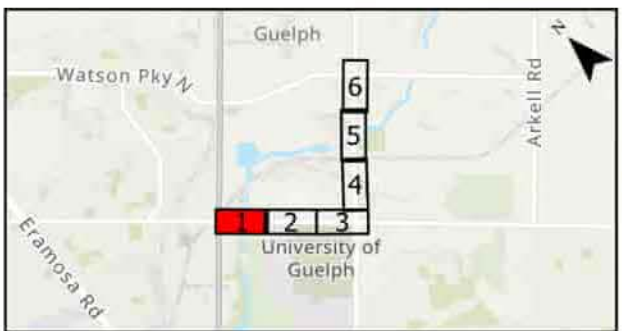


- Study Area
- Ecological Land Classification
- Ecological Land Classification - Inclusion

Confirmed Significant Wildlife Habitat:

Barn Swallow (SC)

- Turtle Wintering Areas (NRSI)
- Eastern Wood-pewee (SC)
- Cliffs and Talus Slopes



Datum: North American 1983
Coord. System: NAD 1983 UTM Zone 17N
Projection: Transverse Mercator
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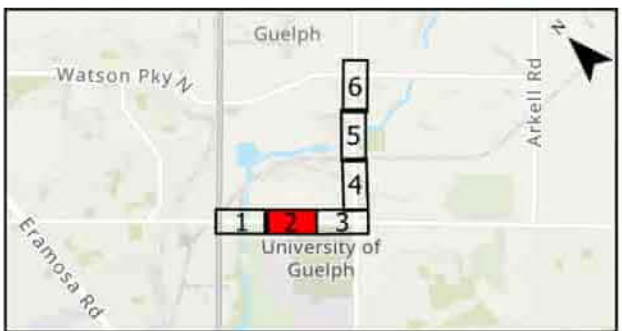
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Checked By: SY
Client: City of Guelph
Project: Victoria Road, Stone Road and Structure 116
Environmental Assessment
Project Number: 300059860
Date: 2025/12/04

0 10 20 30 40 50
Metres
1:1,750

5a.1



-  Study Area
-  Ecological Land Classification
-  Ecological Land Classification - Inclusion
-  Eastern Wood-pewee (SC)



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Coord. System: NAD 1983 UTM Zone 17N
Projection: Transverse Mercator
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Client: City of Guelph
Project: Victoria Road, Stone Road and Structure 116
Environmental Assessment
Project Number: 300059860
Date: 2025/12/04

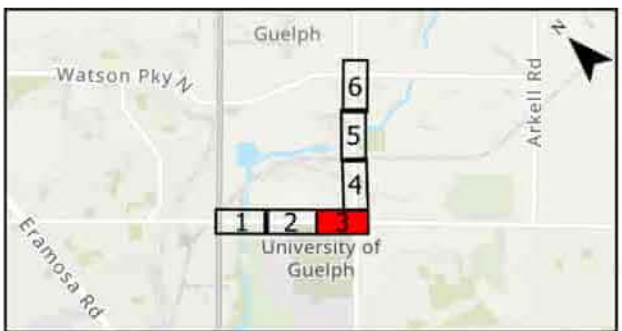
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 5a.2



- Study Area
- Ecological Land Classification
- Ecological Land Classification - Inclusion

- Confirmed Significant Wildlife Habitat:**
- Grasshopper Sparrow (NRSI)
 - Eastern Wood-pewee (SC)

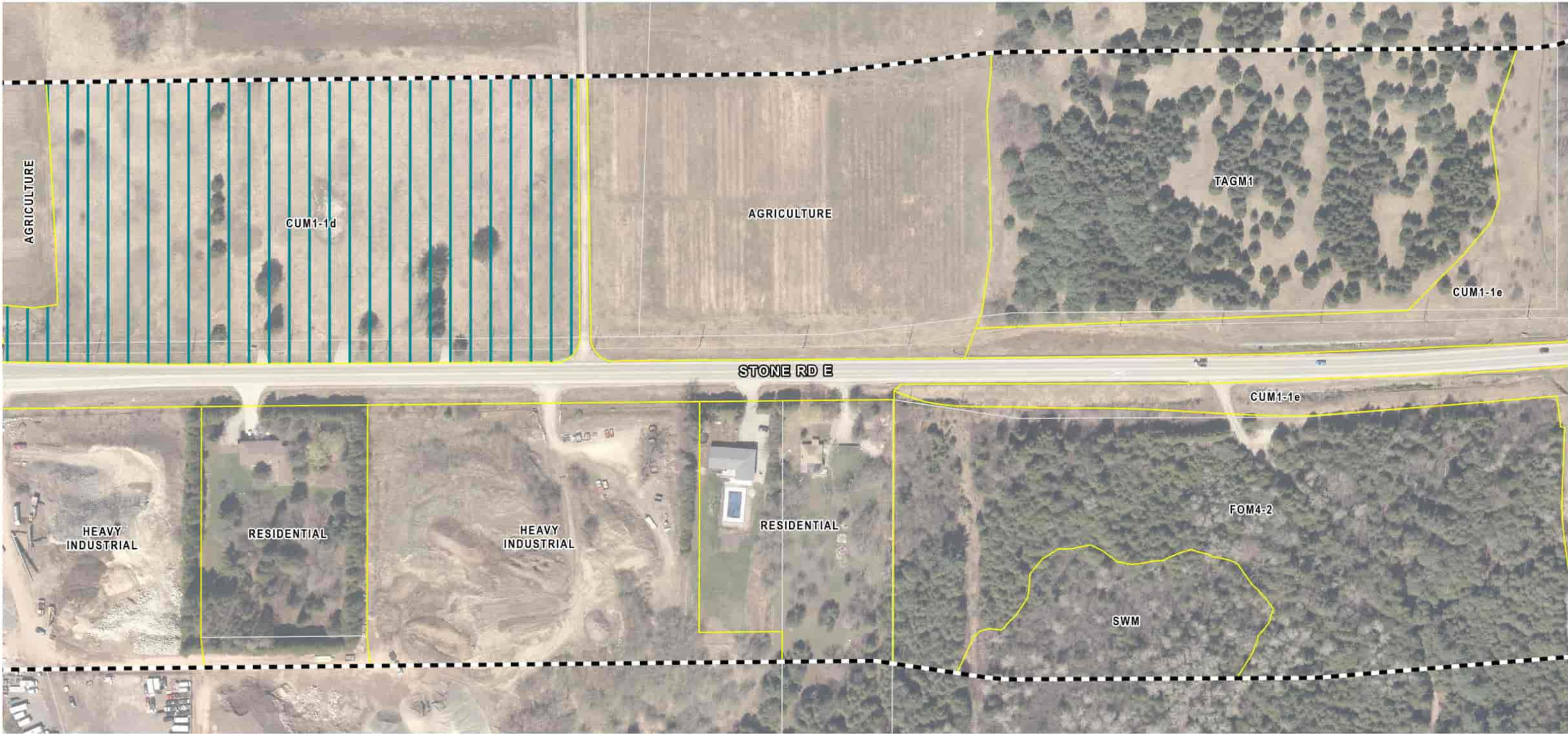


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Date: 2025/12/04

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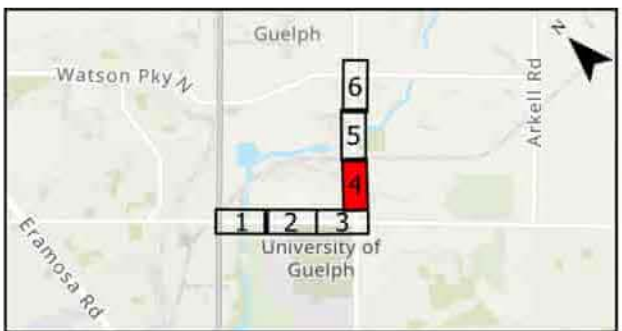
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-  Study Area
-  Ecological Land Classification
-  Ecological Land Classification - Inclusion

Confirmed Significant Wildlife Habitat:

-  Grasshopper Sparrow (NRSI)

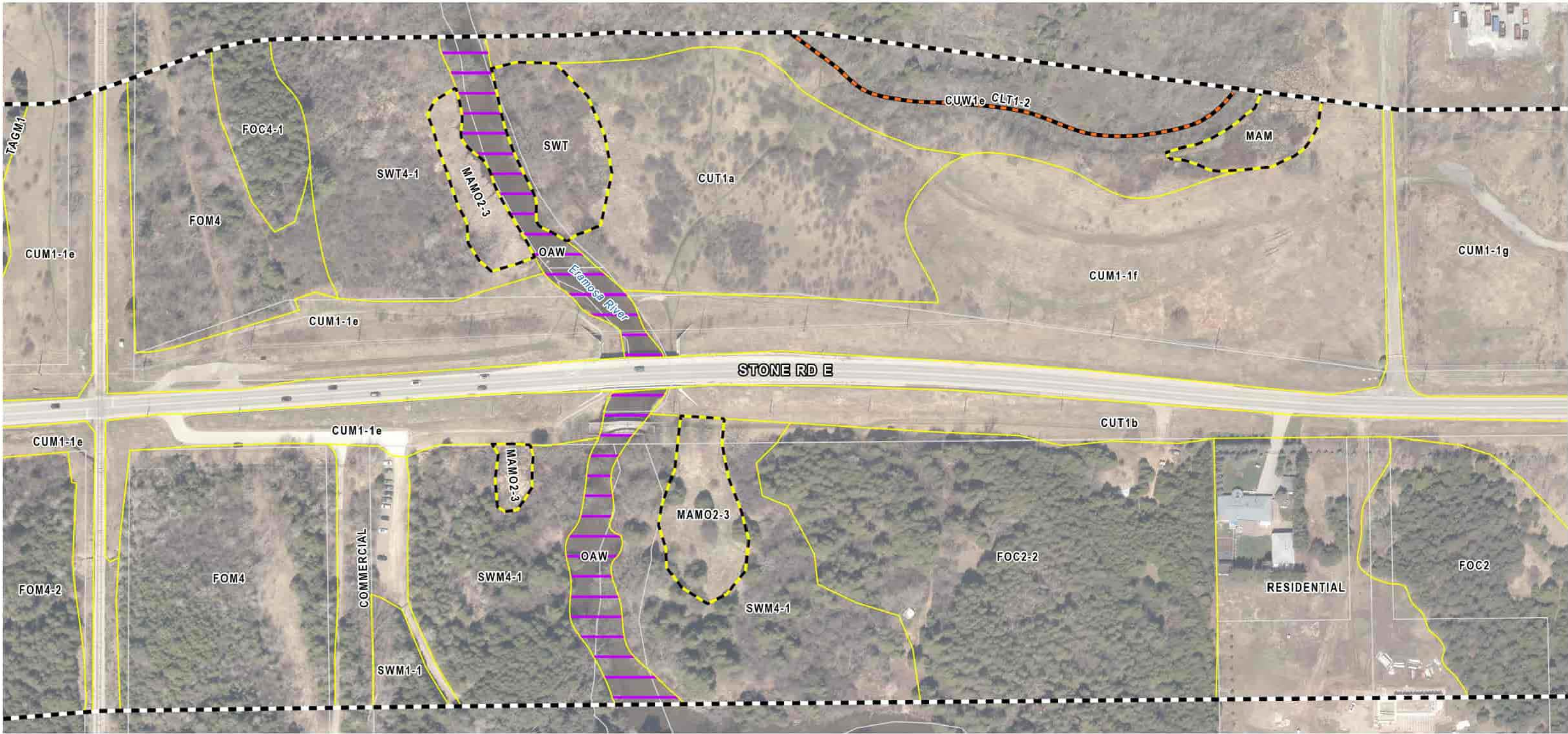


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Project: Victoria Road, Stone Road and Structure 116
Environmental Assessment
Project Number: 300059860
Date: 2025/12/04

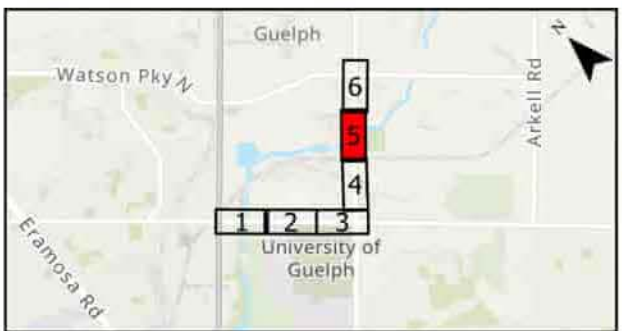
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 5a.4



- Study Area
- Ecological Land Classification
- Ecological Land Classification - Inclusion

- Confirmed Significant Wildlife Habitat:**
- Turtle Wintering Areas (NRSI)
 - Cliffs and Talus Slopes



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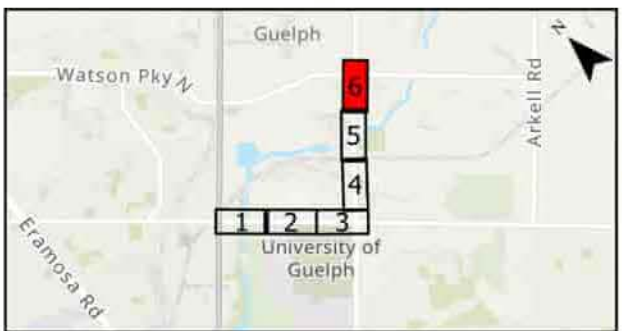
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Environmental Assessment
Project Number: 300059860
Date: 2025/12/04

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Metres
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5a.5



- Study Area
- Ecological Land Classification
- Ecological Land Classification - Inclusion

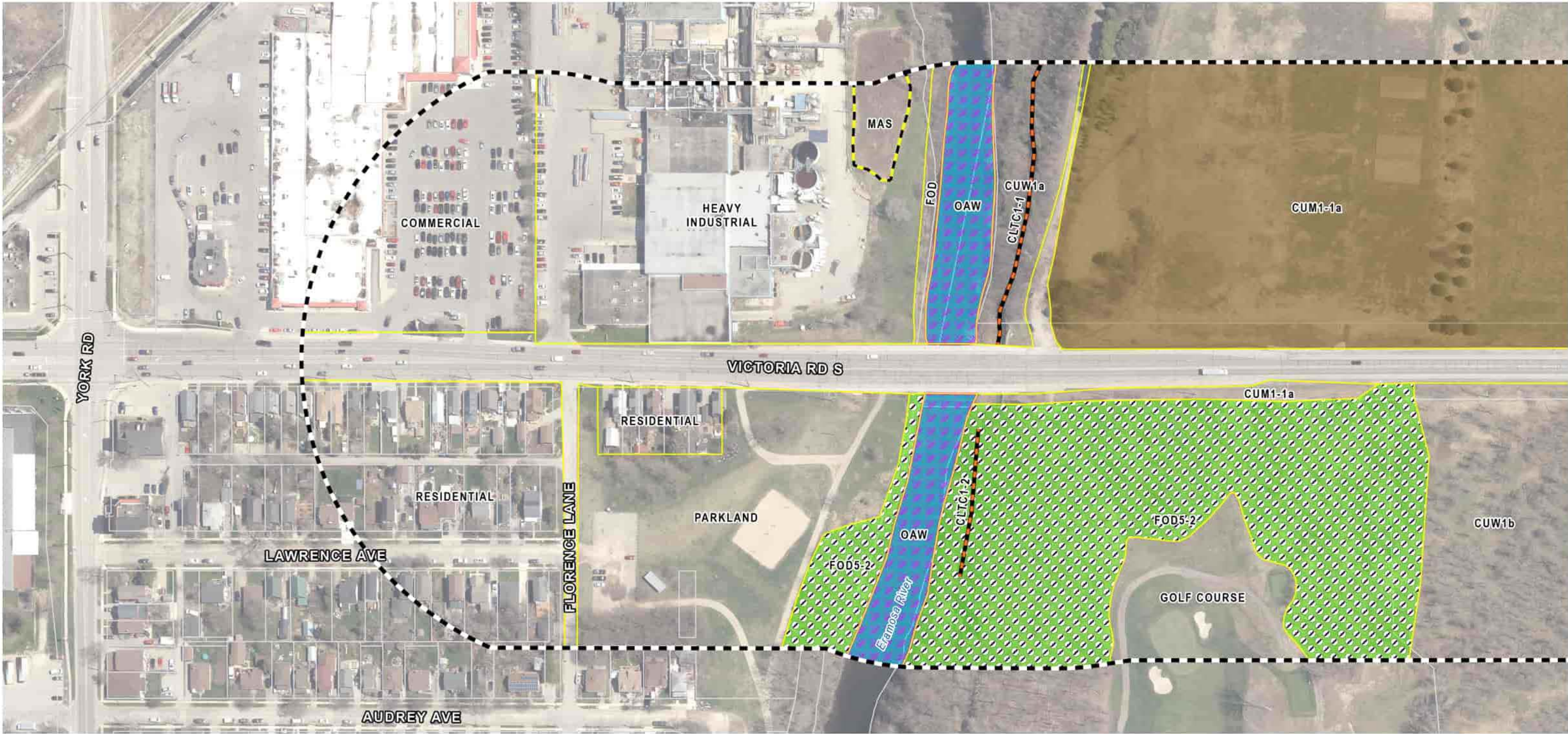


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Client: City of Guelph
Project: Victoria Road, Stone Road and Structure 116
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Date: 2025/12/04

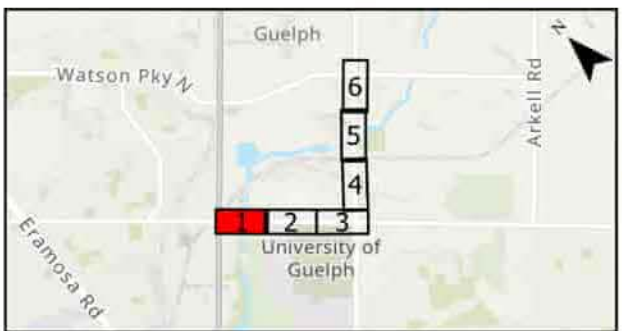
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5a.6



- Study Area**
- Ecological Land Classification
 - Ecological Land Classification - Inclusion
- Candidate Significant Wildlife Habitat:**
- Swamp Darner (S3S4)
 - Barn Swallow (SC)
 - American Bumble Bee (SC), Yellow-banded Bumble Bee (SC)
 - Hoary Long-horned Bee, Blushing Scale Lichen, Bristling Shadow Lichen
 - Bat Maternity Colonies
 - Waterfowl Stopover & Staging Areas (Aquatic), Northern Map Turtle (SC), Snapping Turtle (SC), Painted Skimmer (S3)
 - Bald Eagle & Osprey Nesting, Foraging & Perching Habitat

Yellowjacket Wasp (S3) - *Can be found throughout entire study area

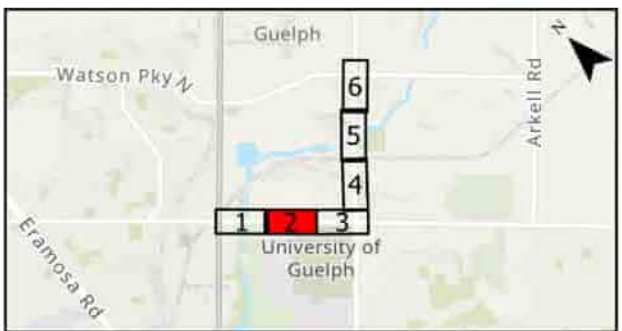
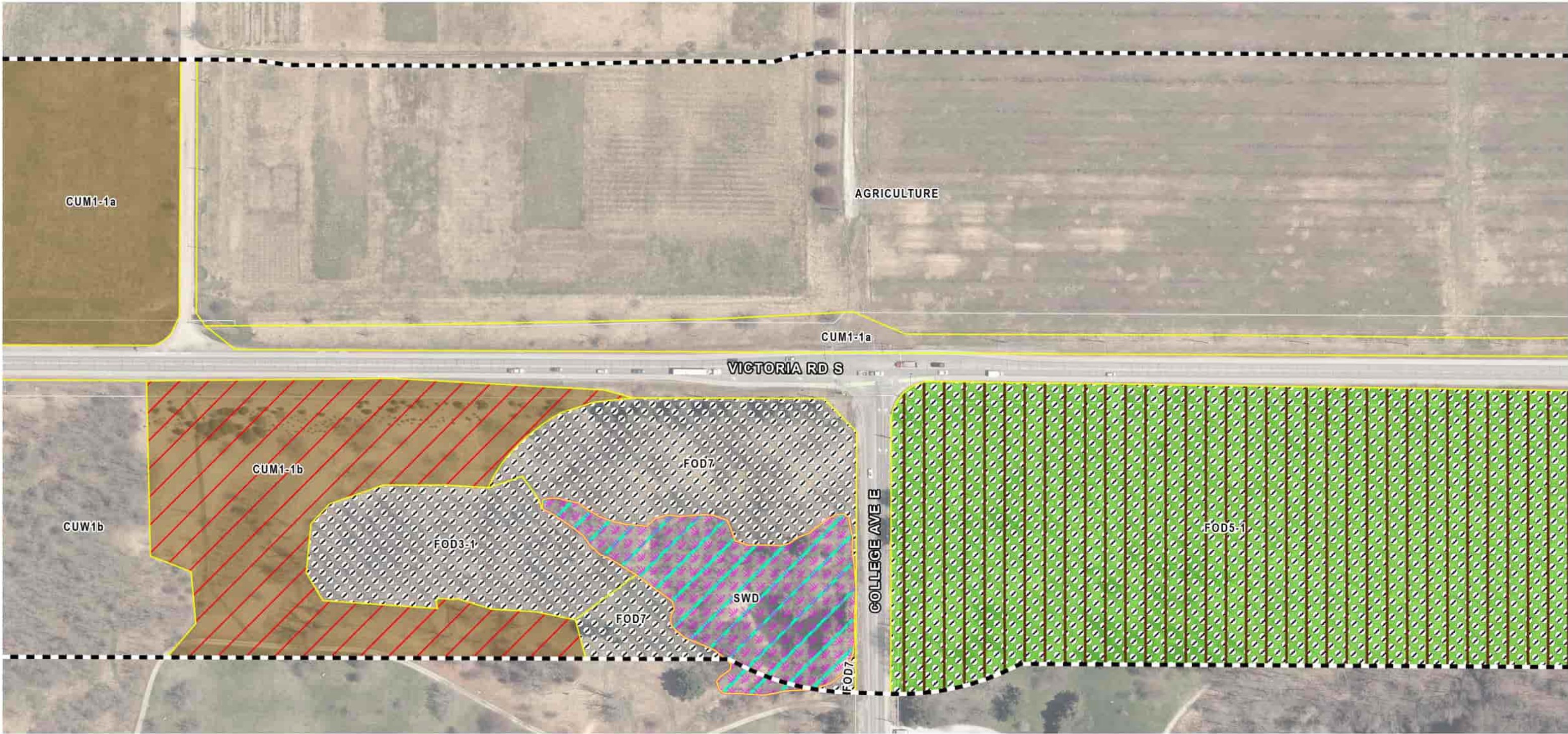


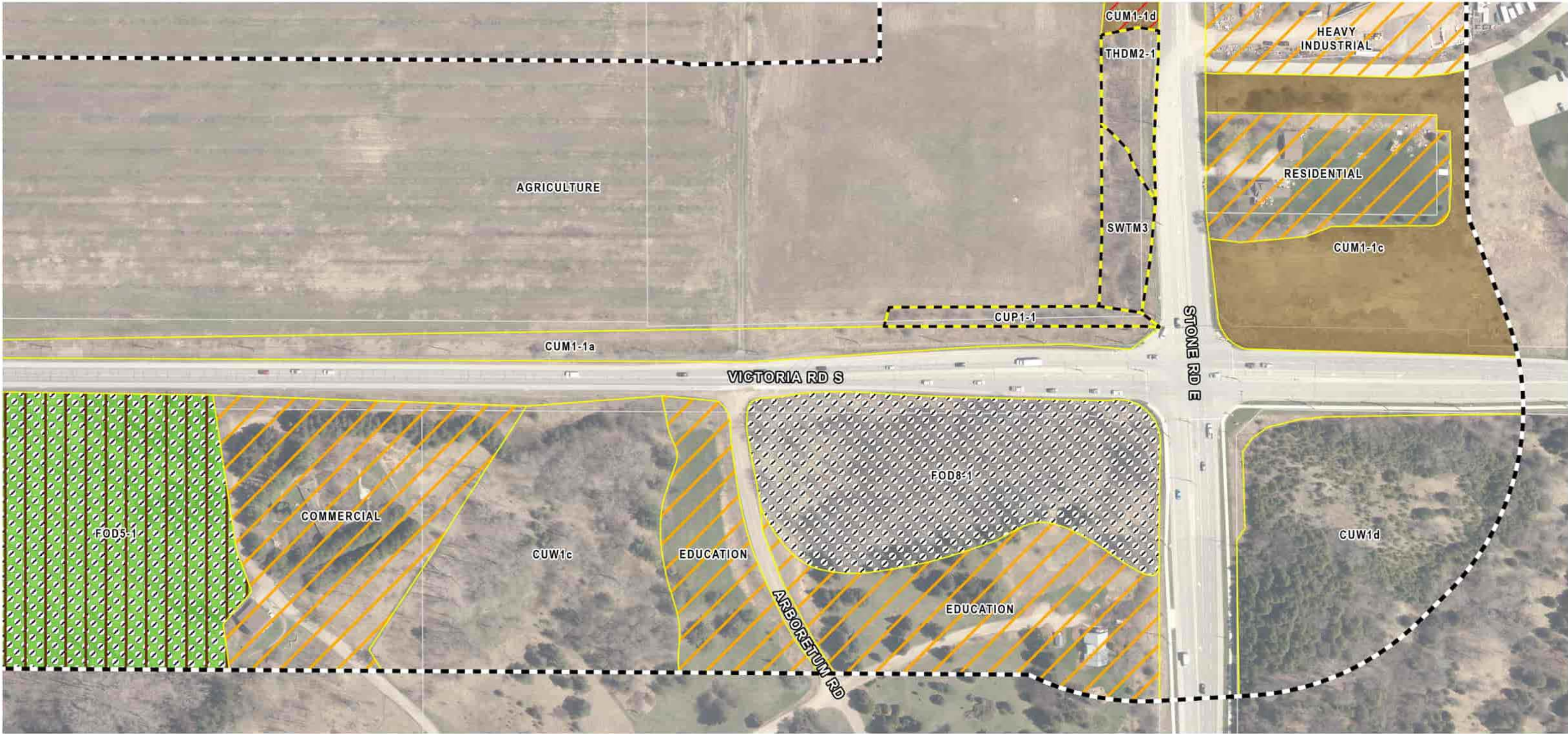
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Scale Factor: 0.99960
Rotation: 44.08

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Checked By: SY
Client: City of Guelph
Project: Victoria Road, Stone Road and Structure 116 Environmental Assessment
Project Number: 300059860
Date: 2025/12/04

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5b.1





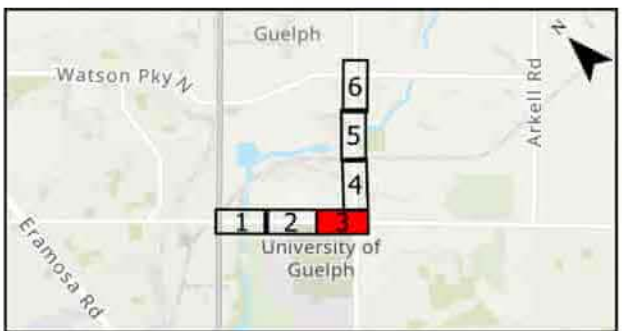
- Study Area
- Ecological Land Classification
- Ecological Land Classification - Inclusion

Candidate Significant Wildlife Habitat:

- Monarch (S3)
- Barn Swallow (SC)
- American Bumble Bee (SC), Yellow-banded Bumble Bee (SC)

- Bristling Shadow Lichen
- Bat Maternity Colonies
- Bald Eagle & Osprey Nesting, Foraging & Perching Habitat

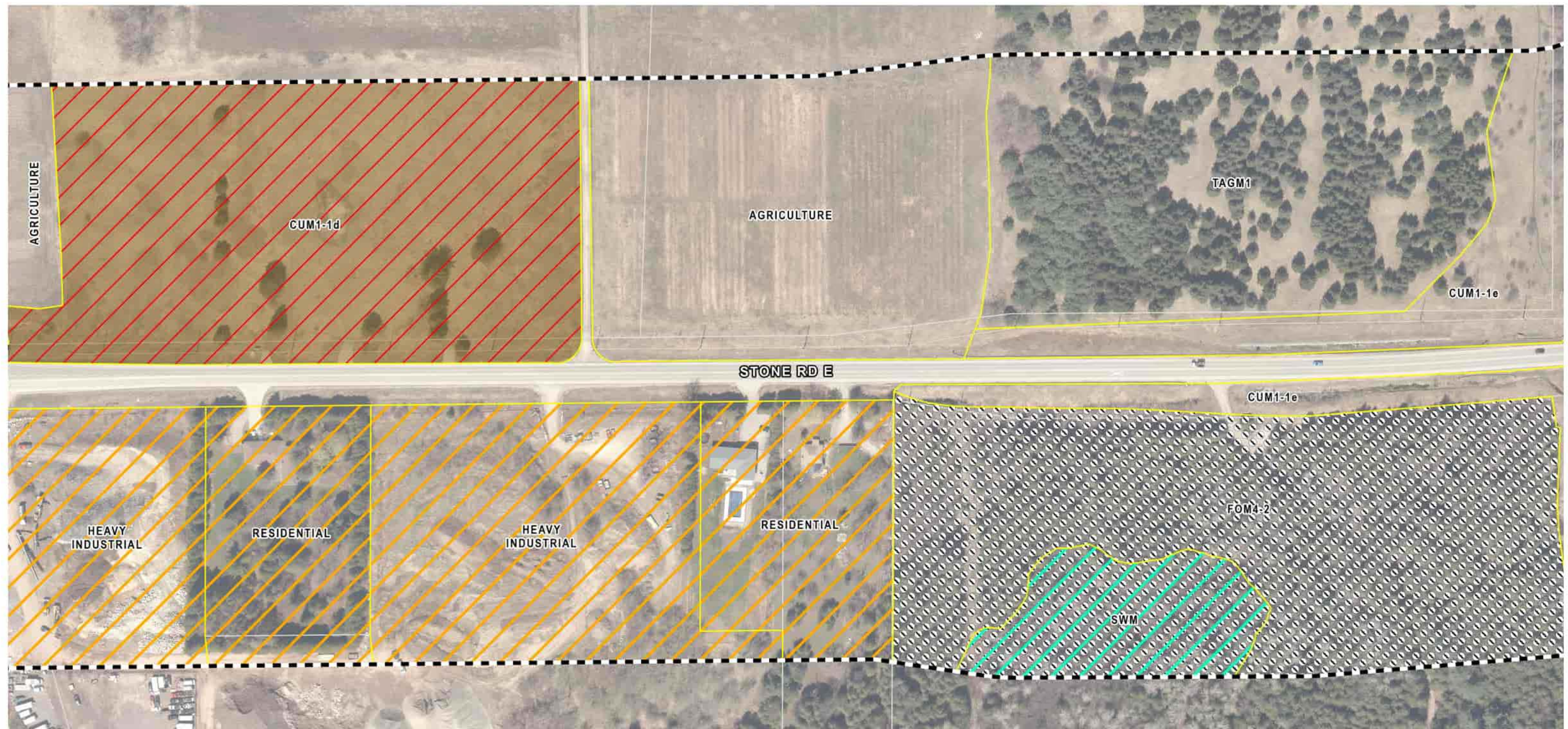
Yellowjacket Wasp (S3) - *Can be found throughout entire study area



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Projection: Transverse Mercator
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Client: City of Guelph
Project: Victoria Road, Stone Road and Structure 116 Environmental Assessment
Project Number: 300059860
Date: 2025/12/04

5b.3

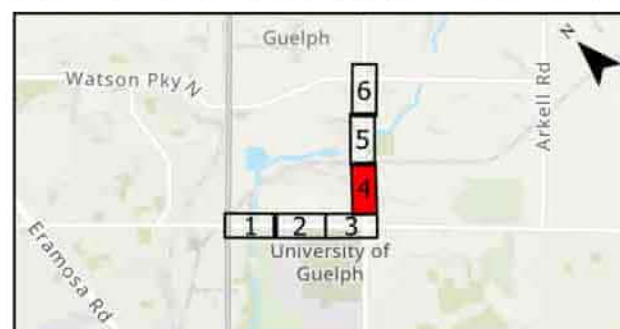


-  Study Area
-  Ecological Land Classification
-  Ecological Land Classification - Inclusion

- Candidate Significant Wildlife Habitat:**
-  Terrestrial Crayfish
 -  Monarch (S3)

-  Barn Swallow (SC)
-  American Bumble Bee (SC), Yellow-banded Bumble Bee (SC)
-  Bat Maternity Colonies

Yellowjacket Wasp (S3) - *Can be found throughout entire study area

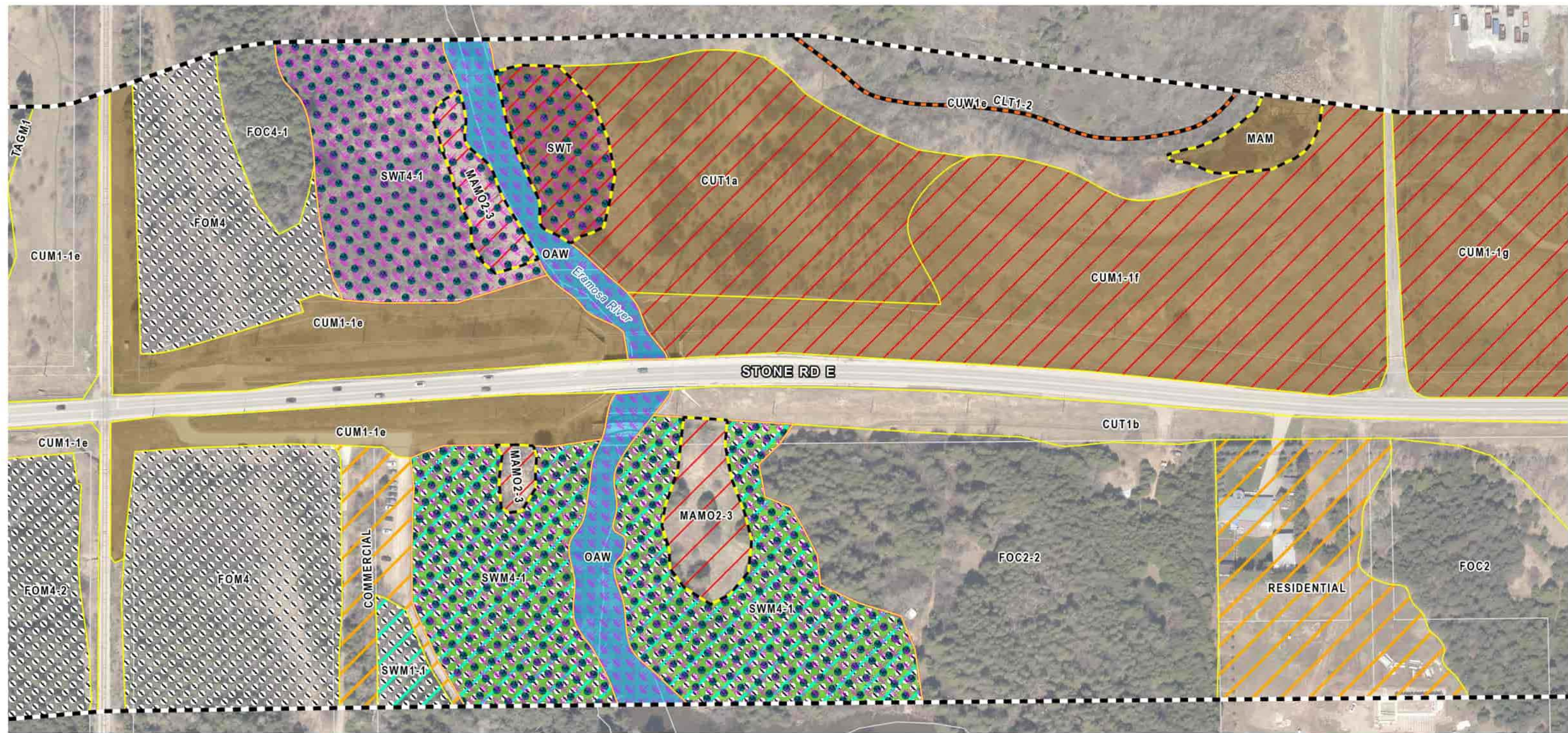


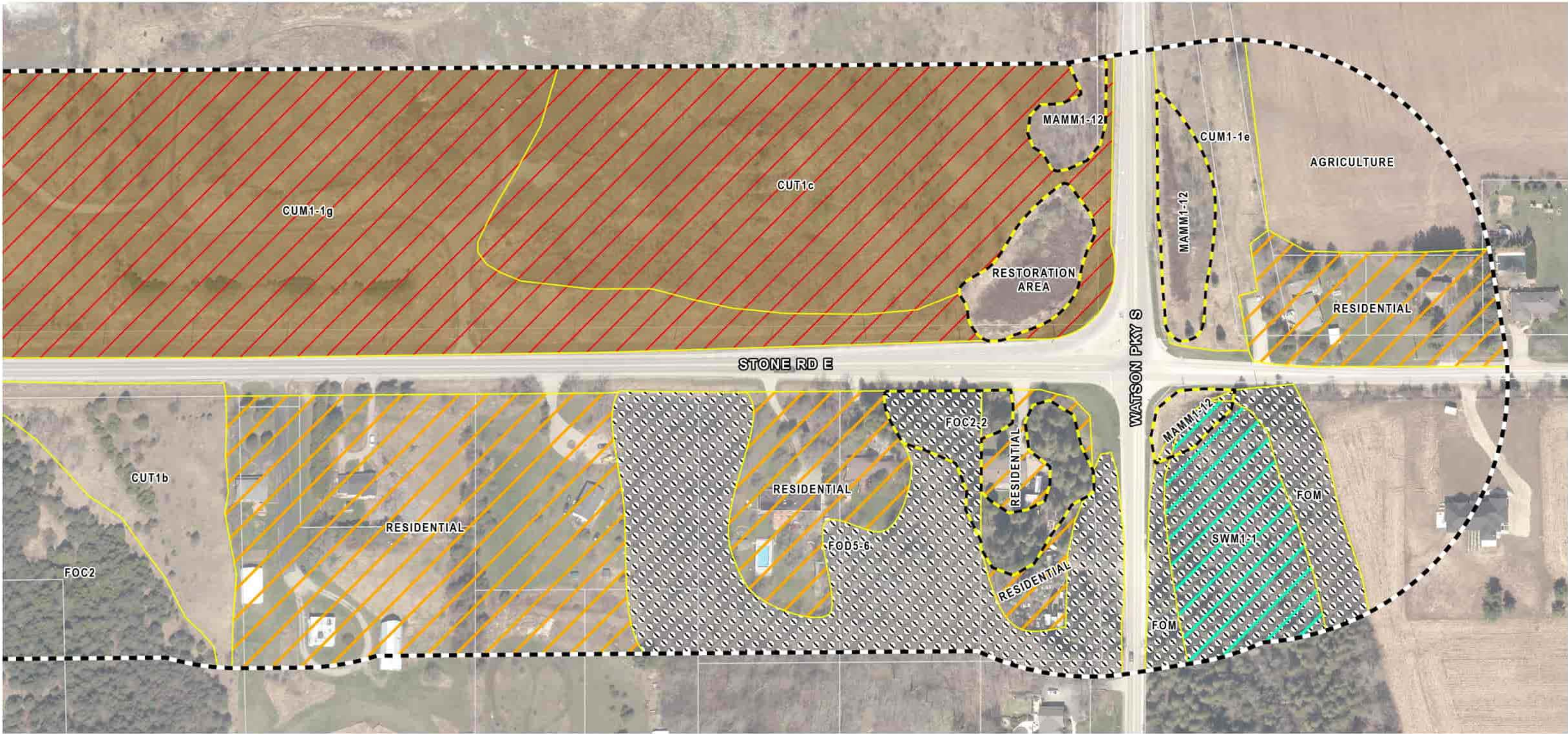
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Drawn By: HN
Checked By: SY
Client: City of Guelph
Project: Victoria Road, Stone Road and Structure 116 Environmental Assessment
Project Number: 300059860
Date: 2025/12/04

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Metres
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 5b.4



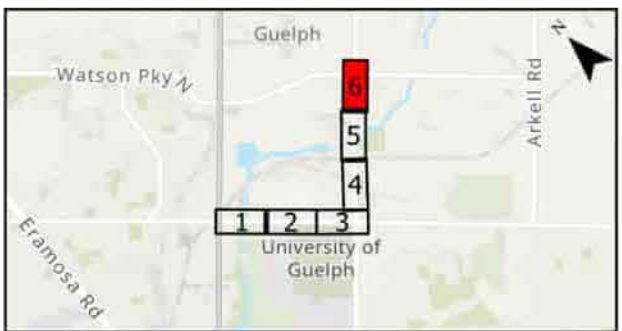


- Study Area
- Ecological Land Classification
- Ecological Land Classification - Inclusion

- Candidate Significant Wildlife Habitat:**
- Terrestrial Crayfish
 - Monarch (S3)

- Barn Swallow (SC)
- American Bumble Bee (SC), Yellow-banded Bumble Bee (SC)
- Bat Maternity Colonies

Yellowjacket Wasp (S3) - *Can be found throughout entire study area



Datum: North American 1983
Coord. System: NAD 1983 UTM Zone 17N
Projection: Transverse Mercator
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Scale Factor: 0.99960
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Project Number: 300059860
Date: 2025/12/04

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Metres
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5b.6

Turtle Wintering Areas – Confirmed

Turtle wintering may be supported within the Eramosa River and were confirmed to be present through field investigation by NRSI (2025). The remaining wetland communities within Burnside's study area lack standing water and will not support turtle wintering.

Cliff and Talus Slopes – Confirmed

Burnside confirmed the present of cliff slopes in association with the Eramosa River Valley. Cliff communities occur in association with the CUW1A, FODM5-2, and WOD communities as inclusions.

Bald Eagle & Osprey Nesting, Foraging & Perching Habitat

Nests for Bald Eagle and Osprey are associated with lakes, ponds, rivers and wetlands along forested shoreline. Suitable habitat to support Bald Eagle and Osprey Nesting, Foraging & Perching may occur in association with the valleylands of the Eramosa River including the FOD5-2 and SWM4-1.

No stick nests were identified during Burnside's field visits; however, Osprey are known to be nesting on the nearby University of Guelph Campus and Osprey have been frequently observed foraging on the Eramosa River (based on eBird records). Foraging and perching habitat may still be supported within the forest and swamp communities along the valley walls of the Eramosa River.

Terrestrial Crayfish

Terrestrial Crayfish construct burrows in wet meadow and edges of shallow marshes and can often be found far from water. No Terrestrial Crayfish burrows were found within the ROW but may be supported within wetlands on privately owned property that was not subject to review by AECOM and NRSI including the SWM1-1, SWM4-1, and SWD communities.

Rare Species and Species of Special Concern

Several Rare Species and Species of Special Concern have the potential to occur within the study area or were documented by Burnside or others to be present within the study area.

Candidate habitat has been identified for the following species:

- American Bumble Bee (SC)
- Blushing Scale Lichen (S3)
- Bristling Shadow Lichen (S2S3)
- Eastern Ribbonsnake (SC)

- Hoary Long-horned Bee (S2S3)
- Northern Map Turtle (SC)
- Painted Skimmer (S3)
- Snapping Turtle (SC)
- Swamp Darmer (S3S4)
- Yellow-Banded Bumble Bee (SC)
- Yellowjacket Wast (S3) – throughout entire study area

Habitat for the following species has been confirmed within the study area for the following species:

- Barn Swallow (SC)
- Eastern Wood-pewee (SC)
- Grasshopper Sparrow (NRSI only, was not observed by Burnside)

Further discussion regarding Rare Species and Species of Special Concern can be found in Appendix B.

The locations of SWH features are shown on Figure 5A and 5B.

6.7 Habitat of Endangered and Threatened Species

Burnside's background database review and field investigations in 2025 revealed the potential for species listed as Endangered or Threatened on the subject lands and/or adjacent lands. A screening to confirm where habitat exists is presented in Appendix B.

A summary of the locations of candidate and confirmed END and THR habitat can be seen on Figure 6.

Species which may be present in the study area are further described below.

Black Ash

Black Ash is a tree that occurs in swamps, floodplains, and fens up to 51° latitude. This species extends the furthest north of all the native ash species in Canada. The greatest threat in Ontario is invasive Emerald Ash Borer (COSEWIC, 2018).

A Health Assessment Report will be required to impact (i.e. damage or remove) a healthy Black Ash and registration may be required for healthy trees with a DBH 8 cm DBH and greater.

Although no individual Black Ash specimens were incidentally encountered by Burnside, Black Ash was observed by AECOM in association with the SWT4-1 and SWM4-1 communities.

The location of any Black Ash specimens protected under O. Reg. 60/26 should be confirmed during tree inventory to be completed for the Environmental Assessment and detailed design phase (by others).

Bank Swallow

Bank Swallow nest in exposed earthen banks along shorelines and in artificial sites such as gravel pits (Cadman et al. 2007). A bank swallow colony (4 nests) was observed on a soil stockpile adjacent to Stone Road on a private property located at 557 Stone Road East. Bank Swallows were also observed foraging near BBS-012.

Eastern Meadowlark (EAME)

'Probable' evidence of EAME breeding was observed at BBS-003 and BBS-012 within Burnside's study area. Additionally, previous evidence of breeding was observed by NRSI at the agricultural communities along Stone Road during their 2022 field program. These communities were not found to be suitable to support Eastern Meadowlark during Burnside's field investigations.

AECOM also found the 'possible' evidence of breeding within the CUM1-1f, CUM1-1g, and CUT1c community in 2021 within the City of Guelph Operations Campus. EAME was not found within these habitats during Burnside's field investigations.

All EAME habitat was found within development limits of the GID lands and City of Guelph Operations Campus, outside of the study area for this project.

Candidate SAR

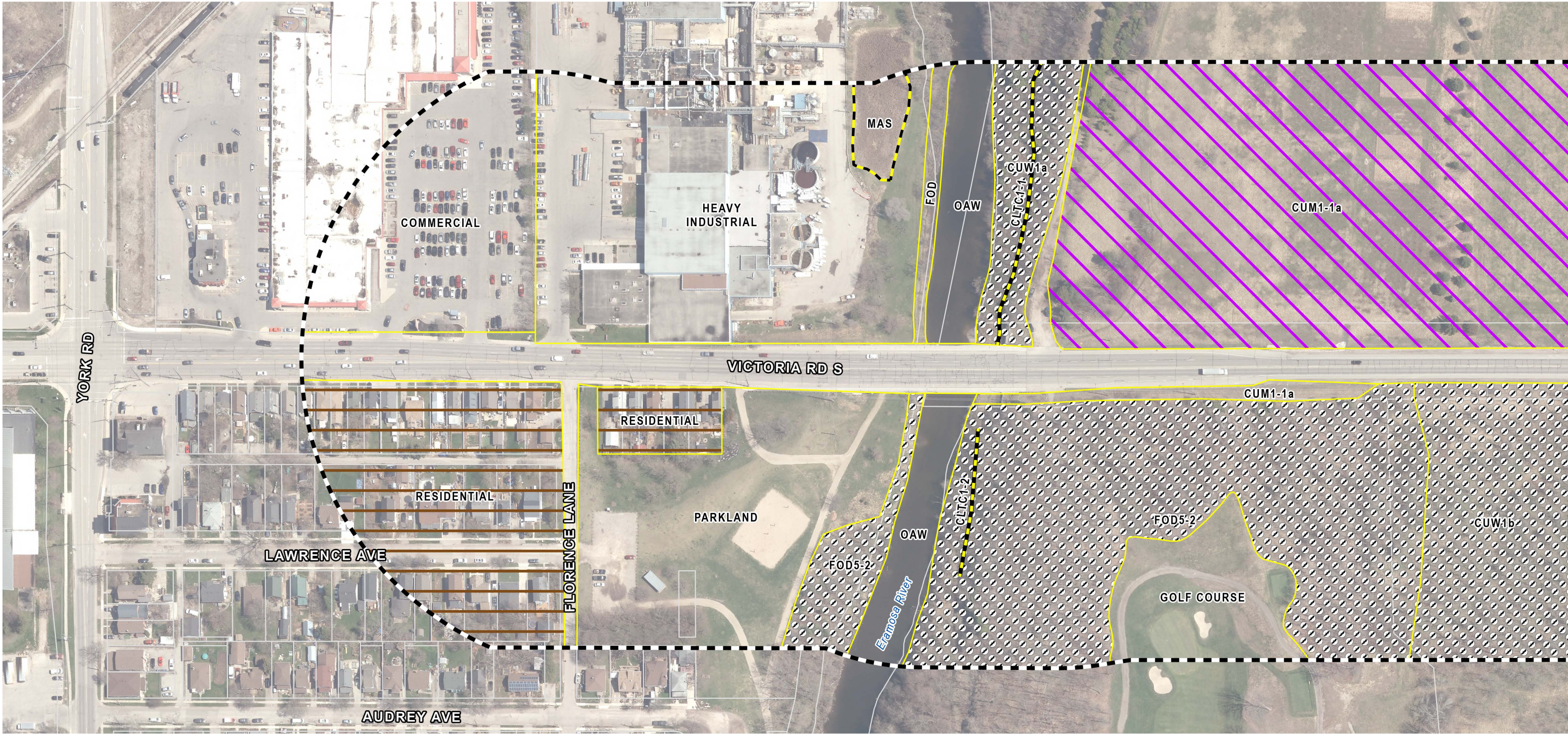
SAR Bats

SAR bats including Eastern Red Bat (*Lasiurus borealis*), Hoary Bat (*Lasiurus cinereus*), Northern Myotis (*Myotis septentrionalis*), Little Brown Myotis (*Myotis lucifugus*), Silver-haired Bat (*Lasionycteris noctivagans*), and Tri-colored Bat (*Perimyotis subflavus*) may occur within the study area. Targeted surveys (i.e. acoustic monitoring) to determine their presence or absence were not completed as part of the current scope of work. It is presumed that habitat to support all the above species occurs within the area.

Mapping and assessment of candidate bat maternity roost trees will be completed when the preferred alignment of the road design has been completed, and an addendum with guidance on impacts and compensation will be provided.

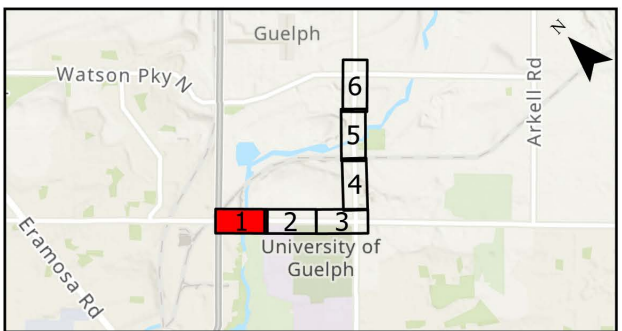
Chimney Swift

A Chimney Swift was observed foraging within the study area. Suitable habitat to support this species may occur within constructed communities that were not subject to Burnside review and will not be impacted by proposed alterations to the road ROW.



-  Study Area
-  Ecological Land Classification - Inclusion
-  Ecological Land Classification
- Confirmed:**
-  Eastern Meadowlark (THR) (RJB Confirmed)

- Candidate:**
-  SAR Bats (END)
-  Chimney Swift (THR)



Datum: North American 1983
Coord. System: NAD 1983 UTM Zone 17N
Projection: Transverse Mercator
Central Meridian: 81°0'0.00"W
False Easting: 500,000m
False Northing: 0m
Scale Factor: 0.99960
Rotation: 44.08

Drawn By: HN
Checked By: SY
Client: City of Guelph
Project: Victoria Road, Stone Road and Structure 116
Environmental Assessment
Project Number: 300059860
Date: 2025/12/04

0 10 20 30 40 50
Metres
1:1,750

 **6.1**

6.8 Regulated Hazard Lands

Online GRCA Regulation mapping shows portions of the study area are regulated by the GRCA. These areas are associated with valleys and their slopes, floodplains, waterbodies, and wetlands (evaluated and unevaluated) that are affiliated with the Eramosa River. Regulated lands associated with wetlands are also found at the southeast portion of the study area, at the intersection of Stone Road East and Watson Parkway South. Regulated lands are shown on Figure 2.

7.0 Summary of Significant Natural Features

Significant natural features in the study area include:

- Provincially Significant Wetlands, including the Eramosa River Blue Springs Creek Wetland Complex and Torrance Creek Swamp PSW
- Other wetlands
- Significant Woodlands
- Fish habitat in the Eramosa River and its tributaries
- Confirmed SWH, including:
 - Turtle Wintering Areas – Confirmed (NRSI, 2025)
 - Rare Vegetation Communities
 - Cliffs and Talus Slopes
- Candidate SWH, including:
 - Waterfowl Stopover & Staging Areas (Aquatic)
 - Bat Maternity Colonies
 - Bald Eagle & Osprey Nesting, Foraging & Perching Habitat
 - Terrestrial Crayfish
- Special Concern and Rare Wildlife Species, including:
 - American Bumble Bee
 - Blushing Scale Lichen
 - Bristling Shadow Lichen
 - Eastern Ribbonsnake
 - Hoary Long-horned Bee
 - Northern Map Turtle
 - Painted Skimmer
 - Snapping Turtle
 - Swamp Darmer
 - Yellow-Banded Bumble Bee
 - Barn Swallow
 - Eastern Wood-pewee
 - Grasshopper Sparrow (NRSI only, was not observed by Burnside)
- Areas where wildlife crossing opportunities exist

- A Significant Valley along the Eramosa River
- The Guelph Correctional Centre Quarry Provincial Earth Sciences ANSI, just outside of the Study Area
- Hazard lands regulated by the GRCA

All these natural features are shown on Figure 2, Figure 5A, Figure 5B, and Figure 6.

8.0 Guidance for Project Development and Design

The project is in the early stage of development as of the writing of this report. The project is likely to include widening of all or some portions of Victoria Road and Stone Road and some work to address existing safety concerns at McQuillan's Bridge. A detailed impact assessment will be carried out in the MCEA document when the project is further developed.

The purpose of this report is to guide the project development in a manner that minimizes impacts to natural features.

It is the recommendation of this report, to avoid direct and indirect disturbance to all significant and regulated natural features to the extent possible. It is, however, acknowledged that avoidance may not be possible in all instances. The preferred alternative for the road widening projects and McQuillan's Bridge improvement project will be selected through careful consideration of a variety of factors, including cultural heritage, socio-economic conditions and technical criteria, among others.

While it may not be possible to avoid disturbance to all natural features, protection of the following features will be prioritized in the following order:

- Provincially Significant Wetlands
- Other Wetlands
- Habitat of Endangered and Threatened Species
- Significant Woodlands
- Significant Wildlife Habitat

Where avoidance is not possible, the measures described in Table 8.1 may be required to ensure that no negative impacts to the above listed features, and to ensure there is a net ecological benefit, as per section 4.1.2.4 of the City of Guelph Official Plan. A more detailed assessment of impacts will be completed when the preferred solution is selected. If the policy tests of 4.1.2.4 cannot be met, a City-initiated site-specific Official Plan Amendment will be required.

Table 8.1: General Mitigation Measures to Minimize Impacts to Natural Features

Feature	Description of Potential Effects	Mitigation Measures
Significant Woodlands and other Treed Areas	Removal of trees results in the loss of tree cover, shade, soil stability, wildlife habitat, stormwater absorption and other benefits that trees provide.	• The boundaries of any woodlands that may be subject to impacts will be established on-site through staking with City staff. • A Tree Inventory and Preservation Plan will be completed once the preferred alignment has been identified and the preliminary grading limits are known. • Tree removals should be compensated with new tree plantings on City-owned properties as close as possible to the area of removal. Trees that are 10 cm dbh and greater will be replaced at a 2:1 ratio. Smaller trees (seedlings and whips) will be replaced at a 1:1 ratio. • Compensation plantings will be undertaken prior to tree removals or at the earliest appropriate season after tree removals. • Tree Protection Zones (TPZs) will be established during detailed design and based on data collected during the tree inventory. • Appropriate tree protection fencing will be installed around trees to be protected using plywood clad boarding or an equivalent material approved by the City. • No stockpiles, storage or disturbance to grade will occur within the TPZ to minimize soil compaction and root damage. • Where tree roots are encountered during construction, they should be cut cleanly and re-packed with soil as soon as possible. • A Landscape / Restoration Plan will be developed during the detailed design stage to outline how, and where, tree planting will occur and how restoration of lands disturbed during construction will be carried out. • The Landscape / Restoration Plan will use only native species.
Provincially Significant Wetlands / Other Wetlands	Removal of wetlands results in the loss of wildlife habitat, natural stormwater management and other benefits received from wetlands.	• No stockpiles, storage or disturbance to grade will occur within 30 m of a wetland. • The boundaries of any wetlands that may be subject to impacts will be established on-site through staking on-site with GRCA and City staff. • If impacts to a wetland, or wetland buffer, are unavoidable a Wetland Compensation Plan will be developed that ensures no net loss of wetland size or function. The Compensation Plan will be developed in accordance with GRCA regulations and will be approved by the GRCA during the detailed design and approvals process.
Nests of Migratory Birds /	Clearing of trees, shrubs and ground vegetation	• Any vegetation clearing will take place outside of the breeding bird and bat roosting timing window; generally, from April 1 to November 30.

Feature	Description of Potential Effects	Mitigation Measures
Roosting Habitat for Rare Bats	has the potential to disturb or destroy nests of migratory birds and maternity roosting areas for bats. Active nests on bridge structures may be disturbed during construction.	• If clearing must occur within this window: – A qualified Ecologist / Avian Biologist will first search the affected area. Any active nests will be flagged and all clearing within the associated habitat will be avoided until the Ecologist / Avian Biologist confirms that the birds have fledged, and the nest is no longer active – If a nesting migratory bird (or SAR protected under ESA, 2007) is identified within or adjacent to the construction site, all activities will stop, and the Contractor shall discuss mitigation measures with the proponent. In addition, the proponent will contact the MECP to discuss applicable mitigation options. The Contractor will proceed based on the mitigation measures established through discussions with the MECP – Clearance must be provided by MECP in relation to the removal of trees within the bat roosting season • If it is known that work on a bridge will be required during the nesting season, exclusion netting may be installed ahead of the season to limit the ability of birds to nest on the structure for one season. The netting must be removed as soon as possible after construction.
Eastern Meadowlark Habitat	Removal of a portion of Regulated Eastern Meadowlark Habitat.	• The amount of habitat loss will be quantified during detailed design and mitigation measures such as habitat improvement or compensation may be required. Migratory Bird Species no longer receives protection under the SCA and instead will receive protection under the federal SARA.
Species at Risk Trees	Rare species, which have not yet been identified in the area, may be present and could be disturbed by the project works.	• A tree inventory will be completed to determine if any Black Ash, Butternut or other at-risk vegetation is present. • Assessment of the health of the tree according to provincial methodologies and registration of the impact may be required under the SCA.
All Adjacent Natural Features	Sediment and erosion impacts associated with land grading and clearing.	• All work zones should be clearly marked on detailed design drawings and at the work site to indicate that no work should occur outside the work zone. • Detailed grading, construction, dewatering and erosion and sediment control (ESC) plans will be submitted to the GRCA for review and comment at detailed design. • Implementation of the ESC measures will conform to industry best management practices and recognized standard specifications such as Ontario Provincial Standards Specifications (OPSS).

Feature	Description of Potential Effects	Mitigation Measures
		• The ESC Plan will also take into account the GGHACA Erosion and Sediment Control Guidelines for Urban Construction (2006). • ESC measures will be implemented prior to construction and maintained during the construction phase in accordance with the ESC plan developed during detailed design. • All ESC measures will be inspected prior to construction and maintained during the construction phase to prevent entry of sediment into natural features. • Routine upkeep and maintenance of ESC features are to include regular monitoring for erosion and sedimentation impacts due to site grading during and after trail construction. • If the ESC measures are not functioning properly, no further work in the affected areas will occur until the sediment and / or erosion problem is addressed. • All disturbed areas of the construction site will be stabilized and re-vegetated as soon as conditions allow. • ESC measures will be left in place until all areas of the construction site have been stabilized and will then be removed by the Contractor. • Wet weather restrictions shall be applied during site preparation and excavation. Work will be avoided near watercourses during periods of excessive precipitation and/or excessive snow melt. • The Contractor will be aware of spill prevention best practices and will have contingency plans in place should a spill occur. Personnel will be trained in how to apply the plans. Spills or depositions into watercourses will be immediately contained and cleaned up in accordance with provincial regulatory requirements and the contingency plan. Spills will be reported to the Ontario Spills Action Centre at 1-800-268-6060.
Rare snakes and turtles	Habitat for turtles and aquatic snakes in the Eramosa River could be disturbed by work on, and around, the river banks and adjacent lands.	• ESC fencing in areas adjacent to the Eramosa River should be designed to effectively exclude Snapping Turtle, Midland Painted Turtle, Northern Map Turtle, Blanding’s Turtle, and Eastern Ribbonsnake from active work areas. Turtles are often drawn to nest in areas with exposed soils, including construction sites.

Feature	Description of Potential Effects	Mitigation Measures
Bank Swallow	Bank swallows could nest in stockpiled or exposed soils during construction. Construction activities could then harm this species or its habitat.	A Soil Management Plan (SMP) should be prepared which will include a strategy to prevent Bank Swallow nesting in stockpiled or exposed soils.
Natural Areas	Introduction of invasive species into natural areas.	- Construction equipment should be cleaned prior to bringing it to the site to avoid introducing exotic species from other sites. The Clean Equipment Protocol for Industry (Halloran et. al., 2013) will be followed. - All disturbed areas of the construction site will be re-vegetated as soon as conditions allow. - Re-vegetation of disturbed areas will be carried out in accordance with a Landscape / Restoration Plan to be developed during the detailed design stage. - The Landscape / Restoration Plan will use only native species. - If extensive invasion of non-native species is identified as a result of the Project, contingency measures may need to be developed, including the potential need for a herbicide application. An herbicide application plan will be developed as required.
Wildlife	Mortality of wildlife inadvertently moving through construction zones.	- Silt fencing will be properly installed and maintained in accordance with the ESC plan to keep wildlife out of work areas. - If wildlife inadvertently moves into a construction area, the Environmental Inspector will move the species outside of the work area, if possible, using gloves and a bucket or plastic tub, as appropriate. - If any SAR are encountered that are not identified on relevant permits, all work will cease within the immediate work area and the MECP will be contacted.
Wildlife	Dust effects on wildlife habitat.	As appropriate, dust from the work areas will be controlled through suppressants (e.g., water).
Wildlife	Wildlife can be hurt or killed crossing busy roadways.	Opportunities to improve wildlife crossings will be explored during the detailed design of Victoria Rd. and Stone Rd. with a focus on the wildlife crossing opportunities identified in the City's Official Plan.

Feature	Description of Potential Effects	Mitigation Measures
Groundwater / Wetlands	Effects on hydrology due to changes to site grading and decreased permeability.	• A Grading Plan will be developed during detailed design to ensure that project works do not alter surface drainage patterns.
Groundwater / Wetlands	Effects on hydrology due to dewatering.	• Minor dewatering may be required during work in, and around, bridge footings. • All requirements under the Ontario Water Resources Act, R.S.O. 1990, c. O.40 with respect to the quality of water discharging into natural receivers will be met, including the following mitigation measures and best practices: • Any discharge from dewatering should outlet to a vegetated area at least 30 m from a significant natural feature or watercourse utilizing a sediment filter bag. • In the event of sediment discharge, all operations will stop immediately until the problem can be resolved. • If significant changes in water levels / seepage areas are noted, operations will cease until water levels recover. • Appropriate measures are to be implemented where necessary to maintain or improve runoff quantity and quality to adjacent wetlands.
Groundwater / Surface Water / Natural Areas	There is potential for spills of fuels or other hazardous materials to occur during fueling of construction equipment or other construction activities.	• All materials and equipment used for the purpose of site preparation and project construction shall be operated and stored in a manner that prevents any deleterious substances (petroleum products, silt, etc.) from entering natural features. • Any stockpiled materials will be stored at least 30 m away from wetlands or watercourses. • Refueling and maintenance of construction equipment should occur a minimum of 30 m from a natural feature. • Hazardous material transportation and application will occur in designated areas according to operational procedures. Proper spill containment equipment will be used and maintained on site. • The Contractor will be aware of spill prevention best practices and will have contingency plans in place should a spill occur. Personnel will be trained in how to apply the plans. Spills or depositions into watercourses will be immediately contained and cleaned up in accordance with provincial regulatory requirements and the contingency plan. Spills will be reported to the Ontario Spills Action Centre at 1-800-268-6060.
Valleyland / Steep Slope	Any steep slopes associated with Valleylands could be	• The setback from the Eramosa River for any new construction work will be confirmed with the GRCA during detailed design. • Detailed design plans will be submitted to the GRCA to confirm that all work is in compliance with GRCA Regulations.

Feature	Description of Potential Effects	Mitigation Measures
	disturbed by vegetation removal, grading work and the movement of large equipment which could result in erosion, slumping or slope failure.	Wet weather restrictions will be applied during site preparation and excavation. Work will be avoided in Valleylands during periods of excessive precipitation and/or excessive snow melt.
Fish Habitat / Eramosa River and tributaries	Work in riparian areas and in-water can disrupt habitat.	- The footprint of disturbed areas will be minimized to the extent possible. - Vegetated buffers will be left in place adjacent to watercourses / waterbodies to the maximum extent possible. - Wet weather restrictions will be applied during site preparation and excavation. Work will be avoided near watercourses during periods of excessive precipitation and/or excessive snow melt. - The roads will be designed to meet appropriate storm design requirements in order to avoid hydrologic effects. - All requirements under the Fisheries Act will be met including Project Review or permitting. - Following construction, all disturbed riparian areas should be restored and/or revegetated as soon as conditions allow using native materials. - Near-water work and work below the annual high-water mark will adhere to the appropriate in-water work timing window to avoid potential impacts to resident and migratory fish species. The proposed timing in-water window for this project, if required, is from July 15 to September 30 to accommodate both spring and fall spawning fishes. - Works will be performed in isolation of flowing waters. Work zone isolation will be achieved by placing cofferdams constructed of clean, non-erodible materials at the upstream and downstream limits of the work area. - Fish will be removed from the work area prior to the commencement of in-water works. Fish rescues will occur under a License to Collect Fish (LCF) obtained from the MNR. - All pump inlets will have a suitable screen to prevent the entrainment / impingement of fish. - Machinery will not enter the watercourse. - Any discharge from dewatering will outlet to a vegetated area at least 30 m from the watercourse and utilize a sediment filter bag. A second pump and extra filter bags must be kept on site at all times. - In the event of sediment discharge, all operations will stop immediately until the problem can be resolved.

Feature	Description of Potential Effects	Mitigation Measures
Eramosa River	Work on river banks can change the hydrology of the river.	• Further investigations should be undertaken to ensure the proposed alternatives will not impact potential erosion hazards that may be present due to the presence of riverine slopes and / or the meander belt of the watercourse. The requirement for engineering assessments such as geotechnical or fluvial geomorphology should be confirmed with GRCA at the detailed design stage. • The geometry and alignment of structures should be reviewed during the detailed design stage. • All stormwater management and bridge sizing-related components of the projected shall be designed with consideration for increased precipitation due to climate change. • Where erosion protection, channel regrading / stabilization or earth retaining structures are determined to be required, the use of “softer” means of protection shall be preferred over the use of hard surfaces unless it is unfeasible to do so.
Lighting	Outdoor lighting can affect the patterns of nocturnal wildlife.	• If any new lighting is proposed along portions of Victoria Road and Stone Road, where it currently does not exist, it should be directed downward and away from natural areas.
Adjacent Lands	Soil Compaction.	• Heavy equipment and material stockpiles will be limited to marked construction areas. • Temporary construction staging areas and construction roads which have been compacted will be rehabilitated upon completion of construction.

9.0 Summary

Significant natural heritage features present within the study area include Locally Significant Wetlands, Provincially Significant Wetlands, Significant Woodlands, Significant Wildlife Habitat, candidate and confirmed SAR habitat, and fish habitat. Two bird species, formerly protected under ESA are known to occur within the study area: Eastern Meadowlark and Bank Swallow. A SAR tree species, Black Ash, is known to exist in the area. SAR bats may also be supported within the study area.

Future commitments that will be completed in 2026 will include:

- A bat maternity tree leaf-off inventory (once preferred alignment has been established)
- Wetland and woodlands delineation with agency staff
- A tree inventory (once the preferred alternative has been established)

The following must be completed during the detailed design and approvals process:

- Tree Protection Plan based on tree inventory
- Submission of a *Request for Review* to the DFO for any proposed works in or near the Eramosa River
- Development of a Landscape / Restoration Plan
- A review for any opportunities to improve wildlife crossings along Stone Road and Victoria Road
- Development of a Wetland Compensation Plan, as required
- Permitting and/or registration, as required under the SCA and SARA

The information provided herein will be used to guide the development and design of the project with the goal to minimize impacts to natural features and achieve an overall net benefit to local ecology.

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Appendix A

Natural Heritage Records Review

Natural Heritage Information Centre Data for Squares 17NJ6222, 17NJ6322, 17NJ6422, 17NJ6522, 17NJ6221, 17NJ6321, 17NJ6421, and 17NJ6521

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT
967356	SPECIES	Hoary Long-horned Bee	Peponapis pruinosa	S2S3			17NJ6222
967356	SPECIES	American Burying Beetle	Nicrophorus americanus	SH	EXP	EXP	17NJ6222
967356	SPECIES	Black Ash	Fraxinus nigra	S4	END	THR	17NJ6222
967356	SPECIES	Midland Painted Turtle	Chrysemys picta marginata	S4		SC	17NJ6222
967356	SPECIES	Eastern Meadowlark	Sturnella magna	S4B,S3N		THR	17NJ6222
967356	SPECIES	Bobolink	Dolichonyx oryzivorus	S4B		SC	17NJ6222
967356	SPECIES	Wood Thrush	Hylocichla mustelina	S4B		THR	17NJ6222
967356	SPECIES	Eastern Wood-pewee	Contopus virens	S4B		SC	17NJ6222
967356	SPECIES	Grasshopper Sparrow	Ammodramus savannarum	S4B		SC	17NJ6222
967356	SPECIES	Eastern Milksnake	Lampropeltis triangulum	S4	NAR	SC	17NJ6222
967356	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	17NJ6222
967355	SPECIES	Upland Sandpiper	Bartramia longicauda	S2B			17NJ6221
967355	SPECIES	American Coot	Fulica americana	S3B,S4N	NAR	NAR	17NJ6221
967355	SPECIES	Hoary Long-horned Bee	Peponapis pruinosa	S2S3			17NJ6221
967355	SPECIES	American Burying Beetle	Nicrophorus americanus	SH	EXP	EXP	17NJ6221
967355	SPECIES	Speckled Giant Lacewing	Polystoechotes punctata	SH			17NJ6221
967355	SPECIES	Painted Skimmer	Libellula semifasciata	S3			17NJ6221
967355	SPECIES	Bristling Shadow Lichen	Phaeophyscia hirsuta	S2S3			17NJ6221
967355	SPECIES	Yellow-banded Bumble Bee	Bombus terricola	S3S5	SC	SC	17NJ6221
967355	SPECIES	Black Ash	Fraxinus nigra	S4	END	THR	17NJ6221
967355	SPECIES	Midland Painted Turtle	Chrysemys picta marginata	S4		SC	17NJ6221
967355	SPECIES	Barn Swallow	Hirundo rustica	S4B		SC	17NJ6221
967355	SPECIES	Eastern Meadowlark	Sturnella magna	S4B,S3N	THR	THR	17NJ6221
967355	SPECIES	Bobolink	Dolichonyx oryzivorus	S4B	THR	SC	17NJ6221
967355	SPECIES	Wood Thrush	Hylocichla mustelina	S4B	SC	THR	17NJ6221
967355	SPECIES	Eastern Wood-pewee	Contopus virens	S4B	SC	SC	17NJ6221
967355	SPECIES	Western Chorus Frog - Great Lakes - St. Lawrence - Canadian Shield population	Pseudacris maculata pop. 1	S4	NAR	THR	17NJ6221
967355	SPECIES	Grasshopper Sparrow	Ammodramus savannarum	S4B	SC	SC	17NJ6221
967355	SPECIES	Eastern Milksnake	Lampropeltis triangulum	S4	NAR	SC	17NJ6221
967355	SPECIES	Least Bittern	Botaurus exilis	S4B	THR	THR	17NJ6221
967355	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	17NJ6221

Natural Heritage Information Centre Data for Squares 17NJ6222, 17NJ6322, 17NJ6422, 17NJ6522, 17NJ6221, 17NJ6321, 17NJ6421, and 17NJ6521

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT
967366	SPECIES	American Burying Beetle	Nicrophorus americanus	SH	EXP	EXP	17NJ6322
967366	SPECIES	Painted Skimmer	Libellula semifasciata	S3			17NJ6322
967366	SPECIES	Black Ash	Fraxinus nigra	S4	END	THR	17NJ6322
967366	SPECIES	Midland Painted Turtle	Chrysemys picta marginata	S4		SC	17NJ6322
967366	SPECIES	Barn Swallow	Hirundo rustica	S4B	SC	SC	17NJ6322
967366	SPECIES	Eastern Meadowlark	Sturnella magna	S4B,S3N	THR	THR	17NJ6322
967366	SPECIES	Bobolink	Dolichonyx oryzivorus	S4B	THR	SC	17NJ6322
967366	SPECIES	Wood Thrush	Hylocichla mustelina	S4B	SC	THR	17NJ6322
967366	SPECIES	Eastern Wood-pewee	Contopus virens	S4B	SC	SC	17NJ6322
967366	SPECIES	Grasshopper Sparrow	Ammodramus savannarum	S4B	SC	SC	17NJ6322
967366	SPECIES	Eastern Milksnake	Lampropeltis triangulum	S4	NAR	SC	17NJ6322
967366	SPECIES	Northern Map Turtle	Graptemys geographica	S3	SC	SC	17NJ6322
967366	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	17NJ6322
967365	SPECIES	Upland Sandpiper	Bartramia longicauda	S2B			17NJ6321
967365	SPECIES		Ancistrocerus campestris	S1			17NJ6321
967365	SPECIES	American Burying Beetle	Nicrophorus americanus	SH	EXP	EXP	17NJ6321
967365	SPECIES	Painted Skimmer	Libellula semifasciata	S3			17NJ6321
967365	SPECIES	American Bumble Bee	Bombus pensylvanicus	S3S4	SC	SC	17NJ6321
967365	SPECIES	Bristling Shadow Lichen	Phaeophyscia hirsuta	S2S3			17NJ6321
967365	SPECIES	Tawny Emperor	Asterocampa clyton	S3			17NJ6321
967365	SPECIES	Yellow-banded Bumble Bee	Bombus terricola	S3S5	SC	SC	17NJ6321
967365	SPECIES	Swamp Darner	Epiaeschna heros	S3S4			17NJ6321
967365	SPECIES	Black Ash	Fraxinus nigra	S4	END	THR	17NJ6321
967365	SPECIES	Midland Painted Turtle	Chrysemys picta marginata	S4		SC	17NJ6321
967365	SPECIES	Barn Swallow	Hirundo rustica	S4B	SC	SC	17NJ6321
967365	SPECIES	Red-headed Woodpecker	Melanerpes erythrocephalus	S3	END	END	17NJ6321
967365	SPECIES	Eastern Meadowlark	Sturnella magna	S4B,S3N	THR	THR	17NJ6321
967365	SPECIES	Bobolink	Dolichonyx oryzivorus	S4B	THR	SC	17NJ6321
967365	SPECIES	Wood Thrush	Hylocichla mustelina	S4B	SC	THR	17NJ6321
967365	SPECIES	Eastern Wood-pewee	Contopus virens	S4B	SC	SC	17NJ6321
967365	SPECIES	Western Chorus Frog - Great Lakes - St. Lawrence - Canadian Shield population	Pseudacris maculata pop. 1	S4	NAR	THR	17NJ6321
967365	SPECIES	Grasshopper Sparrow	Ammodramus savannarum	S4B	SC	SC	17NJ6321

Natural Heritage Information Centre Data for Squares 17NJ6222, 17NJ6322, 17NJ6422, 17NJ6522, 17NJ6221, 17NJ6321, 17NJ6421, and 17NJ6521

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT
967365	SPECIES	Eastern Milksnake	Lampropeltis triangulum	S4	NAR	SC	17NJ6321
967365	SPECIES	Common Hop-tree	Ptelea trifoliata	S3	SC	SC	17NJ6321
967365	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	17NJ6321
967376	SPECIES	Blushing Scale Lichen	Psora decipiens	S3			17NJ6422
967376	SPECIES	American Burying Beetle	Nicrophorus americanus	SH	EXP	EXP	17NJ6422
967376	SPECIES	Midland Painted Turtle	Chrysemys picta marginata	S4		SC	17NJ6422
967376	SPECIES	Barn Swallow	Hirundo rustica	S4B	SC	SC	17NJ6422
967376	SPECIES	Eastern Meadowlark	Sturnella magna	S4B,S3N	THR	THR	17NJ6422
967376	SPECIES	Bobolink	Dolichonyx oryzivorus	S4B	THR	SC	17NJ6422
967376	SPECIES	Wood Thrush	Hylocichla mustelina	S4B	SC	THR	17NJ6422
967376	SPECIES	Eastern Wood-pewee	Contopus virens	S4B	SC	SC	17NJ6422
967376	SPECIES	Grasshopper Sparrow	Ammodramus savannarum	S4B	SC	SC	17NJ6422
967376	SPECIES	Eastern Milksnake	Lampropeltis triangulum	S4	NAR	SC	17NJ6422
967376	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	17NJ6422
967375	SPECIES	Upland Sandpiper	Bartramia longicauda	S2B			17NJ6421
967375	SPECIES		Vespula vidua	S3			17NJ6421
967375	SPECIES	American Burying Beetle	Nicrophorus americanus	SH	EXP	EXP	17NJ6421
967375	SPECIES	Painted Skimmer	Libellula semifasciata	S3			17NJ6421
967375	SPECIES	Black Ash	Fraxinus nigra	S4	END	THR	17NJ6421
967375	SPECIES	Midland Painted Turtle	Chrysemys picta marginata	S4		SC	17NJ6421
967375	SPECIES	Barn Swallow	Hirundo rustica	S4B	SC	SC	17NJ6421
967375	SPECIES	Eastern Meadowlark	Sturnella magna	S4B,S3N	THR	THR	17NJ6421
967375	SPECIES	Bobolink	Dolichonyx oryzivorus	S4B	THR	SC	17NJ6421
967375	SPECIES	Wood Thrush	Hylocichla mustelina	S4B	SC	THR	17NJ6421
967375	SPECIES	Eastern Wood-pewee	Contopus virens	S4B	SC	SC	17NJ6421
967375	SPECIES	Butternut	Juglans cinerea	S2?	END	END	17NJ6421
967375	SPECIES	Western Chorus Frog - Great Lakes - St. Lawrence - Canadian Shield population	Pseudacris maculata pop. 1	S4	NAR	THR	17NJ6421
967375	SPECIES	Grasshopper Sparrow	Ammodramus savannarum	S4B	SC	SC	17NJ6421
967375	SPECIES	Eastern Milksnake	Lampropeltis triangulum	S4	NAR	SC	17NJ6421
967375	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	17NJ6421
967386	SPECIES	American Burying Beetle	Nicrophorus americanus	SH	EXP	EXP	17NJ6522
967386	SPECIES	Midland Painted Turtle	Chrysemys picta marginata	S4		SC	17NJ6522
967386	SPECIES	Barn Swallow	Hirundo rustica	S4B	SC	SC	17NJ6522

Natural Heritage Information Centre Data for Squares 17NJ6222, 17NJ6322, 17NJ6422, 17NJ6522, 17NJ6221, 17NJ6321, 17NJ6421, and 17NJ6521

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT
967386	SPECIES	Eastern Meadowlark	<i>Sturnella magna</i>	S4B,S3N	THR	THR	17NJ6522
967386	SPECIES	Bobolink	<i>Dolichonyx oryzivorus</i>	S4B	THR	SC	17NJ6522
967386	SPECIES	Wood Thrush	<i>Hylocichla mustelina</i>	S4B	SC	THR	17NJ6522
967386	SPECIES	Eastern Wood-pewee	<i>Contopus virens</i>	S4B	SC	SC	17NJ6522
967386	SPECIES	Western Chorus Frog - Great Lakes - St. Lawrence - Canadian Shield population	<i>Pseudacris maculata</i> pop. 1	S4	NAR	THR	17NJ6522
967386	SPECIES	Eastern Milksnake	<i>Lampropeltis triangulum</i>	S4	NAR	SC	17NJ6522
967386	SPECIES	Snapping Turtle	<i>Chelydra serpentina</i>	S4	SC	SC	17NJ6522
967385	SPECIES	American Burying Beetle	<i>Nicrophorus americanus</i>	SH	EXP	EXP	17NJ6521
967385	SPECIES	American Bumble Bee	<i>Bombus pennsylvanicus</i>	S3S4	SC	SC	17NJ6521
967385	SPECIES	Midland Painted Turtle	<i>Chrysemys picta marginata</i>	S4		SC	17NJ6521
967385	SPECIES	Barn Swallow	<i>Hirundo rustica</i>	S4B	SC	SC	17NJ6521
967385	SPECIES	Eastern Meadowlark	<i>Sturnella magna</i>	S4B,S3N	THR	THR	17NJ6521
967385	SPECIES	Bobolink	<i>Dolichonyx oryzivorus</i>	S4B	THR	SC	17NJ6521
967385	SPECIES	Wood Thrush	<i>Hylocichla mustelina</i>	S4B	SC	THR	17NJ6521
967385	SPECIES	Eastern Wood-pewee	<i>Contopus virens</i>	S4B	SC	SC	17NJ6521
967385	SPECIES	Eastern Ribbonsnake	<i>Thamnophis saurita</i>	S4	SC	SC	17NJ6521
967385	SPECIES	Grasshopper Sparrow	<i>Ammodramus savannarum</i>	S4B	SC	SC	17NJ6521
967385	SPECIES	Eastern Milksnake	<i>Lampropeltis triangulum</i>	S4	NAR	SC	17NJ6521
967385	SPECIES	Snapping Turtle	<i>Chelydra serpentina</i>	S4	SC	SC	17NJ6521

Ontario Breeding Bird Atlas Data for Square 17NJ62					
SPECIES	Breeding Evidence			Percentage of Squares in region where species were reproted	S-Rank
	Highest Breeding Evidence in Previous Atlas	Highest Breeding Evidence over the last 5 years	Highest Category		
Canada Goose	AE	NE	CONF	100	S5
Mute Swan				12	SNA
Trumpeter Swan		P	PROB	41	S4
Wood Duck	FY	FY	CONF	90	S5B,S3N
Blue-winged Teal ‡		H	POSS	19	S3B,S4M
Northern Shoveler ‡				3	S4B,S4N,S5M
Gadwall ‡				6	S4B,S4N,S5M
American Wigeon ‡				6	S4B,S4N,S5M
Mallard	FY	NE	CONF	100	S5
American Black Duck		P	PROB	9	S4
Northern Pintail ‡				3	S5B,S4N
Green-winged Teal				12	S4B,S4N,S5M
Ring-necked Duck ‡				3	S5B,S4N
Hooded Merganser		FY	CONF	61	S5
Common Merganser ‡	FY	FY	CONF	12	S5
Wild Turkey	H	NE	CONF	100	S5
Ruffed Grouse	T	NE	CONF	93	S5
Ring-necked Pheasant ‡				3	SNA
Rock Pigeon (Feral Pigeon)	NY	AE	CONF	100	SNA
Mourning Dove	FY	NY	CONF	100	S5
Yellow-billed Cuckoo		T	PROB	58	S4B
Black-billed Cuckoo	H	CF	CONF	83	S4S5B
Common Nighthawk ‡		H	POSS	9	S4B
Eastern Whip-poor-will ‡				6	S4B
Chimney Swift §	T	V	PROB	51	S3B
Ruby-throated Hummingbird	D	AE	CONF	83	S5B
Virginia Rail	A	FY	CONF	51	S4S5B
Sora	T	T	PROB	45	S5B
Common Gallinule ‡		CF	CONF	25	S3B
American Coot ‡				12	S3B,S4N
Sandhill Crane ‡				48	S5B,S3N
Killdeer §	FY	FY	CONF	100	S4B
Upland Sandpiper †				9	S2B
American Woodcock	D	D	PROB	87	S4B
Wilson's Snipe ‡	S	T	PROB	45	S5B
Spotted Sandpiper	FY	FY	CONF	90	S5B
Ring-billed Gull § ‡		V	PROB	22	S5
American Herring Gull ‡				6	S4B,S5N
Black Tern † §				3	S3B,S4M
Pied-billed Grebe	CF	H	CONF	38	S4B,S2N
Common Loon ‡	H		POSS	12	S5
Double-crested Cormorant § ‡				12	S5B,S4N
American Bittern		H	POSS	35	S5B

Ontario Breeding Bird Atlas Data for Square 17NJ62					
SPECIES	Breeding Evidence			Percentage of Squares in region where species were reproted	S-Rank
	Highest Breeding Evidence in Previous Atlas	Highest Breeding Evidence over the last 5 years	Highest Category		
Least Bittern †	S	AE	CONF	25	S4B
Black-crowned Night Heron † §				6	S3B,S2N,S4M
Green Heron §	FY	NY	CONF	96	S4B
Great Egret † §				9	S2B,S3M
Great Blue Heron §	V	NY	CONF	90	S4
Turkey Vulture	H	H	POSS	100	S5B,S3N
Osprey	NY	NY	CONF	58	S5B
Sharp-shinned Hawk ‡	A	H	PROB	41	S5
Cooper's Hawk	CF	NY	CONF	70	S4
American Goshawk ‡				9	S4
Northern Harrier	H	H	POSS	61	S5B,S4N
Bald Eagle ‡		NY	CONF	48	S4
Broad-winged Hawk	H	S	POSS	45	S5B
Red-shouldered Hawk ‡				12	S4B,S2N
Red-tailed Hawk	AE	AE	CONF	100	S5
Eastern Screech-Owl	FY	FY	CONF	90	S4
Great Horned Owl	NY	NY	CONF	74	S4
Barred Owl ‡		FY	CONF	6	S5
Long-eared Owl ‡	FY		CONF	3	S4
Northern Saw-whet Owl ‡				3	S5
Belted Kingfisher	CF	CF	CONF	100	S5B,S4N
<u>Yellow-bellied Sapsucker</u> ‡				61	S5B,S3N
Red-headed Woodpecker †	H		POSS	29	S3
Red-bellied Woodpecker		AE	CONF	90	S5
Downy Woodpecker	FY	CF	CONF	100	S5
Hairy Woodpecker	FY	CF	CONF	100	S5
Pileated Woodpecker	N	FY	CONF	90	S5
Northern Flicker	NY	AE	CONF	100	S5
American Kestrel §	H	P	PROB	83	S4
Merlin		CF	CONF	70	S5
Peregrine Falcon ‡				9	S4
Olive-sided Flycatcher ‡				3	S4B
Eastern Wood-Pewee §	T	FY	CONF	100	S4B
Alder Flycatcher	T	T	PROB	96	S5B
Willow Flycatcher	S	T	PROB	96	S4B
Least Flycatcher	T	A	PROB	80	S5B
Eastern Phoebe	NE	NY	CONF	100	S5B
Great Crested Flycatcher	CF	AE	CONF	100	S5B
Eastern Kingbird	FY	NY	CONF	100	S4B,S2N
Yellow-throated Vireo ‡		T	PROB	16	S4B
Blue-headed Vireo		S	POSS	35	S5B
Warbling Vireo	FY	CF	CONF	100	S5B

Ontario Breeding Bird Atlas Data for Square 17NJ62

SPECIES	Breeding Evidence			Percentage of Squares in region where species were reproted	S-Rank
	Highest Breeding Evidence in Previous Atlas	Highest Breeding Evidence over the last 5 years	Highest Category		
Red-eyed Vireo	CF	NY	CONF	100	S5B
Blue Jay	FY	NY	CONF	100	S5
American Crow	CF	CF	CONF	100	S5
Common Raven	H	NY	CONF	100	S5
Black-capped Chickadee	NE	CF	CONT	100	S5
Horned Lark §	T	S	PROB	93	S4
Bank Swallow §	NY	H	CONF	77	S4B
Tree Swallow	NY	NY	CONF	100	S4S5B
Purple Martin ‡		H	POSS	29	S3B
Northern Rough-winged Swallow	NY	FY	CONF	93	S4B
Barn Swallow §	FY	NY	CONF	100	S4B
Cliff Swallow §	NE	AE	CONF	87	S4S5B
Ruby-crowned Kinglet ‡				3	S5B,S3N
Golden-crowned Kinglet		T	PROB	54	S5
White-breasted Nuthatch	AE	AE	CONF	96	S5
Red-breasted Nuthatch	FY	CF	CONF	96	S5
Brown Creeper	CF	NY	CONF	80	S5
Blue-gray Gnatcatcher				25	S4B
Northern House Wren	AE	NY	CONF	100	S5B
Winter Wren		D	PROB	87	S5B,S4N
Sedge Wren ‡				25	S4B
Marsh Wren	S	D	PROB	41	S4B,S3N
Carolina Wren ‡	NY	T	CONF	29	S4
European Starling	NY	NY	CONF	100	SNA
Gray Catbird	A	CF	CONF	100	S5B,S3N
Brown Thrasher	CF	CF	CONF	100	S4B
Northern Mockingbird ‡				9	S4
Eastern Bluebird	NY	NY	CONF	96	S5B,S4N
Veery	T	T	PROB	87	S5B
Hermit Thrush ‡				12	S5B,S4N
Wood Thrush §	T	CF	CONF	93	S4B
American Robin	NY	NY	CONF	100	S5
Cedar Waxwing	NB	CF	CONF	100	S5
House Sparrow	T	AE	CONF	100	SNA
House Finch	FY	T	CONF	80	SNA
Purple Finch ‡	FY	T	CONF	93	S5
Red Crossbill ‡				3	S5
White-winged Crossbill ‡				6	S5
Pine Siskin ‡	T	A	PROB	48	S5
American Goldfinch	FY	NE	CONF	100	S5
Grasshopper Sparrow §	P	CF	CONF	38	S4B
Chipping Sparrow	FY	CF	CONF	100	S5B,S3N

Ontario Breeding Bird Atlas Data for Square 17NJ62					
SPECIES	Breeding Evidence			Percentage of Squares in region where species were reproted	S-Rank
	Highest Breeding Evidence in Previous Atlas	Highest Breeding Evidence over the last 5 years	Highest Category		
Clay-colored Sparrow ‡	CF	T	CONF	45	S4B
Field Sparrow §	FY	CF	CONF	70	S4B,S3N
White-throated Sparrow	T	T	PROB	87	S5
Vesper Sparrow		S	POSS	87	S4B
Savannah Sparrow	NE	CF	CONF	100	S5B,S3N
Song Sparrow	NY	CF	CONF	100	S5
Lincoln's Sparrow ‡				6	S5B
Swamp Sparrow	CF	T	CONF	100	S5B,S4N
Eastern Towhee §	NB	T	CONF	64	S4B,S3N
Bobolink §	T	CF	CONF	100	S4B
Eastern Meadowlark §	T	CF	CONF	100	S4B,S3N
Orchard Oriole		CF	CONF	51	S4B
Baltimore Oriole	FY	NY	CONF	100	S4B
Red-winged Blackbird	NY	NY	CONF	100	S5
Brown-headed Cowbird	NY	FY	CONF	100	S5
Common Grackle	CF	NY	CONF	100	S5
Ovenbird	CF	T	CONF	93	S5B
Northern Waterthrush	CF	CF	CONF	83	S5B
Golden-winged Warbler †		S	POSS	3	S3B
Blue-winged Warbler	S	FY	CONF	19	S4B
Black-and-white Warbler	NY	A	CONF	74	S5B
Nashville Warbler	T	S	PROB	83	S5B
Mourning Warbler	T	T	PROB	93	S5B
Common Yellowthroat	AE	CF	PROB	100	S5B,S3N
American Redstart	T	CF	PROB	100	S5B
Northern Parula ‡				3	S5B
Magnolia Warbler	S	S	POSS	29	S5B
Blackburnian Warbler ‡	S	H	POSS	48	S5B
Yellow Warbler	CF	NE	CONF	100	S5B
Chestnut-sided Warbler	S	S	POSS	87	S5B
Black-throated Blue Warbler ‡		S	POSS	16	S5B
Pine Warbler	T	FY	CONF	77	S5B,S3N
Yellow-rumped Warbler	T	FY	CONF	74	S5B,S4N
Black-throated Green Warbler	T	T	PROB	77	S5B
Canada Warbler ‡				32	S5B
Scarlet Tanager	S	NB	CONF	54	S5B
Northern Cardinal	FY	AE	CONF	100	S5
Rose-breasted Grosbeak	T	CF	CONF	100	S5B
Indigo Bunting	T	CF	CONF	100	S5B

Ontario Reptile and Amphibian Atlas Data for Square 17NJ62						
Common Name	# of Records	Earliest Year	Latest Year	SRANK	COSSARO	COSEWIC
Blanding's Turtle	5	1976	2016	S3	THR	END
Midland Painted Turtle	45	1981	2018	S4	NAR	SC
Northern Map Turtle	4	1924	1925	S3	SC	SC
Red-eared Slider	4	2015	2018	SNA		
Snapping Turtle	132	1976	2019	S4	SC	SC
Dekay's Brownsnake	48	1976	2018	S5	NAR	
Eastern Gartersnake	107	1934	2018	S5		
Eastern Milksnake	26	1964	2018	S4	NAR	SC
Northern Ribbonsnake	2	1978	1985	S4	SC	SC
Northern Watersnake	7	1979	2008	S5		
Red-bellied Snake	27	1975	2018	S5		
Smooth Greensnake	14	1978	2019	S4		
American Bullfrog	11	1968	2000	S4		
Gray Treefrog	58	1975	2018	S5		
Green Frog	123	1965	2019	S5		
Mink Frog	1	1978	1978	S5		
Northern Leopard Frog	138	1965	2018	S5		
Pickereel Frog	15	1960	2014	S4		
Spring Peeper	110	1975	2019	S5		
Western Chorus Frog	19	1979	2017	S4	NAR	THR
Wood Frog	97	1965	2019	S5		
American Toad	177	1935	2019	S5		
Blue-spotted Salamander	3	1985	2016	S4		
Eastern Red-backed Salamander	73	1970	2018	S5		
Mudpuppy	4	1988	2013	S4	SC	NAR
Red-spotted Newt	28	1905	2016	S5		
Spotted Salamander	1	2016	2016	S4		



BURNSIDE

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Appendix B

Species at Risk Screening Table

Background Review of Potential Species at Risk and Species of Conservation Concern on the Road Right-of-Way (ROW) and/or Victoria Road Bridges?

COMMON NAME	SCIENTIFIC NAME	Provincial S-RANK ¹	Provincial PSO Status ²	COSEWIC ³	Federal SARA Status ³	Federal SARA Schedule ⁴	Habitat Description ⁵	Habitat Present on the Subject Lands and/or Adjacent Lands?	
								Road Right-of-Way (ROW)	Victoria Road Bridges
American Bumble Bee (Source: NHIC)	<i>Bombus pensylvanicus</i>	S3S4	No Status	SC	SC	1	Found in a range of open habitats, including farmlands, meadows, and grasslands. The species usually nests aboveground in dense grass but also uses abandoned rodent burrows and bird nests in trees. Queens overwinter underground or in decomposing organic matter. ⁹ Southern Ontario and Quebec mark the northern edge of the American Bumble Bee's range, covering about 2.3% of its global distribution. Further south, it extends across the U.S., and into Central America. ⁵	Moderate potential. Suitable habitat present throughout corridor. It should be noted that this species was observed by NRSI within the GID Lands, well away from the ROW. Species not observed.	Low potential along the open riparian areas adjacent to the structures. Not observed.
American Burying Beetle (Source: NHIC)	<i>Nicrophorus americanus</i>	SH	EXP	EXP	EXP	1	Prefers undisturbed deciduous forest but have been found in a variety of habitats. The beetle has three requirements: soil to dig a chamber for eggs and larvae, carcasses for food, and few competitors. Species has been extirpated from Ontario since 1972. ⁵	No potential. While suitable habitat is present, the species has been extirpated from Ontario.	Not observed.
Hoary Long-horned Bee (Source: NHIC)	<i>Peponapis pruinosa</i>	S2S3	No Status	No Status	No Status	No Schedule	Found in cliffs, flowering meadows, marshes, quarries, and woodland clearings. Requires bare or sparsely vegetated ground for nesting and a high abundance of legumes, such as vetch, clover, and bird's-foot trefoils.	Moderate potential. Suitable habitat present throughout corridor. Species not observed.	Not observed.
Monarch Butterfly (Source: Burnside)	<i>Danaus plexippus</i>	S2N,S4B	SC	END	END	1	Throughout their life cycle, Monarchs use three different types of habitat. Only the caterpillars (larvae) feed on milkweed plants and are confined to meadows and open areas where milkweed grows. Adult butterflies can be found in more diverse habitats where they feed on nectar from a variety of wildflowers. Monarchs spend the winter in Oyamel Fir forests found in central Mexico. The largest threat to Ontario Monarchs is habitat loss and fragmentation at overwintering sites in central Mexico where forests are being logged and converted into agricultural fields and pastures. Widespread pesticide and herbicide use throughout the Monarch's range may also limit recovery. ⁵	High potential. Milkweed was observed in multiple locations across the Study Area during field surveys in 2025, and open fields are present. Species not observed.	Low potential along the open riparian areas adjacent to the structures where Common Milkweed was observed in low densities. Not observed.

COMMON NAME	SCIENTIFIC NAME	Provincial S-RANK ¹	Provincial PSO Status ²	COSEWIC ³	Federal SARA Status ³	Federal SARA Schedule ⁴	Habitat Description ⁵	Habitat Present on the Subject Lands and/or Adjacent Lands?	
								Road Right-of-Way (ROW)	Victoria Road Bridges
Painted Skimmer (Source: NHIC)	<i>Libellula semifasciata</i>	S3	No Status	No Status	No Status	No Schedule	Inhabits shallow, vegetated ponds, pools, and slow-moving streams. More common in the USA than in Canada.	Unlikely to occur. The reaches of the Eramosa River present within the Study Area are not slow-moving. Species not observed.	Not observed.
Potter Wasp Sp. (Source: NHIC)	<i>Ancistrocerus campestris</i>	S1	No Status	No Status	No Status	No Schedule	Nests in borings in wood, sumac stems and old mud dauber nests. More common in the USA than in Canada.	Low potential. Although this species is a habitat generalist, being supported in a wide variety of treed habitats, they are extremely rare in Ontario. It is understood that the sole observation for this species based on single iNaturalist record is from 2021 within the University of Guelph Arboretum, beyond the Study Area. No species observed.	Not observed.
Speckled Giant Lacewing (Source: NHIC)	<i>Polystoechotes punctata</i>	SH	No Status	No Status	No Status	No Schedule	Inhabits open areas, damp ROWs, bogs, swamps, flooded areas, and other freshwater habitats. Attracted to artificial lights in remote areas. May persist in Northern Ontario, however, has not been observed since the 1950's.	No potential. While suitable habitat is present, the species has been extirpated from southern Ontario.	Not observed.
Swamp Darner (Source: NHIC)	<i>Epiaeschna heros</i>	S3S4	No Status	No Status	No Status	No Schedule	Inhabits lakes, swamps, beaver ponds, and slow-moving streams. Often found in wooded wetlands. Rare in Canada, because even the most southern areas are at the edge of there northern range.	Species has been recorded by NRSI in association with the floodplain of the Eramosa River beyond the Study Area. Species has potential to occur in association with the Eramosa River and swamps in the Study Area.	Not observed.
Tawny Emperor (Source: NHIC)	<i>Asterocampa clyton</i>	S3	No Status	No Status	No Status	No Schedule	Predominantly a woodland butterfly. Only occurs in southwestern Ontario and is only regularly expected at Point Pelee and Pelee Island.	No potential. The Study Area is not in close proximity to Point Pelee and Pelee Island.	Not observed.

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								Road Right-of-Way (ROW)	Victoria Road Bridges
Yellowjacket Wasp (Source: NHIC)	<i>Vespula vidua</i>	S3	No Status	No Status	No Status	No Schedule	Inhabits a variety of habitats, including grasslands, forests, agricultural areas, and urban environments. Nests are subterranean.	Moderate potential. Suitable habitat present throughout corridor. Species not observed.	Not observed.
Yellow-banded Bumble Bee (Source: NHIC)	<i>Bombus terricola</i>	S3S5	SC	SC	SC	1	Found in mixed woodlands, particularly for nesting and overwintering, as well as a variety of open habitat such as native grasslands, farmlands and urban areas. Nest sites are often underground in abandoned rodent burrows or decomposing logs. ⁵	Moderate potential. Suitable habitat present throughout corridor. Species not observed.	Low potential along the open riparian areas adjacent to the structures. Not observed.
Birds									
American Coot (Source: NHIC)	<i>Fulica americana</i>	S3B,S4N	No Status	NAR	No Status	No Schedule	Inhabits ponds, marshes, reservoirs, lake edges, and roadside ditches.	Moderate potential. Suitable habitat present in wetland areas, roadside ditches, and habitats associated with the Eramosa River. Species not observed.	Confirmed absent.
Bank Swallow (Source: OBBA)	<i>Riparia riparia</i>	S4B	No Status	THR	THR	1	Prefers open habitats including, farmland, lake/river shorelines, grasslands, and wetlands. Nests in exposed earthen banks along shorelines and in artificial sites such as gravel pits. ⁶	High potential. Suitable habitat is present within the Study Area along the Eramosa River shoreline, wetlands, and open habitats. Bank Swallows were observed within the Study Area at BBS-012. Probable evidence of breeding was observed on privately owned lands beyond the ROW associated with a privately owned business.	Confirmed absent.
Barn Swallow (Source: NHIC, OBBA)	<i>Hirundo rustica</i>	S4B	No Status	SC	THR	1	Prefers farmland, lake/river shorelines, wooded clearings, urban populated areas, rocky cliffs, and wetlands. Nests inside or on exterior of buildings; under bridges and in road culverts; on rock faces, and in caves, etc. ⁷	High potential. Suitable habitat is present throughout the Study Area along. The Eramosa River shoreline and associated bridges could act as nesting habitat.	Confirmed to be breeding at the York Road bridge crossing. Confirmed absent from the Victoria Road bridge and McQuillan’s Bridge.

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								Road Right-of-Way (ROW)	Victoria Road Bridges
								Site investigations recorded individuals vocalizing at BBS-001, BBS-003, BBS-009, BBS-012, and BBS-013. Confirmed to be breeding at the York Road bridge crossing. May be supported within the constructed communities that were not subject to Burnside’s review.	
Bobolink (Source: NHIC, OBBA)	<i>Dolichonyx oryzivorus</i>	S4B	No Status	SC	THR	1	Generally, prefers open grasslands and hay fields for nesting, typically featuring relatively tall vegetation. Sometimes uses large fields of winter wheat and rye in southwestern Ontario. Sensitive to vegetation structure and composition. Positively associated with high grass-to-forb ratios; moderate litter depth; tolerate wetter portions of fields compared to Eastern Meadowlark (EAME) and more likely to nest closer to field centres rather than field margins. Lower tolerance to presence of patches of bare ground. Appear to prefer larger fields than EAME. ⁸	Low potential. All fields in the Study Area are either sodded or used for agriculture. Confirmed absent.	Confirmed absent.
Canada Warbler (Source: OBBA)	<i>Cardellina canadensis</i>	S5B	No Status	SC	THR	1	Generally, prefers wet coniferous, deciduous and mixed forest types, with a dense shrub layer. Nests on the ground, on logs or hummocks, and uses dense shrub layer to conceal the nest. ⁶	Low potential. Suitable habitat may be supported within forested areas in the Study Area. Species not observed.	Confirmed absent.
Chimney Swift (Source: OBBA)	<i>Chaetura pelagica</i>	S3B	No Status	THR	THR	1	Historically nested in large hollow trees, other tree cavities and cracks in cliffs. Currently, most are found in developed areas in large, uncapped chimneys. Proximity to lakes is also a preferred habitat feature as they will forage for flying insects close to water. ⁶	Low potential. Suitable nesting habitat may be present in residential areas south of Victora Rd South. Site investigations recorded individuals vocalizing at BBS-001 and BBS-003, however no breeding evidence was	Confirmed absent.

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								Road Right-of-Way (ROW)	Victoria Road Bridges
								observed. Breeding habitat is not supported within the ROW. May be supported within the constructed communities that were not subject to Burnside’s review.	
Common Nighthawk (Source: OBBA)	<i>Chordeiles minor</i>	S4B	No Status	SC	SC	1	Nests in open habitats, in forests and in urban areas. It prefers rock outcrops, alvars, sand barrens, bogs, fens, and in forests, openings created by clearcuts and burns. In southern Ontario, grasslands, agricultural fields, gravel pits, prairies, and alvars and at airports. In cities, it nests mostly on flat, graveled roofs but occasionally on railways and footpaths. ⁶	Candidate habitat present within the GID lands. Confirmed absent by NRSI.	Not observed. Habitat is not supported in the vicinity of the Victoria Road bridges.
Eastern Meadowlark (Source: NHIC, OBBA)	<i>Sturnella magna</i>	S4B, S3N	No Status	THR	THR	1	Generally, prefers grassy pastures, meadows and hay fields. Prefers moderately tall grass with abundant litter cover, a high proportion of grass cover, moderate forb density, low proportions of shrub and woody vegetation cover, and low percent of bare ground. Prefers to nest in drier sites and frequently nests around field margins. ⁸	Low potential. All fields in the Study Area are either sodded or used for agriculture. Site investigations recorded individuals at BBS-003 and BBS-012, with probable breeding evidence at BBS-003 and BBS-012. This is consistent with the findings of NRSI’s 2024 studies. Previous evidence of breeding was observed by NRSI at the OAG communities along Stone Road. These communities were not found to be suitable to support Eastern Meadowlark during Burnside’s field investigations. AECOM also found the ‘possible’ evidence of breeding within the	Confirmed absent.

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								Road Right-of-Way (ROW)	Victoria Road Bridges
								MEGM3 community and THDM2-6 community in 2021 within the City of Guelph Operations Campus.	
Eastern Whip-poor-will (Source: OBBA)	<i>Antrostomus vociferus</i>	S4B	No Status	SC	THR	1	Found in areas with a mix of open and forested areas, such as savannahs, open woodlands or opening in more mature, deciduous, coniferous and mixed forests. It forages in open areas and roosts in forested areas. ⁷	Candidate habitat present within the GID lands. Confirmed absent by NRSI.	Not observed. Habitat is not supported in the vicinity of the Victoria Road bridges.
Eastern Wood-Pewee (Source: NHIC, OBBA)	<i>Contopus virens</i>	S4B	No Status	SC	SC	1	Prefers open space near the nest in the form of forest edges, clearings, roadways, and water. Does not require large areas of woods but occurs less frequently in woodlots surrounded by development than in those without. ⁶	High potential. Suitable habitat is present throughout the study area along wooded edges, clearings, and roadways. Site investigations recorded individuals at BBS-002 and BBS-008, with probable breeding evidence at BBS-008.	Confirmed absent.
Golden-winged Warbler (Source: OBBA)	<i>Vermivora chrysoptera</i>	S3B	No Status	THR	THR	Schedule 1	Generally prefer areas of early successional vegetation, found primarily on field edges, hydro or utility rights-of-way, or recently logged areas. ⁶	High potential. Suitable habitat is present throughout the Study Area along ROWs and fields. Species not observed.	Confirmed absent.
Grasshopper Sparrow (Source: NHIC, OBBA)	<i>Ammodramus savannarum</i>	S4B	No Status	SC	SC	1	Prefers drier, sparsely vegetated grasslands, particularly rough or unimproved pastures with scattered forb and shrub growth, at least 30 ha in size. It will occasionally also use cultivated hayfields and cereal crops. ⁶	Low potential. All fields in the Study Area are either sodded or used for agriculture. Observed by NRSI within the GID lands within the Study Area in several locations including small meadows and row crops. Agricultural fields (soy) should not be considered Significant Habitat.	Confirmed absent.
Least Bittern (Source: NHIC, OBBA)	<i>Ixobrychus exilis</i>	S4B	No Status	SC	THR	1	Most frequently found in marshes of at least 5 ha, although much smaller marshes, including sites such as cattail stands along	No potential. Suitable habitat is absent from the Study Area.	Confirmed absent.

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								Road Right-of-Way (ROW)	Victoria Road Bridges
							creeks and farm ponds partially filled with cattail, may be used occasionally. Breeding sites typically dominated by cattail, but also sometimes bulrush, grasses, horsetail, and willow. Nests usually close to edge of a stand of vegetation or near openings such as muskrat trails, although may be as far as 45 m from open water. ⁶	Confirmed absent.	
Red-headed Woodpecker (Source: NHIC, OBBA)	<i>Melanerpes erythrocephalus</i>	S3	No Status	END	END	1	Prefers open woodland and woodland edges and often found in parks, golf courses and cemeteries because these areas typically have many dead trees which the woodpecker uses for nesting and perching. ⁶	No potential. Suitable habitat is absent from the Study Area. Confirmed absent.	Confirmed absent.
Upland Sandpiper (Source: NHIC)	<i>Bartramia longicauda</i>	S2B	No Status	No Status	No Status	No Schedule	Inhabits natural and man-made grasslands to nest and forage, such as pastures, fields, and airports. Found in Southern Ontario.	Low potential. All fields in the Study Area are either sodded or used for agriculture. Confirmed absent.	Confirmed absent.
Wood Thrush (Source: OBBA)	<i>Hylocichla mustelina</i>	S4B	No Status	THR	THR	1	Inhabits and breeds in woodlands ranging from small (3 ha) and isolated to large and contiguous. The presence of tall trees and a thick understorey are usually prerequisites for site occupancy. ⁶	Moderate potential. Suitable habitat is present in wooded areas throughout the Study Area. Species not observed.	Confirmed absent.
Mammals									
Eastern Red Bat (Source: Burnside)	<i>Lasiurus borealis</i>	S3	END	END	No Status	No Schedule	As habitat generalists, Eastern Red Bat occupy a wide diversity of habitats across their geographic range. Eastern Red Bats typically roost among the foliage of trees and occasionally shrubs. Roost sites that have overhead foliage for cover and open flight space below are selected. Eastern Red Bats use both deciduous and coniferous forests, of any age class. Trees used as maternity tend to be large diameter and tall, reaching or exceeding the height of the surrounding canopy. Individuals and family groups typically use several trees, within variable ranges (from < 1 ha to 90 ha) during the breeding season. Roost switching every other day is common. ⁹	Moderate potential. Suitable habitat present in treed, residential, and commercial habitats. Species not observed.	Not observed.

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								Road Right-of-Way (ROW)	Victoria Road Bridges
Eastern Small-footed Myotis (Source: Burnside)	<i>Myotis leibii</i>	S2S3	END	END	No Status	No Schedule	Overwintering habitat: Cool caves and abandoned mines with low humidity and temperatures and relatively stable microclimates. Cave hibernacula known to be used by Eastern Small-footed Myotis in Ontario are found primarily in limestone, but also in sandstone. Maternal Roosts: In Ontario, summer habitats, including sites of maternity colonies, are very poorly understood. Some reports include anthropogenic buildings (shed/barn, old structures), rocky habitats. However, the extent of the use of summer rock roosts in Ontario has not been determined. ¹¹	No potential. Suitable habitat is absent from the Study Area.	Not observed.
Hoary Bat (Source: Burnside)	<i>Lasiurus cinereus</i>	S3	END	END	No Status	No Schedule	As habitat generalists, Hoary Bat occupy a wide diversity of habitats across their geographic range. Hoary Bats typically roost among the foliage of trees and occasionally shrubs. Roost sites that have overhead foliage for cover and open flight space below are selected. Hoary Bats use both deciduous and coniferous forests, of any age class. Trees used as maternity tend to be large diameter and tall, reaching or exceeding the height of the surrounding canopy. Individuals and family groups typically use several trees during the breeding season. Hoary bats may roots switch as often as every other day or use the same tree for several weeks at a time. Often, roost trees are within close proximity to each other. ⁹	Moderate potential. Suitable habitat present in treed, residential, and commercial habitats. Species not observed.	Not observed.
Little Brown Myotis (Source: Burnside)	<i>Myotis lucifugus</i>	S3	END	END	END	1	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius. Maternal Roosts: Often associated with buildings (attics, barns etc.). Occasionally found in trees (25-44 cm dbh). ¹²	Moderate potential. Suitable habitat present in treed, residential, and commercial habitats. Species not observed.	Not observed.

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								Road Right-of-Way (ROW)	Victoria Road Bridges
Northern Myotis (Source: Burnside)	<i>Myotis septentrionalis</i>	S3	END	END	END	1	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius. Maternal Roosts: Often associated with cavities of large diameter trees (25-44 cm dbh). Occasionally found in structures (attics, barns etc.). ⁹	Moderate potential. Suitable habitat present in treed, residential, and commercial habitats. Species not observed.	Not observed.
Silver-haired Bat (Source: Burnside)	<i>Lasionycteris noctivagans</i>	S3	END	END	No Status	No Schedule	Roosting by Silver-haired Bats occurs primarily under bark and in the cavities of trees, making them reliant on habitats where large, decaying trees are available. Large DBH, taller height compared to nearby trees, and an open canopy are important characteristics. Common roosting sites include heart-rot infections at the site of limb breakages, large sheets of exfoliating bark and old woodpecker cavities. Roost switching often occurs every three days to trees within close proximity (180-280 m). Silver-haired bats occasionally roosting on or in anthropogenic structures, especially during migration. ⁹	Moderate potential. Suitable habitat present in treed, residential, and commercial habitats. Species not observed.	Not observed.
Tri-colored Bat (Source: Burnside)	<i>Perimyotis subflavus</i>	S3?	END	END	END	1	Overwintering habitat: Deepest parts of caves and mines where temperature is the least variable. Maternal Roosts: Less is known about roosts of Tri-colored Bats. Most roost sites found within forested habitats. May roost in clumps of dead foliage and lichens. In more anthropogenically modified landscapes, maternity roosts may be barns or similar human-made structures. ¹²	Moderate potential. Suitable habitat present in treed, residential, and commercial habitats. Species not observed.	Not observed.
Vegetation									
Black Ash (Source: NHIC)	<i>Fraxinus nigra</i>	S4	END	THR	No Status	No Schedule	Predominantly a wetland species found in swamps, floodplains, and fens. ⁵ Sometimes it is a dominant tree, or merely scattered (as often in cedar swamps). ¹³ Black Ash ranges from Newfoundland to Manitoba and south to the U.S., with about 51% of its global range in Canada. ⁵	Low potential. Suitable habitat may be present in wetland areas within the Study Area. Species not observed.	Observed by AECOM in association with the SWT4-1 and SWM4-1 communities.

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								Road Right-of-Way (ROW)	Victoria Road Bridges
								Observed by AECOM in association with the SWT4-1 and SWM4-1 communities.	
Blushing Scale Lichen (Source: NHIC)	<i>Psora decipiens</i>	S3	No Status	No Status	No Status	No Schedule	Small, scattered, round, and smooth pinkish-green patches occurring on bare calcareous soil in exposed areas, often among mosses and other vegetation.	Low potential. Suitable habitat present in association with CLT inclusions. Not observed.	Not observed.
Bristling Shadow Lichen (Source: NHIC)	<i>Phaeophyscia hirsuta</i>	S2S3	No Status	No Status	No Status	No Schedule	Found in southern Ontario in mature forests with high-pH bark, and on rocks.	High potential. Species was observed at the University of Guelph arboretum in 2010. Assumed present.	Not observed.
Butternut (Source: NHIC)	<i>Juglans cinerea</i>	S2?	END	END	END	1	Butternut grows best in rich, moist and well-drained soils or limestone gravel sites. They are less commonly found in dry, rocky and sterile soils. They generally grow alone or in small groups in deciduous forests that are commonly comprised of Basswood, Black Cherry, Beed, Black Walnut, Elm, Hemlock, Hickory, Oak, Red Maple, Sugar Maple, Poplar, White Ash and Yellow Birch. In Ontario, they can be found throughout southern Ontario, south of the Canadian Shield. ⁵	Moderate potential. Suitable habitat may exist in forested areas or isolated trees within open areas of the Study Area. Species not observed.	Not observed.
Common Hop-tree (Source: NHIC)	<i>Ptelea trifoliata</i>	S3	SC	SC	SC	1	Generally grows in sandy soils in areas with a lot of natural disturbance - such as the outer edge of shoreline vegetation, sand spits, and sand points. ¹⁴	No potential. Suitable habitat is absent from the Study Area.	Not observed.
Reptiles and Amphibians									
Blanding's Turtle (Source: ORAA)	<i>Emydoidea blandingii</i>	S3	THR	END	END	1	Live in shallow water, usually in large wetlands and shallow lakes with lots of water plants. Can also be found hundreds of meters away from nearest waterbody when searching for a mate or travelling to a nesting site. ¹⁴	No potential. Suitable habitat is absent from the Study Area. Candidate habitat may be present in the adjacent lands East of Stone Road, where there is Provincially Significant Wetland.	Not observed.

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								Road Right-of-Way (ROW)	Victoria Road Bridges
Eastern Milksnake (Source: NHIC, ORAA)	<i>Lampropeltis triangulum</i>	S4	NAR	SC	SC	1	Habitat generalist. Found in wide variety of habitats, from open woodlands, bogs, swamps, woodland edges, marshes, lakeshores, old fields, pastures, farmyards, parks, gardens. Often in or near farm outbuildings, barns, and sheds, and are attracted to piles of rocks, logs, firewood, or building materials, or any place that offers shelter to snakes and their prey (rodents). ¹⁵	Moderate potential. Suitable habitat is present throughout the Study Area. No Eastern Milksnakes were observed during site investigations.	Not observed.
Eastern Ribbonsnake (Source: NHIC)	<i>Thamnophis sauritus</i>	S4	SC	SC	SC	1	Generally occur along the edges of shallow ponds, streams, marshes, swamps, or bogs bordered by dense vegetation that provides cover. Abundant exposure to sunlight is also required, and adjacent upland areas may be used for nesting. ¹⁴	Moderate potential. Suitable habitat is present throughout the Study Area. No Eastern Ribbonsnakes were observed during site investigations.	Not observed.
Midland Painted Turtle (Source: NHIC, ORAA)	<i>Chrysemys picta marginata</i>	S4	NAR	SC	SC	1	Generally, prefers waterbodies such as ponds, marshes, lakes and slow-moving creeks that have a soft bottom and provide abundant basking sites and aquatic vegetation. ¹⁵	Low potential. Suitable habitat present in habitats associated with the Eramosa River. Observed by AECOM and NRSI in association with the Eramosa River.	Not observed.
Northern Map Turtle (Source: NHIC, ORAA)	<i>Graptemys geographica</i>	S3	SC	SC	SC	1	Highly aquatic. Inhabit slow moving water in larger lakes, rivers, reservoirs, oxbow sloughs, and open marshes, including some of the bays and inlets of the Great Lakes themselves with soft mud to sand, gravel, or marl bottom substrates. Less common in smaller lakes and streams; juveniles may reside in small ponds. Require high-quality water that supports the female's mollusc prey. ¹⁶	Low potential. Suitable habitat present in habitats associated with the Eramosa River. Species not observed.	Not observed.
Snapping Turtle (Source: NHIC, ORAA)	<i>Chelydra serpentina</i>	S4	SC	SC	SC	1	Generally, inhabit shallow waters where they can hide under the soft mud and leaf litter. Nesting sites usually occur on gravelly or sandy areas along streams. Snapping Turtles often take advantage of man-made structures for nest sites, including roads (especially gravel shoulders), dams and aggregate pits. ⁵	Low potential. Suitable habitat present in habitats associated with the Eramosa River. Species not observed.	Not observed.
Western Chorus Frog (Source: NHIC, ORAA)	<i>Pseudacris maculata</i>	S4	NAR	THR (Great Lakes - St	THR (Great Lakes -	1	Inhabits forest openings around woodland ponds but can also be found in or near damp meadows, marshes, bottomland	Moderate potential. Suitable habitat may be present in wetland areas	Not observed.

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								Road Right-of-Way (ROW)	Victoria Road Bridges
				Lawrence population in Canada)	St Lawrence population in Canada)		swamps, and temporary ponds in open country, or even urban areas. Breeds in almost any fishless pond with at least 10 cm of water, including quiet, shallow, temporary waterbodies with vegetation that is submerged or protrudes from the water, especially in rain-flooded meadows and ditches, and in temporary ponds on floodplains. ¹⁵	and in habitats associated with the Eramosa River. No species observed during targeted amphibian breeding call surveys.	

** Sources: Natural Heritage Information Centre (NHIC) database of records searched on September 8, 2025 (Six 1x1 km² Squares: 17NJ6222, 17NJ6322, 17NJ6422, 17NJ6522, 17NJ6221, 17NJ6321, 17NJ6421, 17NJ6521); Ontario Breeding Bird Atlas (2001-2005) searched on September 8, 2025, (Square 17NJ62); Ontario Reptile and Amphibian Atlas (ORAA) searched on July 6, 2018 (Squares 17NJ62); R.J. Burnside & Associates (Burnside) observations during ecological field surveys in 2025.

¹S-Ranks (provincial)

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SX — Presumed Extirpated - Species or community is believed to be extirpated from the province. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered.
SH — Possibly Extirpated (Historical) - Species or community occurred historically in the province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20–40 years. A species or community could become SH without such a 20-40 year delay if the only known occurrences in a province were destroyed or if it had been extensively and unsuccessfully looked for. The SH rank is reserved for species or communities for which some effort has been made to relocate occurrences, rather than simply using this status for all elements not known from verified extant occurrences.
S1 — Critically Imperiled - Critically imperiled in the province or state 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 province.
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S3 — Vulnerable - Vulnerable in the 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 province.
SNR — Unranked - Province conservation status not yet assessed.
SU — Unrankable - Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
SNA — Not Applicable - A conservation status rank is not applicable because the species is not a suitable target for conservation activities.
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).
S#? – Inexact or Uncertain - Denotes inexact or uncertain numeric rank.

Breeding Status Qualifiers

B – Breeding Conservation status refers to the breeding population of the species in the nation or state/province.
N – Nonbreeding Conservation status refers to the non-breeding population of the species in the province.
M – Migrant species occurring regularly on migration at particular staging areas or concentration spots where the species might warrant conservation attention. Conservation status refers to the aggregating transient population of the species in the province.

² PSO Protected Species in Ontario List

(provincial status from [O. Reg. 60/26 PROTECTED SPECIES IN ONTARIO LIST | ontario.ca](#))
The provincial review process is implemented by the MNRF's Committee on the Status of Species at Risk in Ontario (COSSARO).

Extinct - A species that no longer exists anywhere.
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Endangered (END) - Lives in the wild in Ontario but is facing imminent extinction or extirpation.
Threatened (THR) - 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.
Special concern (SC) - 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.
Not at Risk (NAR) - A species that has been evaluated and found to be not at risk.
Data Deficient (DD) - A species for which there is insufficient information for a provincial status recommendation.

³SARA (Federal Species at Risk Act) Status and Schedule (includes COSEWIC Status)

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 Special Concern. Once listed, the measures to protect and recover a listed wildlife species are implemented.

Extinct - A wildlife species that no longer exists.
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Endangered (END) - A wildlife species facing imminent extirpation or extinction.
Threatened (THR) - A wildlife species that is likely to become an endangered if nothing is done to reverse the factors leading to its extirpation or extinction.

Special Concern (SC) - A wildlife species that may become threatened or endangered because of a combination of biological characteristics and identified threats.
Data Deficient (DD) - A category that applies when the available information is insufficient (a) to resolve a wildlife species' eligibility for assessment or (b) to permit an assessment of the wildlife species' risk of extinction.
Not At Risk (NAR) - A wildlife species that has been evaluated and found to be not at risk of extinction given the current circumstances.

⁴**SARA Schedule**

Schedule 1: is the official list of species that are classified as extirpated, endangered, threatened, and of 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 of 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.

Sources:

⁵SARO List Species Descriptions (Species at risk in Ontario | ontario.ca)
⁶Cadman, M.D., et al. (eds). 2007. Atlas of the Breeding Birds of Ontario, 2001-2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature, Toronto, xxii + 706 pp
⁷Species at Risk Public Registry <https://species-registry.canada.ca/>
⁸McCracken, J.D. et al. 2013. Recovery Strategy for the Bobolink (*Dolichonyx oryzivorus*) and Eastern Meadowlark (*Sturnella magna*) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources and Forestry, Peterborough, Ontario, viii + 88 pp.
⁹COSEWIC. 2023. COSEWIC assessment and status report on the Hoary Bat Lasiurus cinereus, Eastern Red Bat Lasiurus borealis and Silver-haired Bat, Lasionycteris noctivagans, in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xxi + 100 pp.
¹¹Humphrey, C. 2017. Recovery Strategy for the Eastern Small-footed Myotis (*Myotis leibii*) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources and Forestry, Peterborough, Ontario. vii + 76 pp.
¹²Environment Canada. 2015. Recovery Strategy for Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*) and Tri-colored Bat (*Perimyotis subflavus*) in Canada [Proposed]. Species at Risk Act Recovery Strategy Series. Environment Canada, Ottawa. lx + 110 pp.
¹³Farrar, John Laird, 2017, Trees in Canada, Natural Resources Canada | Canada Forest Services, and, Fitchhenry &Whiteside Limited, pp.238 - 239
¹⁴MNRF. 2018. City of Niagara Falls Species at Risk Table. Guelph District.
¹⁵Ontario Nature Reptile and Amphibian Atlas (ON Reptile & Amphibian Atlas (ontarioinsects.org))
¹⁶Harding, J.H., 1997. Amphibians and Reptiles of the Great Lakes Region. The University of Michigan Press. Ann Arbor, Michigan



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Appendix C

Breeding Bird Summary Table

Breeding Bird Survey Summary Table

Common Name	Scientific Name	Provincial S-Rank ¹	City of Guelph Status (2012)	Provincial SARO (Endangered Species Act, 2007) ²	Federal COSEWIC ³	Federal SARA (Species at Risk Act) ³	Federal SARA Schedule ⁴	Provincial MNR Area Sensitive Species ⁵	Highest Number Recorded (All Habitat Units Combined)	Highest Recorded Breeding Evidence ⁶	Comments
Alder Flycatcher	<i>Empidonax alnorum</i>	S5B							4	Possible, S	
American Crow	<i>Corvus brachyrhynchos</i>	S5							12	Probable, T	
American Goldfinch	<i>Spinus tristis</i>	S5							40	Probable, T	
American Redstart	<i>Setophaga ruticilla</i>	S5B	Locally Significant					Yes	11	Probable, T	
American Robin	<i>Turdus migratorius</i>	S5							34	Confirmed, FY	
American Tree Sparrow	<i>Spizella arborea</i>	S5							8	Possible, S / H	
Baltimore Oriole	<i>Icterus galbula</i>	S4B	Locally Significant						6	Confirmed, CF	
Bank Swallow	<i>Riparia riparia</i>	S4B	Locally Significant	THR	THR	THR	1		4	Probable, V	Foraging.
Barn Swallow	<i>Hirundo rustica</i>	S4B		SC	SC	THR	1		9	Confirmed, CF/AE	
Belted Kingfisher	<i>Megaceryle alcyon</i>	S5B, S4N	Locally Significant						3	Possible, S	
Black-and-white Warbler	<i>Mniotilta varia</i>	S5B	Locally Significant					Yes	2	Possible, S	
Black-capped Chickadee	<i>Poecile atricapillus</i>	S5							17	Probable, T	
Blue Jay	<i>Cyanocitta cristata</i>	S5							8	Probable, T	
Blue-winged Warbler	<i>Vermivora cyanoptera</i>	S4B	Locally Significant						1	Possible, S	From across the road.
Brown-headed Cowbird	<i>Molothrus ater</i>	S5							9	Probable, T	
Canada Goose	<i>Branta canadensis</i>	S5							13	Confirmed, CF	
Cape May Warbler	<i>Setophaga tigrina</i>	S5B							1	Observed, X	Late migrant near Arboretum.
Cedar Waxwing	<i>Bombycilla cedrorum</i>	S5							36	Probable, T	
Chestnut-sided Warbler	<i>Setophaga pensylvanica</i>	S5B							2	Probable, T	
Chimney Swift	<i>Chaetura pelagica</i>	S3B		THR	THR	THR	1		4	Observed, X	Foraging.

Common Name	Scientific Name	Provincial S-Rank ¹	City of Guelph Status (2012)	Provincial SARO (Endangered Species Act, 2007) ²	Federal COSEWIC ³	Federal SARA (Species at Risk Act) ³	Federal SARA Schedule ⁴	Provincial MNR Area Sensitive Species ⁵	Highest Number Recorded (All Habitat Units Combined)	Highest Recorded Breeding Evidence ⁶	Comments
Chipping Sparrow	<i>Spizella passerina</i>	S5B, S3N							6	Probable, T	
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>	S4S5B	Locally Significant						3	Confirmed, AE	
Common Grackle	<i>Quiscalus quiscula</i>	S5							5	Probable, T	
Common Yellowthroat	<i>Geothlypis trichas</i>	S5B, S3N							12	Probable, T	
Cooper's Hawk	<i>Accipiter cooperii</i>	S4	Locally Significant	NAR					1	Observed, X	Flyover.
Downy Woodpecker	<i>Dryobates pubescens</i>	S5							5	Probable, T	
Eastern Bluebird	<i>Sialia sialis</i>	S5B, S4N		NAR					1	Possible, S	Nest boxes at arboretum present.
Eastern Kingbird	<i>Tyrannus tyrannus</i>	S4B	Locally Significant						16	Probable, T	
Eastern Meadowlark	<i>Sturnella magna</i>	S4B, S3N		THR	THR	THR	1	Yes	3	Probable, T	
Eastern Phoebe	<i>Sayornis phoebe</i>	S5B							3	Possible, S	
Eastern Wood-pewee	<i>Contopus virens</i>	S4B	Locally Significant	SC	SC	SC	1		4	Probable, T	
European Starling	<i>Sturnus vulgaris</i>	SNA							59	Probable, T	
Field Sparrow	<i>Spizella pusilla</i>	S4B, S3N	Locally Significant						11	Probable, T	
Gray Catbird	<i>Dumetella carolinensis</i>	S5B, S3N							10	Probable, T	
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	S5B							11	Possible, S	
Hairy Woodpecker	<i>Dryobates villosus</i>	S5	Locally Significant					Yes	1	Possible, S	From edge of WOD.
Horned Lark	<i>Eremophila alpestris</i>	S4							3	Possible, S	
House Finch	<i>Haemorhous mexicanus</i>	SNA							1	Possible, S	
House Sparrow	<i>Passer domesticus</i>	SNA							3	Possible, S	
House Wren	<i>Troglodytes aedon</i>	S5B							16	Probable, T	
Indigo Bunting	<i>Passerina cyanea</i>	S5B							16	Probable, T	

Common Name	Scientific Name	Provincial S-Rank ¹	City of Guelph Status (2012)	Provincial SARO (Endangered Species Act, 2007) ²	Federal COSEWIC ³	Federal SARA (Species at Risk Act) ³	Federal SARA Schedule ⁴	Provincial MNR Area Sensitive Species ⁵	Highest Number Recorded (All Habitat Units Combined)	Highest Recorded Breeding Evidence ⁶	Comments
Killdeer	<i>Charadrius vociferus</i>	S4B							5	Probable, A	
Least Flycatcher	<i>Empidonax minimus</i>	S5B	Locally Significant					Yes	1	Possible, S	
Mallard	<i>Anas platyrhynchos</i>	S5							1	Possible, H	
Mourning Dove	<i>Zenaida macroura</i>	S5							10	Probable, T	
Northern Cardinal	<i>Cardinalis cardinalis</i>	S5							17	Probable, T	
Northern Flicker	<i>Colaptes auratus</i>	S5	Locally Significant						4	Probable, T	
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	S4B							1	Possible, H / S	Observed during the spring botanical inventory.
Orchard Oriole	<i>Icterus spurius</i>	S4B	Locally Significant						1	Possible, H	
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	S5	Locally Significant						1	Possible, H / S	
Red-eyed Vireo	<i>Vireo olivaceus</i>	S5B							14	Probable, T	
Red-tailed Hawk	<i>Buteo jamaicensis</i>	S5		NAR					1	Observed, X	Flyover.
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	S5							27	Confirmed, CF	
Rock Pigeon	<i>Columba livia</i>	SNA							1	Possibility, H	
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	S5B	Locally Significant						1	Possible, H	Flew into hedgerow.
Savannah Sparrow	<i>Passerculus sandwichensis</i>	S5B, S3N	Locally Significant					Yes	12	Probable, T	
Song Sparrow	<i>Melospiza melodia</i>	S5							45	Probable, T / A	
Tree Swallow	<i>Tachycineta bicolor</i>	S4S5B							1	Possible, S	
Warbling Vireo	<i>Vireo gilvus</i>	S5B							4	Probable, T	
White-breasted Nuthatch	<i>Sitta carolinensis</i>	S5						Yes	1	Possible, S	
Wild Turkey	<i>Meleagris gallopavo</i>	S5							1	Possible, H	
Willow Flycatcher	<i>Empidonax traillii</i>	S4B	Locally Significant						3	Probable, T	

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Yellow Warbler	<i>Setophaga petechia</i>	S5B							15	Probable, T	
TOTAL SPECIES	63										

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²**SARO *Endangered Species Act, 2007***

(provincial status from <http://www.ontario.ca/environment-and-energy/how-species-risk-are-listed#section-3>)

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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 Special Concern. Once listed, the measures to protect and recover a listed wildlife species are implemented.

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⁴**SARA Schedule**

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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 of special concern, the prohibitions do not apply to species of special concern.

⁵Source: Ontario Ministry of Natural Resources. 2000. *Significant Wildlife Habitat Technical Guide* & Appendices.

6Ontario Breeding Bird Atlas - Breeding Evidence Codes

Observed	
X	Species observed during its breeding season, but NOT in suitable nesting habitat (no breeding evidence found). Note that this code is rarely used as birds tend to occupy nesting habitat during the breeding season. Do not use for species known to be migrants.

Possible	
H	Species observed in suitable nesting Habitat during its breeding season.
S	Singing male or adult producing other sounds associated with breeding (e.g., calls or drumming) in suitable nesting habitat during the species' breeding season.

Probable	
M	Multiple singing/calling/drumming individuals (7 or more) heard during one visit to a single square and in suitable nesting habitat during the species' breeding season. Use with caution to avoid counting migrants.
P	Pair observed in suitable nesting habitat during the species' breeding season.
T	Presumed Territory based on the presence of an adult bird (usually singing, but not necessarily so), in the same suitable nesting habitat patch on at least two visits, one week or more apart, during the species' breeding season. Use discretion when using this code. "T" is not to be used for colonial birds, or species that might forage or loaf a long distance from their nesting site (e.g., Turkey Vulture, and male waterfowl).
D	Courtship or displays involving a male and female (e.g., courtship feeding, copulation) or antagonistic behavior between two or more individuals (e.g., territorial disputes or chases), in suitable nesting habitat during the species' breeding season.
V	Bird Visiting a probable nest site in suitable nesting habitat during the species' breeding season.
A	Agitated behavior or alarm calls of an adult in suitable nesting habitat during the species' breeding season.
B	Brood patch or cloacal protuberance on an adult in suitable nesting habitat during the species' breeding season.
N	Nest-building by wrens or nest hole excavation by woodpeckers (both may build dummy or roosting nests, so nest-building alone is not enough to confirm breeding).

Confirmed	
NB	Nest building, including the carrying of nesting material, by all species except wrens and woodpeckers.
DD	Distraction Display, injury-feigning, or other displays attempting to draw attention away from a nest or young.
NU	Empty Nest Used or identifiable eggshells from earlier in the same nesting season.
FY	Recently Fledged Young (nidicolous species – whose young are raised in a nest) or downy young (nidifugous species – whose young leave the nest soon after hatching) incapable of sustained flight.
AE	Adult Entering, occupying, or leaving a nest site (visible or not) or whose behavior suggests the presence of an occupied nest.
FS	Adult carrying a Faecal Sac.
CF	Adult carrying food for young.
NE	Nest containing eggs.
NY	Nest with young (seen or heard).



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Appendix D

ELC Description Table

ELC (1998)	ELC Name	Road	Bridge	Description	Photo
n/a	Residential	x		There are multiple residential properties throughout the study area.	
n/a	Parkland	x		This community includes areas of maintained turf, community garden, and volleyball nets. It is a part of Eramosa River Park.	
n/a	Commercial and Institutional	x		There are multiple commercial plazas at the southern corner of the Victoria Road S. and York Road intersection. The plaza includes businesses such as Tim Horton's and Ethnic Supermarket.	

ELC (1998)	ELC Name	Road	Bridge	Description	Photo
n/a	Heavy Industry	x		This community is located on the east side of Victoria Road S. north of the Eramosa River. This community includes a heavy industry business and a maintained turf area. This community includes a shallow cattail wetland (MAS) inclusion set back approximately 75 m from the road.	
FOD5-2	Dry-Fresh Sugar Maple-Beech Deciduous Forest	x		This community is located along the west side of Victoria Road S., immediately south of the Eramosa River and is adjacent to the Cutten Fields golf course. This community has been impacted by anthropogenic disturbance including invasive species and ad-hoc trails. The canopy and subcanopy of the community is dominated by Sugar Maple (<i>Acer saccharum</i>) with an abundance of Ironwood (<i>Ostrya virginiana</i>), American Beech (<i>Fagus grandifolia</i>), and Trembling Aspen (<i>Populus tremuloides</i>). The understory is fairly open with inclusions of European Buckthorn (<i>Rhamnus cathartica</i>) and Japanese Barberry (<i>Berberis thunbergii</i>). Groundcover species provided >50% cover and is dominated by Broad-leaved Goldenrod (<i>Solidago flexicaulis</i>), Large Leaved Aster (<i>Eurybia macrophylla</i>), False Solomon's Seal (<i>Maianthemum racemosum</i>), and Garlic Mustard (<i>Alliaria petiolata</i>). To a lesser density the following species were also included in the groundcover: Wall lettuce (<i>Lactuca muralis</i>), Three-Leaved Rattlesnake Root (<i>Nabalus trifoliolatus</i>), Bloodroot (<i>Sanguinaria canadensis</i>), Blue Cohosh (<i>Caulophyllum thalictroides</i>), Virginia Creeper (<i>Parthenocissus quinquefolia</i>), Oxeye Daisy (<i>Leucanthemum vulgare</i>) and Philadelphia Fleabane (<i>Erigeron philadelphicus</i>). A Sugar Maple-Ironwood-White Ash Treed Calcareous Cliff (CLTC1-2) inclusion is present within this this community which runs parallel to the Eramosa River. This inclusion is dominated by Sugar Maple with the toe of the cliff being dominated by Ostrich Fern (<i>Matteuccia struthiopteris</i>), Wood Nettle (<i>Laportea canadensis</i>) and White Snakeroot (<i>Ageratina altissima</i>). Additionally, there is a swamp (SWD) feature that runs parallel to the Eramosa River that extends westward.	 (CLTC1-2 Inclusion)

ELC (1998)	ELC Name	Road	Bridge	Description	Photo
OAW	Open Water	x	x	This community represent the Eramosa River. No aquatic vegetation species occur in association with this community.	
CUW1a	Fresh-Moist Deciduous Woodland	x		This community is located on the east side of Victoria Road S. and runs adjacent to the Eramosa River (on both the north and south side). The canopy is dominated by Basswood (<i>Tilia americana</i>) and American Elm (<i>Ulmus americana</i>) with the subcanopy made up of Basswood, American Elm, Eastern White Cedar (<i>Thuja occidentalis</i>). There was dead Ash (<i>Fraxinus sp.</i>) within the canopy and many Ash saplings within the understorey. The ground layer included Tall Goldenrod (<i>Solidago altissima</i>), Pennsylvania Sedge (<i>Carex pennsylvanica</i>), Garlic Mustard, and Wild Grape (<i>Vitis riparia</i>). A White Cedar Treed Calcareous Cliff Type (CLT1-1) inclusion was identified in association with this community by NRSI (2025).	
CUW1b	Dry-Fresh Deciduous Woodland	x		This community is located along the west side of Victoria Road S., immediately south of the FODM5-2 community. The canopy coverage is less than 60% making it a woodland, as opposed to a forest community. It was dominated by exclusively Black Locust (<i>Robinia pseudoacacia</i>) with an understorey of occasional European Buckthorn and a graminoid dominated ground layer.	

ELC (1998)	ELC Name	Road	Bridge	Description	Photo
CUM1-1a	Mixed Meadow	x		This community is located on the east side of Victoria Road S. and runs almost the entirety of the right-of-way between the Eramosa River to Stone Road E. The ground layer was a mix of grasses and forbs. The dominant and abundant species include Smooth Brome (<i>Bromus inermis</i>), Purple Crown Vetch (<i>Securigera varia</i>), Orchard Grass (<i>Dactylis glomerata</i>) and Queen Anne's lace (<i>Daucus carota</i>). Occasional species include Oxeye Daisy, Bladder Champion (<i>Silene vulgaris</i>), Common Milkweed (<i>Asclepias syriaca</i>), Canada Goldenrod (<i>Solidago canadensis</i>), Common Dandelion (<i>Taraxacum officinale</i>), Common Ragweed (<i>Ambrosia artemisiifolia</i>), New England Aster (<i>Symphyotrichum novae-angliae</i>), Panicked Aster (<i>Symphyotrichum lanceolatum</i>), and Common Toadflax (<i>Linaria vulgaris</i>). There is no apparent canopy or subcanopy, however there are sporadic small stands of Staghorn Sumac and occasional Honey Locust (<i>Gleditsia triacanthos</i> var. <i>inermis</i>), White Willow (<i>Salix alba</i>), and Eastern Cottonwood (<i>Populus deltoides</i>) throughout the community.	
CUM1-1b	Dry-Fresh Mixed Meadow	x		This community is located along the west side of Victoria Road S. and is part of the University of Guelph Arboretum. The meadow includes a research facility. The meadow community is a mixed meadow with both Smooth Brome and Goldenrod sp. (<i>Solidago</i> sp.), Common Milkweed was observed in groupings. Both Red Cedar (<i>Juniperus virginiana</i>) and Sugar Maple (planted) are observed in a linear fashion adjacent to the ROW creating a visual buffer between the community and the road.	
FOD3-1	Dry-Fresh Poplar Deciduous Forest	x		This community is located west of the MEMM3 community and research facility. The canopy and sub-canopy are dominated by Poplar sp. (<i>Populus</i> sp.). Understorey and ground layer were not recorded as they were not visible from the ROW.	See treed area in background of MEMM3 photo
FOD7	Fresh-Moist Lowland Deciduous Forest	x		This community is located at the north-western corner of Victoria Road S. and College Avenue E. This community is occasional deadfall with only rare standing snags. The canopy includes Black Walnut (<i>Juglans nigra</i>), Trembling Aspen, Manitoba Maple (<i>Acer negundo</i>) and White Willow. There are some open grassy areas interspersed throughout the community; however canopy coverage exceeds 60%. Shrubs found in the understorey include Black Raspberry (<i>Rubus occidentalis</i>) and Japanese Barberry. This community is adjacent to deciduous treed swamp that is greater than 30 m from the Victoria Road S. ROW.	
SWD	Deciduous Swamp	x		This community is located adjacent to the FODM7 community at the corner of Victoria Road S. and College Avenue E.	No Photo

ELC (1998)	ELC Name	Road	Bridge	Description	Photo
				As per LIO, this community is an unevaluated swamp. Burnside did not evaluate this wetland community as it was greater than 30 m from the Victoria Road S. ROW and is located on private property.	
n/a	Open Agriculture	x		There are multiple agricultural communities along the east side of Victoria Road S and Stone Road. Several inclusions are present in association with this community including the following: - Hedgerow (TAGM5) which consists of young Manitoba Maple. The groundcover layer is consistent with those present within the ROW. - Willow Mineral Deciduous Thicket Swamp Ecosite (SWTM3). Standing water was present during the summer and fall site visits. A canopy layer is absent. The subcanopy layer consists of Silver Maple (<i>Acer saccharinum</i>), Manitoba Maple, and White Willow. The understory is dominated by Slender Willow and White Willow regeneration as well as European Buckthorn. The groundcover layer is consistent. - Sumac Deciduous Shrub Thicket Type (THDM2-1) which is dominated by Staghorn Sumac. The groundcover layer is consistent with those present within the ROW.	
FOD5-1	Dry-Fresh Sugar Maple Deciduous Forest	x		This community is located at the south-western corner of Victoria Road S, and College Road E., extending south approximately 380 m. This community is part of the University of Guelph Arboretum and has trails throughout. The dense canopy (>60% coverage) is dominated by Sugar Maple with an occasional mix of Manitoba Maple, Black Locust, Norway Maple (<i>Acer platanoides</i>), and American Elm. To a lesser extent the canopy also included Trembling Aspen, Black Cherry (<i>Prunus serotina</i>), and Ironwood. An abundance of young Ash sp. was observed in the understorey, along with Staghorn Sumac (<i>Rhus typhina</i>), European Buckthorn, and Alternate-leaved Dogwood (<i>Cornus alternifolia</i>). Groundcover species provided >50% cover and includes a diversity of species including Goldenrod sp., Virginia Creeper, Mayapple (<i>Podophyllum peltatum</i>), White Trillium (<i>Trillium grandiflorum</i>), False Solomon's Seal, Blue Cohosh, Jack in the Pulpit (<i>Arisaema triphyllum</i>), Early Meadowrue (<i>Thalictrum dioicum</i>), Virginia Waterleaf (<i>Hydrophyllum virginianum</i>), Bloodroot, Canadian and Wild Ginger (<i>Asarum canadense</i>).	
n/a	Commercial and Institutional	x		This community includes institutional buildings associated with the University of Guelph Arboretum. There is a dense row of Spruce (<i>Picea sp.</i>) creating a visual division between the institutional buildings and Victoria Rd. (as shown in photo).	

ELC (1998)	ELC Name	Road	Bridge	Description	Photo
CUW1c	Deciduous Woodland	x		This community is located along the west side of Victoria Road S., just north of Arboretum Road. The canopy and subcanopy contains a variety of species including Black Locust, Manitoba Maple, Eastern Cottonwood, Red Pine (<i>Pinus resinosa</i>) and White Ash (<i>Fraxinus americana</i>). Buckthorn is dense within the understorey throughout portions of the community. The ground layer was difficult to assess from the ROW, however recorded species include Purple Crown Vetch, Reed Canary Grass (<i>Phalaris arundinacea</i>), Smooth Brome and Tall Goldenrod.	
n/a	Education	x		This community is located on either side of Arboretum Road. The north side is manicured grass and the south side includes an educational building and maintained lawn.	No Photo
FOD8-1	Fresh-Moist Poplar Deciduous Forest	x		This community is located along the west side of Victoria Road S., south of Arboretum Road and north of Stone Road E. The canopy and subcanopy consists of White Poplar (<i>Populus alba</i>) and Basswood with a less quantity of Norway Maple and Manitoba Maple. Buckthorn is abundant in the understorey. Ground layer was difficult to see from the ROW (wire fence present).	
CUW1d	Fresh White Cedar Coniferous Woodland	x		This community is located in the south-west corner of the Victoria Road S. and Stone Road E. intersection. The community is a monoculture of Eastern White Cedar. The occasional shrub layer consists almost exclusively of Buckthorn with a very underdeveloped and sparse ground layer.	

ELC (1998)	ELC Name	Road	Bridge	Description	Photo
CUM1-1c	Canada Blue Grass Graminoid Meadow Type	x		This community is present on the south side of Stone Road East immediately east of Victoria Road. Road noise is abundant within this community. A distinct canopy and subcanopy are limited to a limited number of Siberian Elm (<i>Ulmus pumila</i>). The subcanopy cover is <10% and is limited to Staghorn Sumac and European Buckthorn. The groundcover is dominated by Canada Bluegrass (<i>Poa compressa</i>) with lesser associates of Fescue, Field Bindweed (<i>Convolvulus arvensis</i>), and Goldenrod.	
CUM1-1d	Dry-Fresh Graminoid Meadow Ecosite	x		This community occurs northeast of the Stone Road and Victoria Road intersection. The groundcover within this community is dominated by Fescue with lesser associates of Smooth Brome, Leafy Spurge (<i>Euphorbia esula</i>), and Field Bindweed. Open grown plantings including Norway Maple, Red Pine, White Spruce (<i>Picea glauca</i>), Silver Maple and Norway Spruce (<i>Picea abies</i>) are present within this community within the canopy and subcanopy layers. Regenerating Black Walnut, Lilac, and Black Locust are present within the understory but provide <10% cover.	
CUM1-1e	Dry-Fresh Mixed Meadow Ecosite	x	x	This community comprises the road ROWs along Stone Road. This community lacks a canopy and subcanopy. The understory layer provides <10% cover and consists of European Buckthorn and Tatarian Honeysuckle (<i>Lonicera tatarica</i>). The groundcover layer is dominated by Smooth Brome with lesser associates of Purple Crown Vetch, Field Sow Thistle (<i>Sonchus arvensis</i>), and Canada Goldenrod.	

ELC (1998)	ELC Name	Road	Bridge	Description	Photo
n/a	Heavy Industry	x		This community is located on the south side of Stone Road. Soil stockpiles and extraction activities are ongoing at this site. Of note, a Bank Swallow colony is present within this community.	
CUP1-1	Coniferous Plantation	x		This community is present on the north side of Victoria road immediately west of the Guelph Junction Railway. This community consist of young to mid-aged conifers planted in row-style plantings. This community lacks standing snags or deadfall logs. This community lacks an established canopy due to its age. The subcanopy provides >80% cover and is dominated by White Spruce with lesser associates of Norway Spruce, White Pine (<i>Pinus strobus</i>), and Tamarack (<i>Larix laricina</i>). The understory and groundcover layers are poorly developed due to the density of plantings and provide <5% cover respectively. Understory species include European Buckthorn, Chokecherry (<i>Prunus virginiana</i>), and regenerating Black Locust. Understory species include Purple Crown Vetch and Common Milkweed.	
FOM4-2	Dry-Fresh White Cedar-Poplar Mixed Forest Type	x		This community is present on the south side of Stone Road immediately west of the Guelph Junction Railway. This community consists of mid-aged mixed-wood forest with no standing snags and limited deadfall. Edge effects are prevalent within this community, becoming sparse with increasing cover from the White Cedars. The canopy and subcanopy layers are dominated by Eastern White Cedar with lesser associates of Red Pine, Trembling Aspen, and White Birch (<i>Betula papyrifera</i>). Dominant species with the understory include European Buckthorn, Chokecherry, and Green Ash (<i>Fraxinus pennsylvanica</i>) which provide approximately 50% cover. The groundcover layer, where visible, appears to be patchy, providing approximately 30% cover. Common groundcover species identifiable from the margins of this community include Broad-leaved Goldenrod, Green Ash regeneration, Heart-leaf Aster (<i>Symphotrichum cordifolium</i>), and Tall Goldenrod. An unevaluated MNRF wetland was identified within this community adjacent to the Guelph Junction Railway by the MNRF. Upon review from the ROW, this feature was not visible. The data is greater than 15 years old and	

ELC (1998)	ELC Name	Road	Bridge	Description	Photo
				was originally mapped through orthoimagery so Burnside has deemed it appropriate to remove from the ELC evaluation.	
SWM	Mixed Swamp	x		This community is located well away from the ROW on private property and was not assessed by Burnside. This community was identified through a desktop review and air photo review.	No Photo
FOM4	Dry-Fresh White Cedar Mixed Forest Ecosite	x		This community is present on the north side of Stone Road immediately east of the Guelph Rail Junction on the north and south sides of Stone Road. Numerous standing Ash snags are present within this community. This community is present along a moderate slope. Informal and formal trails are present within this community. The FOMM4 community south of Stone Road could not be accessed due to fencing and was instead assessed from the margins. The canopy is dominated by Trembling Aspen, Basswood, Eastern White Cedar and White Birch. The subcanopy is dominated by Eastern White Cedar, Trembling Aspen, White Pine, and Sugar Maple. The understory is dense and is dominated by Green Ash with lesser associates of White Cedar regeneration. European Buckthorn, and White Ash regeneration. The groundcover is dominated by Canada Goldenrod, Large-leaf Aster, Fox Sedge (<i>Carex vulpinoidea</i>), and Cool Season Grasses such as Orchard Grass and Annual Bluegrass (<i>Poa annua</i>). A drainage swale is present adjacent to this community of the south side of Stone Road which is dominated by Narrowleaf Cattail (<i>Typha angustifolia</i>), Reed Canary Grass, Purple-stemmed Aster (<i>Symphyotrichum puniceum</i>), and Spotted Jewelweed (<i>Impatiens capensis</i>).	 
FOC4-1	Fresh-Moist White Cedar Coniferous Forest Type	x		This community is present on the north side of Stone Road east of the Guelph Rail Junction. This community is located at the base of a slope. This community is dominated by densely growing mature White Cedar with lesser associates of Trembling Aspen and White Birch. This community lacks a distinct subcanopy, understory, and groundcover layer.	No Photo

ELC (1998)	ELC Name	Road	Bridge	Description	Photo
SWM4-1	White Cedar-Hardwood Organic Mixed Swamp Type	x	x	This community is located on the south side of Stone Road along the east and west banks of Eramosa River. These communities are located on privately owned property by the Guelph Outdoors School and the Barber Scout Camp. Standing water was observed within this community on each of Burnside’s site visits. A swale also runs along the north side of this community that discharges directly to the Eramosa River. The canopy provides approximately 40% cover and is dominated by White Willow, Trembling Aspen, White Cedar, and White Birch. The subcanopy is dominated by White Cedar with lesser associates of Trembling Aspen, Balsam Poplar (<i>Populus balsamifera</i>), and White Willow. The understory is dense and is dominated by Willows with lesser associates of White Cedar, Alder-leaved Buckthorn (<i>Rhamnus alnifolia</i>), and Green Ash. The groundcover is dense and is dominated by Spotted Jewelweed, Reed Canary Grass, Marsh Marigold (<i>Caltha palustris</i>), and Tall Goldenrod. Two Mixed Forb Organic Meadow Marsh Type (MAMO2-3) inclusions are present within this this community and were identified from a distance and from air photos. These inclusions are dominated by grasses, Spotted Jewelweed, Spotted Joe Pye Weed (<i>Eutrochium maculatum</i>), and Common Cattail (<i>Typha latifolia</i>).	

ELC (1998)	ELC Name	Road	Bridge	Description	Photo
SWT4-1	Red-osier Organic Deciduous Thicket Swamp Type	x		This community is located on the north side of Stone Road immediately west of the Eramosa River. A distinct canopy is absent. A subcanopy which provides approximately 10-25% cover is present and is dominated by Balsam Poplar with lesser associates of Trembling Aspen, White Willow, and Silver Maple. The understory is dense, providing >80% cover and is dominated by Red Osier Dogwood (<i>Cornus sericea</i>), European Buckthorn, Silky Dogwood (<i>Cornus amomum</i>), and Gray Dogwood (<i>Cornus racemosa</i>). The groundcover provides approximately 25-60% cover and is dominated by Canada Clearweed (<i>Pilea pumila</i>), Stinging Nettle (<i>Urtica dioica</i>), Spotted Jewelweed, and Sensitive Fern (<i>Onoclea sensibilis</i>). A Mixed Forb Organic Meadow Marsh Type (MAMO2-3) inclusion is present along the western boundary of this community immediately adjacent to the Eramosa River. The dominant species present include Spotted Jewelweed, Tall Goldenrod, Reed Canary Grass, and Narrow-leaf Cattail.	
FOC2-2	Dry-Fresh White Cedar Coniferous Forest Type	x		This community is associated with the Guelph Outdoors School east of the Eramosa River on the south side of Stone Road. Trails are present within this community. This community is dominated by densely growing mid-aged White Cedar. The understory is poorly developed and is dominated by White Cedar with lesser associates of Trembling Aspen and Basswood. This community lacks a distinct understory, and groundcover layer. Species present within the understory layer are limited to the margins of this community and consist of European Buckthorn, Green Ash regeneration, Trembling Aspen regeneration, and Manitoba Maple. Similarly, groundcover is restricted to the margins of his community and trails. Species present include Coltsfoot (<i>Tussilago farfara</i>), Green Ash, and Hooked Buttercup (<i>Ranunculus recurvatus</i>).	

ELC (1998)	ELC Name	Road	Bridge	Description	Photo
CUT1a	Buckthorn Deciduous Shrub Thicket Type	x		This community is present on the north side of Stone Road immediately east of the Eramosa River. Informal trails are present throughout this community. The topography within this community is rolling as it gently slopes towards the Eramosa River. This community lacks a distinct canopy and subcanopy. The understory is dominated by European Buckthorn with lesser associates of Green Ash regeneration, Nannyberry (<i>Viburnum lentago</i>), and Black Locust. The groundcover consists of Smooth Brome, Orchard Grass, Leafy Spurge, and Purple Crown Vetch. A Thicket Swamp inclusion (SWT) is present at the western extent of this community. Species present include Red Osier Dogwood, European Buckthorn, White Willow, and willow shrubs. Groundcover species include Spotted Joe Pye Weed, and Purple Stemmed Aster.	
CUM1-1f	Dry-Fresh Graminoid Meadow Ecosite	x		This community is located on the north side of Stone Road immediately east of the THDM2-6a community. An established canopy and subcanopy are absent with only a single Manitoba Maple occurring within the subcanopy layer. The understory is also open, only consisting of a limited number of European Buckthorn shrubs. The groundcover consists of Smooth Brome, Canada Bluegrass, Orchard Grass, Canada Goldenrod, and Purple Crown Vetch.	
CUW1e	Deciduous Woodland	x		This community is located on the north side of Stone Road immediately north of the MEGM3a community. This community was not assessed by Burnside but was characterized by AECOM (2022). The canopy cover was determined by AECOM to be dominated by Black Walnut, American Elm, and Norway Maple. The subcanopy is dominated by Common Buckthorn, Manitoba Maple, White Ash, and Staghorn Sumac. The understory later provides 25-60% cover and is dominated by European Buckthorn, Manitoba Maple, Morrow's	No Photo

ELC (1998)	ELC Name	Road	Bridge	Description	Photo
				Honeysuckle (<i>Lonicera morrowii</i>), and Riverbank Grape. Groundcover species include Kentucky Bluegrass, Orchard Grass, Wood Avens (<i>Geum urbanum</i>), and Garlic Mustard. A CLT1-2 inclusion was identified by AECOM in association with this community.	
FOC2	Dry-Fresh Cedar Coniferous Forest Ecosite	x		This community is present on the south side of Stone Road across from the future transportation hub. This community is bordered by dense shrub growth consisting of European Buckthorn, Wild Grape, and Thicket Creeper (<i>Parthenocissus vitacea</i>). The canopy becomes much more established further south of the Road. This community consists of young to mid-aged coniferous trees. The canopy cover consists of Red Pine, White Cedar and Scots Pine. The subcanopy is dominated by White Cedar with lesser associates of Red Pine, and Scots Pine (<i>Pinus sylvestris</i>). The understory is dense, consisting of European Buckthorn with lesser associates of White Cedar, Green Ash, and Wild Grape. The groundcover is patchy and consists of Green Ash, Thicket Creeper, Virginia Strawberry (<i>Fragaria virginiana</i>), and regenerating European Buckthorn.	 755 Stone Rd E Guelph ON 140°SE (T) 43°32'58"N, 80°11'37"W ±9ft ▲ 1046ft 23 Sep 2025, 16:45:03
CUT1b	Native Mixed Regeneration Thicket Type	x		This community is present on the south side of Stone Road across from the future transportation hub immediately east of the FOCM2 community. This community lacks an established canopy. Young Scots Pine and White Cedar occur occasionally within the subcanopy layer but provide <10% cover. The understory layer appears to provide approximately 30% cover dominated by regenerating Trembling Aspen and European Buckthorn with lesser associates of regenerating White Cedar, and Smooth Rose (<i>Rosa blanda</i>). The groundcover is dominated by Smooth Brome with lesser associates of Purple Crown Vetch, Orchard Grass, and Annual Bluegrass.	 763 Stone Rd E Guelph ON 82°E (T) 43°33'0"N, 80°11'35"W ±9ft ▲ 1072ft 23 Sep 2025, 16:42:24
CUM1-1g	Dry-Fresh Graminoid Meadow Ecosite	x		This community is located on the north side of Stone Road and is within the proposed bus depot. Soil stockpiling is occurring in this area, and a vegetation management plan was previously created by Dougan Ecology. An established canopy and subcanopy are absent. The understory is also open, providing approximately 20% cover consisting of Trembling Aspen, European Buckthorn, Black Locust, and Manitoba Maple regeneration. The groundcover consists of Smooth Brome, Canada Bluegrass, Leafy Spurge, Canada Goldenrod, Orchard Grass, and Purple Crown Vetch. Young Staghorn Sumac and White Spruce plantings have become established on the tops of the large stockpiles.	

ELC (1998)	ELC Name	Road	Bridge	Description	Photo
CUT1c	Buckthorn Deciduous Shrub Thicket Type	x		This community is located on the north side of Stone Road and is within the location of the future transportation hub. Soil stockpiling is occurring in this area, and a vegetation management plan was previously created by Dougan Ecology. An established canopy and subcanopy are absent. Shrub regeneration provides approximately 30% and is dominated by European Buckthorn with lesser associates of Nannyberry, Chokecherry, and Staghorn Sumac. The groundcover layer is consistent with that found within the MEGM3b community. A Common Reed Graminoid Mineral Meadow Marsh Type (MAMM1-12) inclusion is present in association with this community and is a part of the Clyth Creek Wetland Complex. A stormwater management facility dominated by Common Reed is also present. Stormwater management ponds are typically mapped as Restoration Areas under City of Guelph OP.	
FOD5-6	Dry-Fresh Sugar Maple-Basswood Deciduous Forest Type	x		This mid-aged forest community is present on the south side of Stone Road across from the future transportation hub immediately west of the Stone Road and Watson Parkway South intersection. Distinct edge effects are present in association with this community, spanning approximately 5 m wide from the edge of this community. Invasive species are also prevalent within this community. The canopy largely consists of Sugar Maple with lesser associates of Basswood, Black Walnut, and White Cedar. The subcanopy is poorly developed, providing approximately 20% cover and is comprised of Sugar Maple, White Cedar, Basswood, and Black Walnut. The understory is dense, providing approximately 60% cover and is dominated by European Buckthorn with lesser associates of Green Ash, Smooth Rose, Chokecherry, and Lilac. The groundcover provides 25-60% cover and consists of European Buckhorn regeneration, Purple Crown Vetch, Enchanter's Nightshade (<i>Circaea candensis</i>), and Yellow Avena (<i>Geum aleppicum</i>). A Dry – Fresh White Cedar Coniferous Forest Type (FOCM2-2) inclusion is present at the eastern extent of this community and is dominated by Mature White Cedar which provide >80% cover. This inclusion lacks a distinct, subcanopy, understory, and groundcover due to the density of the White Cedar.	

ELC (1998)	ELC Name	Road	Bridge	Description	Photo
					
SWM1-1	White Cedar-Hardwood Mineral Mixed Swamp Type	x		This community occurs southeast of the Stone Road and Watson Parkway South intersection. This community was assessed from a distance due to the drop in elevation. This swamp community is a part of the Eramosa River Blue Springs Creek Provincially Significant Wetland Complex. The canopy is dominated by White Cedar. The subcanopy provides 25-60% and is dominated by White Cedar with lesser associates of Silver Maple, Ash, and standing ash snags. The understory is dense where the canopy is open and is dominated by European Buckthorn with lesser associates of Dogwood, Alder-leaved Buckthorn, Hawthorn, and Ash regeneration. The groundcover provides >30% cover and is dominated by Purple-stemmed Aster with lesser associates of Tall Goldenrod, Reed Canary Grass, and Grass-leaved Goldenrod. A Common Reed Graminoid Mineral Meadow Marsh Type (MAMM1-12) inclusion is present in association with this community.	
FOM	Mixed forest	x		This community occurs southeast of the Stone Road and Watson Parkway South intersection. The canopy is dominated by White Cedar which provide >60% cover. The subcanopy provides approximately 30% cover and is dominated by White Cedar with lesser associates of White Ash, American Elm, and Black Maple (<i>Acer nigrum</i>). Based burnside review of the margins of this community. The understory and groundcover layers are poorly developed due to the density of the canopy and subcanopy. Understory species are present along the margins of this community and provide <10% and include Chokecherry, Apple (<i>Malus sp.</i>), and European Buckthorn. Groundcover is limited to the margins of this community and includes Goldenrod, Herb Robert (<i>Geranium robertianum</i>), Canada Thistle (<i>Cirsium arvense</i>), and Purple Crown Vetch. Of note, Black Maple is considered to be locally rare within the City of Guelph	



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Appendix E

Botanical Inventory

Botanical Inventory Plant List

Scientific Name	Common Name	ESA	COSEWIC	SARA	G-Rank	S-Rank	Native/ Introduced	Wellington County (Frank & Anderson 2009) ¹	City of Guelph (Dogan 2009) ²	City of Guelph (2012) ³
<i>Acer negundo</i>	Manitoba Maple				G5	S5	N			
<i>Acer nigrum</i>	Black Maple				GNR	S4?	N		R-A	5
<i>Acer platanoides</i>	Norway Maple				G5	SNA	I			
<i>Acer saccharinum</i>	Silver Maple				G5	S5	N			
<i>Acer saccharum</i>	Sugar Maple				G5	S5	N			
<i>Achillea millefolium</i>	Common Yarrow				G5	SNA	I			
<i>Actaea pachypoda</i>	White Baneberry				GNR	S5	N			
<i>Aegopodium podagraria</i>	Goutweed				G4G5	SNA	I			
<i>Agrostis gigantea</i>	Redtop				GNR	SNA	I			
<i>Alliaria petiolata</i>	Garlic Mustard				G5	SNA	I			
<i>Alnus incana</i>	Grey Alder				G5	S5	N			
<i>Ambrosia artemisiifolia</i>	Common Ragweed				G5	S5	N			
<i>Anemonastrum canadense</i>	Canada Anemone				G5	S5	N			
<i>Anemone cylindrica</i>	Long-headed Anemone				G5	S4	N			
<i>Anemone virginiana</i>	Tall Anemone				GNR	S5	N			
<i>Angelica atropurpurea</i>	Purple-stemmed Angelica				G5	S5	N			
<i>Apocynum androsaemifolium</i>	Spreading Dogbane				G5T5	S5	N			
<i>Arctium minus</i>	Common Burdock				GNR	SNA	I			
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit				G5	S5	N			
<i>Arisaema triphyllum ssp. triphyllum</i>	Jack-in-the-pulpit				G5	S5	N			
<i>Asarum canadense</i>	Canada Wild-ginger				GNR	S5	N			
<i>Asclepias syriaca</i>	Common Milkweed				G5	S5	N			
<i>Berberis thunbergii</i>	Japanese Barberry				GNR	SNA	I			

Scientific Name	Common Name	ESA	COSEWIC	SARA	G-Rank	S-Rank	Native/ Introduced	Wellington County (Frank & Anderson 2009) ¹	City of Guelph (Dougan 2009) ²	City of Guelph (2012) ³
<i>Betula alleghaniensis</i>	Yellow Birch				G5	S5	N			
<i>Betula papyrifera</i>	Paper Birch				G5	S5	N			
<i>Bidens cernua</i>	Nodding Beggarticks				G5	S5	N			
<i>Bidens frondosa</i>	Devil's Beggarticks				GNR	S5	N			
<i>Bromus inermis</i>	Smooth Brome				GNR	SNA	I			
<i>Calamagrostis canadensis</i>	Bluejoint Reedgrass				GNR	S5	N			
<i>Caltha palustris</i>	Yellow Marsh Marigold				G5	S5	N			
<i>Campanula trachelium</i>	Nettle-leaved Bellflower				G5	SNA	I			
<i>Carex albursina</i>	White Bear Sedge				G5	S5	N			
<i>Carex pensylvanica</i>	Pennsylvania Sedge				G5	S5	N			
<i>Carex vulpinoidea</i>	Fox Sedge				GNR	S5	N			
<i>Caulophyllum thalictroides</i>	Blue Cohosh				G5	S5	N			
<i>Centaurea stoebe</i>	Spotted Knapweed				G5	SNA	I			
<i>Chelidonium majus</i>	Greater Celandine				G5	SNA	I			
<i>Chelone glabra</i>	White Turtlehead				G4	S5	N			
<i>Chenopodium album</i>	Common Lamb's-quarters				G4	SNA	I			
<i>Cichorium intybus</i>	Wild Chicory				G5	SNA	I			
<i>Cicuta maculata</i>	Spotted Water-hemlock				G5	S5	N			
<i>Circaea canadensis</i>	Broad-leaved Enchanter's Nightshade				G4G5	S5	N			
<i>Cirsium arvense</i>	Canada Thistle				G5	SNA	I			
<i>Cirsium vulgare</i>	Bull Thistle				GNR	SNA	I			
<i>Clematis virginiana</i>	Virginia Clematis				G5	S5	N			
<i>Clinopodium vulgare</i>	Wild Basil				G5	S5	N			

Scientific Name	Common Name	ESA	COSEWIC	SARA	G-Rank	S-Rank	Native/ Introduced	Wellington County (Frank & Anderson 2009) ¹	City of Guelph (Dougan 2009) ²	City of Guelph (2012) ³
<i>Convolvulus arvensis</i>	Field Bindweed				G5	SNA	I			
<i>Cornus alternifolia</i>	Alternate-leaved Dogwood				GNR	S5	N			
<i>Cornus obliqua</i>	Silky Dogwood				GNR	S5	N			
<i>Cornus racemosa</i>	Grey Dogwood				GNR	S5	N			
<i>Cornus sericea</i>	Red-osier Dogwood				GNR	S5	N			
<i>Crataegus spp.</i>	Hawthorn spp.									
<i>Cystopteris bulbifera</i>	Bulblet Bladder Fern				G5T5	S5	N			
<i>Dactylis glomerata</i>	Orchard Grass				G5	SNA	I			
<i>Daucus carota</i>	Wild Carrot				GNR	SNA	I			
<i>Dipsacus fullonum</i>	Common Teasel				G5	SNA	I			
<i>Echinocystis lobata</i>	Wild Cucumber				G5	S5	N			
<i>Echium vulgare</i>	Common Viper's Bugloss				G5	SNA	I			
<i>Elymus canadensis</i>	Canada Wildrye				G5	S5	N		R-A	5
<i>Elymus repens</i>	Quackgrass				G5	SNA	I			
<i>Elymus virginicus</i>	Virginia Wildrye				G5	S5	N			
<i>Endotropis alnifolia</i>	Alder-leaved Buckthorn				G5	S5	N			
<i>Epipactis helleborine</i>	Broad-leaved Helleborine				GNR	SNA	I			
<i>Equisetum arvense</i>	Field Horsetail				G5	S5	N			
<i>Erigeron canadensis</i>	Canada Horseweed				G5	S5	N			
<i>Erigeron philadelphicus</i>	Philadelphia Fleabane				G5	S5	N			
<i>Erigeron strigosus</i>	Rough Fleabane				G5	S5	N			
<i>Euonymus obovatus</i>	Running Strawberry-bush				GNR	S4	N			
<i>Euphorbia virgata</i>	Leafy Spurge				GNR	SNA	I			

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<i>Eurybia macrophylla</i>	Large-leaved Aster				G5	S5	N			
<i>Euthamia graminifolia</i>	Grass-leaved Goldenrod				G5	S5	N			
<i>Eutrochium maculatum</i>	Spotted Joe Pye Weed				G5	S5	N			
<i>Eutrochium maculatum</i> var. <i>maculatum</i>	Spotted Joe Pye Weed				G5	S5	N			
<i>Fagus grandifolia</i>	American Beech				G5	S4	N			
<i>Fallopia convolvulus</i>	Eurasian Black Bindweed				G5	SNA	I			
<i>Fragaria vesca</i>	Woodland Strawberry				GNR	S5	N			
<i>Fragaria virginiana</i>	Wild Strawberry				G5	S5	N			
<i>Fraxinus americana</i>	White Ash				G5	S4	N			
<i>Fraxinus pennsylvanica</i>	Red Ash				G5	S4	N			
<i>Lolium</i> spp.	Fescue spp.									
<i>Geranium robertianum</i>	Herb-Robert				G5	S5	N			
<i>Geum aleppicum</i>	Yellow Avens				G5	S5	N			
<i>Geum canadense</i>	Canada Avens				G5	S5	N			
<i>Geum fragarioides</i>	Barren Strawberry				G4	S5	N			
<i>Geum macrophyllum</i>	Large-leaved Avens				G5	S5	N			
<i>Gleditsia triacanthos</i> var. <i>inermis</i>	Honey Locust (thornless)						I			
<i>Helenium autumnale</i>	Common Sneezeweed				GNR	S4	N	R1	R-A	5
<i>Hemerocallis fulva</i>	Orange Daylily				GNR	SNA	I			
<i>Hesperis matronalis</i>	Dame's Rocket				G5	SNA	I			
<i>Hydrophyllum virginianum</i>	Virginia Waterleaf				G5	S5	N			
<i>Hylotelephium telephium</i>	Garden Stonecrop				G5	SNA	I			
<i>Hypericum perforatum</i>	Common St. John's-wort				G5	SNA	I		I	

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<i>Impatiens capensis</i>	Spotted Jewelweed				G5	S5	N		X	
<i>Iris pseudacorus</i>	Yellow Iris				G5	SNA	I			
<i>Juglans nigra</i>	Black Walnut				GNR	S4?	N			
<i>Juncus canadensis</i>	Canada Rush				G5	S5	N		R	
<i>Juncus tenuis</i>	Path Rush				G5	S5	N		X	
<i>Juniperus virginiana</i>	Eastern Red Cedar				G5	S5	N			
<i>Lactuca canadensis</i>	Canada Lettuce				G5	S5	N		X	
<i>Laportea canadensis</i>	Canada Wood Nettle				G5	S5	N		R	
<i>Lapsana communis</i>	Common Nipplewort				G5	SNA	I			
<i>Larix laricina</i>	Tamarack				G4	S5	N		X	
<i>Leersia oryzoides</i>	Rice Cutgrass				GNR	S5	N		R	
<i>Leucanthemum vulgare</i>	Oxeye Daisy				G5	SNA	I		I	
<i>Ligustrum obtusifolium</i>	Border Privet				GNR	SNA	I			
<i>Ligustrum vulgare</i>	European Privet				G5	SNA	I			
<i>Linaria vulgaris</i>	Butter-and-eggs				G5	SNA	I		I	
<i>Lonicera morrowii</i>	Morrow's Honeysuckle				GNR	SNA	I			
<i>Lonicera tatarica</i>	Tatarian Honeysuckle				G5	SNA	I		I	
<i>Lotus corniculatus</i>	Garden Bird's-foot Trefoil				G5T5	SNA	I		I	
<i>Lycopus uniflorus</i>	Northern Water-horehound				G5	S5	N		X	
<i>Lythrum salicaria</i>	Purple Loosestrife				G5	SNA	I		I	
<i>Maianthemum racemosum</i>	Large False Solomon's Seal				GNR	S5	N		X	
<i>Malus pumila</i>	Common Apple				GNR	SNA	I			
<i>Malva moschata</i>	Musk Mallow				GNR	SNA	I			

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<i>Matricaria discoidea</i>	Pineappleweed				G5	SNA	I		I	
<i>Matteuccia struthiopteris</i>	Ostrich Fern				G5	S5	N		X	
<i>Medicago lupulina</i>	Black Medick				G5	SNA	I			
<i>Melilotus albus</i>	White Sweet-clover				G5	SNA	I		I	
<i>Mycelis muralis</i>	Wall Lettuce				G5	SNA	I			
<i>Nabalus albus</i>	White Rattlesnakeroot				G5	S5	N			
<i>Oenothera biennis</i>	Common Evening-primrose				GNR	S5	N		X	
<i>Onoclea sensibilis</i>	Sensitive Fern				G5	S5	N		X	
<i>Osmundastrum cinnamomeum</i>	Cinnamon Fern				G5	S5	N			
<i>Ostrya virginiana</i>	Eastern Hop-hornbeam				G5	S5	N			
<i>Oxalis stricta</i>	Upright Yellow Wood-sorrel				GNR	SNA	I		X	
<i>Panicum virgatum</i>	Old Switch Panicgrass				G5	S4	N			
<i>Parthenocissus quinquefolia</i>	Virginia Creeper				G5TNR	S4?	N			
<i>Parthenocissus vitacea</i>	Thicket Creeper				GNR	S5	N		X	
<i>Phalaris arundinacea</i>	Reed Canarygrass				G5	S5	N		X	
<i>Phalaris arundinacea</i> var. <i>arundinacea</i>	Reed Canarygrass				G5T5	S5	N		X	
<i>Phleum pratense</i>	Common Timothy				G5	SNA	I		I	
<i>Phleum pratense</i> ssp. <i>pratense</i>	Common Timothy				G5	SNA	I			
<i>Phragmites australis</i>	Common Reed				G5	SU	N		X	
<i>Picea abies</i>	Norway Spruce				G5	SNA	I			
<i>Picea glauca</i>	White Spruce				G5	S5	N		X	
<i>Picea pungens</i>	Blue Spruce				G5	SNA	I			
<i>Pilea pumila</i>	Dwarf Clearweed				G5	S5	N	R-A		5

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<i>Pilosella officinarum</i>	Mouse-ear Hawkweed				G5	SNA	I		I	
<i>Pinus resinosa</i>	Red Pine				GNR	S5	N		X	
<i>Pinus strobus</i>	Eastern White Pine				G5	S5	N		X	
<i>Pinus sylvestris</i>	Scots Pine				G5	SNA	I			
<i>Plantago lanceolata</i>	English Plantain				GNR	SNA	I		I	
<i>Poa annua</i>	Annual Bluegrass				G5	SNA	I		I	
<i>Poa compressa</i>	Canada Bluegrass				G5	SNA	I		X	
<i>Poa pratensis</i>	Kentucky Bluegrass				G5	S5	N		X	
<i>Podophyllum peltatum</i>	May-apple				G5	S5	N			
<i>Populus alba</i>	White Poplar				G5	SNA	I			
<i>Populus balsamifera</i>	Balsam Poplar				G5	S5	N		X	
<i>Populus deltoides</i>	Eastern Cottonwood				GNR	S5	N			
<i>Populus tremuloides</i>	Trembling Aspen				G5	S5	N		X	
<i>Potentilla anserina ssp. anserina</i>	Common Silverweed				GNR	S5	N		X	
<i>Potentilla recta</i>	Sulphur Cinquefoil				G5	SNA	I		I	
<i>Prunella vulgaris</i>	Common Self-heal				G5	S5	N			
<i>Prunus serotina</i>	Black Cherry				G5	S5	N			
<i>Prunus virginiana</i>	Chokecherry				G5	S5	N		X	
<i>Quercus macrocarpa</i>	Bur Oak				G5	S5	N		R	
<i>Quercus rubra</i>	Northern Red Oak				G5	S5	N			
<i>Ranunculus acris</i>	Common Buttercup				G5	SNA	I		I	
<i>Ranunculus recurvatus</i>	Hooked Buttercup				G5T5	S5	N			
<i>Ranunculus recurvatus var. recurvatus</i>	Hooked Buttercup				GNR	S5	N			

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<i>Rhamnus cathartica</i>	European Buckthorn				G5	SNA	I			
<i>Rhus typhina</i>	Staghorn Sumac				G5	S5	N			
<i>Ribes cynosbati</i>	Eastern Prickly Gooseberry				GNR	S5	N			
<i>Ribes triste</i>	Swamp Red Currant				G5	S5	N		X	
<i>Robinia pseudoacacia</i>	Black Locust				GNR	SNA	I			
<i>Rosa blanda</i>	Smooth Rose				G5	S5	N		X	
<i>Rosa multiflora</i>	Multiflora Rose				G5	SNA	I			
<i>Rosa palustris</i>	Swamp Rose				GNR	S5	N			
<i>Rosa spinosissima</i>	Scotch Rose				G5	SNA	I			
<i>Rubus hispidus</i>	Bristly Dewberry				G5	S4	N		R	
<i>Rubus idaeus</i>	Red Raspberry				G5	S5	N			
<i>Rubus occidentalis</i>	Black Raspberry				G5	S5	N			
<i>Rubus pubescens</i>	Dwarf Raspberry				GNRTNR	S5	N		X	
<i>Rumex crispus</i>	Curled Dock				G5	SNA	I		I	
<i>Salix alba</i>	White Willow				G5	SNA	I			
<i>Salix bebbiana</i>	Bebb's Willow				GNR	S5	N		X	
<i>Salix cordata</i>	Heart-leaved Willow				G5T5	S4	N	R-C		
<i>Salix discolor</i>	Pussy Willow				G5	S5	N		X	
<i>Salix eriocephala</i>	Cottony Willow				G5	S5	N		X	
<i>Salix interior</i>	Sandbar Willow				GNR	S5	N		R	
<i>Salix petiolaris</i>	Meadow Willow				G5	S5	N		X	
<i>Sambucus canadensis</i>	Common Elderberry				G5	S5	N			
<i>Sanguinaria canadensis</i>	Bloodroot				G5	S5	N		X	

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<i>Securigera varia</i>	Purple Crown-vetch				G5	SNA	I		I	
<i>Setaria pumila</i>	Yellow Foxtail				G5	SNA	I		I	
<i>Silene latifolia</i>	White Campion				G5	SNA	I		I	
<i>Silene vulgaris</i>	Bladder Campion				G5	SNA	I		I	
<i>Solanum dulcamara</i>	Bittersweet Nightshade				G5T5	SNA	I			
<i>Solidago altissima</i>	Tall Goldenrod				GNR	S5	N		X	
<i>Solidago caesia</i>	Blue-stemmed Goldenrod				G5T5	S5	N			
<i>Solidago canadensis</i>	Canada Goldenrod				G5	S5	N		X	
<i>Solidago flexicaulis</i>	Zigzag Goldenrod				G5	S5	N			
<i>Solidago nemoralis</i> ssp. <i>nemoralis</i>	Grey-stemmed Goldenrod				G5T5	S5	N		X	
<i>Solidago patula</i>	Spreading Goldenrod				G5	S4	N	R-A		5
<i>Solidago rugosa</i>	Rough-stemmed Goldenrod				G5	S5	N			
<i>Sonchus arvensis</i>	Field Sow-thistle				G5T5?	SNA	I		I	
<i>Stachys byzantina</i>	Woolly Hedge-nettle				G5	SNA	I			
<i>Symphoricarpos albus</i>	Thin-leaved Snowberry				G5	S5	N		X	
<i>Symphyotrichum cordifolium</i>	Heart-leaved Aster				G5	S5	N			5
<i>Symphyotrichum ericoides</i> var. <i>ericoides</i>	White Heath Aster				G5	S5	N		X	
<i>Symphyotrichum lanceolatum</i>	Panicled Aster				G5	S5	N		X	
<i>Symphyotrichum lateriflorum</i>	Calico Aster				G5	S5	N			
<i>Symphyotrichum novae-angliae</i>	New England Aster				G5	S5	N			
<i>Symphyotrichum pilosum</i>	Old Field Aster				G5	S5	N			
<i>Symphyotrichum puniceum</i>	Purple-stemmed Aster				G5	S5	N			
<i>Syringa vulgaris</i>	Common Lilac				GNR	SNA	I			

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<i>Tanacetum vulgare</i>	Common Tansy				GNR	SNA	I		I	
<i>Taraxacum officinale</i>	Common Dandelion				GNR	SNA	I		I	
<i>Thalictrum dioicum</i>	Early Meadow-rue				G5	S5	N		X	
<i>Thalictrum pubescens</i>	Tall Meadow-rue				G5	S5	N		R	
<i>Thuja occidentalis</i>	Eastern White Cedar				G5	S5	N		X	
<i>Tilia americana</i>	Basswood				GNR	S5	N			
<i>Toxicodendron radicans</i>	Poison Ivy				G5	S5	N			
<i>Tragopogon pratensis</i>	Meadow Goatsbeard				GNR	SNA	I			
<i>Trifolium pratense</i>	Red Clover				GNR	SNA	I		I	
<i>Trillium grandiflorum</i>	White Trillium				G5	S5	N			
<i>Tsuga canadensis</i>	Eastern Hemlock				GNR	S5	N			
<i>Tussilago farfara</i>	Coltsfoot				GNR	SNA	I			
<i>Typha angustifolia</i>	Narrow-leaved Cattail				GNR	SNA	I		R	
<i>Ulmus americana</i>	White Elm				G5	S5	N		X	
<i>Ulmus pumila</i>	Siberian Elm				GNA	SNA	I			
<i>Urtica dioica ssp. dioica</i>	European Stinging Nettle				G5	SNA	I		X	
<i>Verbascum thapsus</i>	Common Mullein				GNR	SNA	I		I	
<i>Verbena urticifolia</i>	White Vervain				G5	S5	N			
<i>Viburnum lentago</i>	Nannyberry				GNR	S5	N		R	
<i>Viburnum opulus</i>	Cranberry Viburnum				G5	S5	N			
<i>Vicia americana</i>	American Vetch				G5	S5	N		X	
<i>Vincetoxicum rossicum</i>	European Swallowwort				GNR	SNA	I			
<i>Vitis riparia</i>	Riverbank Grape				GNR	S5	N			

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Zanthoxylum americanum	Common Prickly-ash				G4G5	S5	N			

Natural Heritage Information Centre. 2024. Vascular Plant Species List (2024). Downloaded on February 12, 2024.

ESA Status

Species at Risk in Ontario list: The list of species that are classified as species at risk under the Endangered Species Act (2007).

- EXT:Extinct – A species that no longer exists anywhere.
- EXP:Extirpated – A species that no longer exists in the wild in Ontario but still occurs elsewhere.
- END:Endangered – A species facing imminent extinction or extirpation in Ontario which is a candidate for regulation under Ontario's Endangered Species Act (ESA).
- THR:Threatened – A species that is at risk of becoming endangered in Ontario if limiting factors are not reversed.
- SC:Special Concern (formerly Vulnerable) – A species with characteristics that make it sensitive to human activities or natural events.
- NAR:Not at Risk – A species that has been evaluated and found to be not at risk.
- DD:Data Deficient (formerly Indeterminate) – A species for which there is insufficient information for a provincial status recommendation.

COSEWIC Status

Committee on the Status of Endangered Wildlife in Canada status: Species has been assessed by COSEWIC as having status, but status is not necessarily adopted on the official Schedule 1 to SARA.

- 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.
- NAR:Not At Risk – A species that has been evaluated and found to be not at risk of extinction given the current circumstances.
- DD:Data Deficient (formerly Indeterminate) – Available information is insufficient to resolve a species' eligibility for assessment or to permit an assessment of the species' risk of extinction.

SARA Schedule 1 Status

Species at Risk Act Schedule 1 Status: Schedule 1 is the official list of species that are classified as extirpated, endangered, threatened, and of special concern. The Act establishes Schedule 1, as the official list of 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 species are implemented.

- 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 that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.
- SC:Special Concern – A species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.

Global Rank

- GXPresumed Extinct (species)/Eliminated (ecological communities and systems) — Species not located despite intensive searches and virtually no likelihood of rediscovery. Ecological community or system eliminated throughout its range, with no restoration potential.
- GHPossibly Extinct (species)/ Eliminated (ecological communities and systems) — Known from only historical occurrences but still some hope of rediscovery. There is evidence that the species may be extinct or the ecosystem may be eliminated throughout its range, but not enough to state this with certainty.
- G1Critically Imperiled—At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.

- G2 Imperiled—At high risk of extinction or elimination due to very restricted range, very few populations, steep declines, or other factors.
- G3 Vulnerable—At moderate risk of extinction or elimination due to a restricted range, relatively few populations, recent and widespread declines, or other factors.
- G4 Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors.
- G5 Secure—Common; widespread and abundant.

Variant Ranks

- 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).
- GU: Unrankable – Currently unrankable due to lack of information or due to substantially conflicting information about status or trends. NOTE: Whenever possible (when the range of uncertainty is three consecutive ranks or less), a range rank (e.g., G2G3) should be used to delineate the limits (range) of uncertainty.
- 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.

Rank Qualifiers

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

Subnational Rank

- S-Rank: 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).
- SX: Presumed Extirpated – Species or community is believed to be extirpated from the nation or state/province. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered.
- SH: Possibly Extirpated (Historical) – Species or community occurred historically in the nation or state/province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years. A species or community could become NH or SH without such a 20-40 year delay if the only known occurrences in a nation or state/province were destroyed or if it had been extensively and unsuccessfully looked for. The NH or SH rank is reserved for species or communities for which some effort has been made to relocate occurrences, rather than simply using this status for all elements not known from verified extant occurrences.
- SE: Species is considered exotic in Ontario
- SNR: Unranked – Nation of state/province conservation status not yet assessed.
- SU: Unrankable – Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
- SNA: Not Applicable – A conservation status rank is not applicable because the species is not a suitable target for conservation activities.

Native?:

- N: Native to Ontario. Species does not have exotic status under NHIC database.
- I: Introduced to Ontario. Species has exotic status rank under NHIC database.

¹Wellington County Plant List

Frank, R and A. Anderson. 2009. The Flora of Wellington County. Wellington County Historical Society.

- R1: Most rare or growing on only 1-3 sites.
- R2: Rare and growing on 4-6 sites.

R3: Uncommon and growing on 7-10 sites.

²Significant Plant List for Wellington County (Dogan & Associates 2009)

Dogan & Associates 2009. Significant Plant List for Wellington County. City of Guelph Natural Heritage Study

Codes are defined as follows:

- R- A: Included based on “rare” status (i.e. occurrence at between 1 and 10 natural sites in the County) in the Flora of Wellington County (Anderson and Frank 2004, unpublished) and subsequent revisions by A. Anderson over 2005-2008).
- R-B: Added as a plant record from post-1990 environmental studies within Guelph with global and /or provincial significance.
- R-C: Added based on records provided by Mike Oldham (NHIC) for Wellington County in 2005, verification of records in OAC herbarium (Jan.-Feb. 2008) and supplementary review by Mike Oldham Dec. 2007 - Feb. 2008.
- R-D: New record for Wellington County (observed during field work conducted by Dogan & Associates 2005-2006).

³City of Guelph

City of Guelph. 2012. Locally Significant Species List: Significant Plant List (<http://guelph.ca/wp-content/uploads/LocallySignificantSpeciesListCityofGuelphJune2014.pdf>).

- 1 Provincially Threatened and Endangered
- 2 Natural Heritage Information Centre (MNR) S1, S2, S3
- 3 Globally Significant (G1, G2, G3) and/or Federally Endangered or Threatened (but not also #1)
- 4 Federally or Provincially Special Concern (COSEWIC or COSSARO)
- 5 Locally Significant as per Significant Plant Lists (not also meeting any of the above)



BURNSIDE

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Appendix F

Significant Wildlife Habitat Assessment for Ecoregion 6E

Significant Wildlife Habitat Screening – Ecoregion 6E Criteria (2015)

Habitat	CANDIDATE - Significant Wildlife Habitat		CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Wildlife Species	Defining Criteria	Presence of Candidate or Confirmed Habitat on the ROW and/or Study Area?
Table 1.1: Seasonal Concentration Areas of Animals					
Waterfowl Stopover & Staging Areas (Terrestrial) Rationale: Habitat important to migrating waterfowl.	CUM1 CUT1 - Plus evidence of annual spring flooding from melt water or run-off within these ecosites.	Fields with sheet water during Spring (mid-March to May). - Fields flooding during spring melt and run-off provide important invertebrate foraging habitat for migrating waterfowl. - Agricultural fields with waste grains are commonly used by waterfowl, these are not considered SWH unless they have spring sheet water available.	American Black Duck Wood Duck Green-winged Teal Blue-winged Teal Mallard Northern Pintail Northern Shoveler American Wigeon Gadwall	Studies carried out and verified presence of an annual concentration of any listed species, evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. - Any mixed species aggregations of 100 or more individuals required. - The flooded field ecosite habitat plus a 100-300 m radius area, dependent on local site conditions and adjacent land use is the SWH. - Annual use of habitat is documented from information sources or field studies (annual use can be based on studies or determined by past surveys with species numbers and dates). SWHMiST Index #7 provides development effects and mitigation measures.	No potential. Suitable habitats absent that could support large aggregations of waterfowl within the Study Area. The only suitable habitats with potential to support this feature occur in association with proposed Guelph Innovation District (GID) Lands or proposed City of Guelph Operations Campus. The presene of this feature was not identified during the course of multi-season inventories completed by NRSI or AECOM respectively.

Habitat	CANDIDATE - Significant Wildlife Habitat		CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Wildlife Species	Defining Criteria	Presence of Candidate or Confirmed Habitat on the ROW and/or Study Area?
Waterfowl Stopover & Staging Areas (Aquatic) Rationale: Important for local and migrant waterfowl populations during the spring or fall migration or both periods combined. Sites identified are usually only one of a few in the eco-district.	MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7	- Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. Sewage treatment ponds and SWM ponds do not qualify as a SWH, however a reservoir managed as a large wetland or pond/lake does qualify. - These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water).	Canada Goose Cackling Goose Snow Goose American Black Duck Northern Pintail Northern Shoveler American Wigeon Gadwall Green-winged Teal Blue-winged Teal Hooded Merganser Common Merganser Lesser Scaup Greater Scaup Long-tailed Duck Surf Scoter White-winged Scoter Black Scoter Ring-necked duck Common Goldeneye Bufflehead Redhead Ruddy Duck Red-breasted Merganser Brant Canvasback Ruddy Duck	Studies carried out & verified presence of: - Aggregations of 100 or more of listed species for seven days, results in >700 waterfowl use days. - Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH. - The combined area of the Ecological Land Classification (ELC) ecosites and a 100 m radius area is the SWH. - Wetland area and shorelines associated with sites identified within the SWHTG Appendix K are SWH. - Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. - Annual Use of Habitat is Documented from Information Sources or Field Studies (Annual can be based on completed studies or determined from past surveys with species numbers and dates recorded). SWHMiST Index #7 provides development effects and mitigation measures.	Moderate potential. Large aggregations of waterfowl may be supported along the Eramosa River. This feature was also identified as being possibly supported along the Eramosa River bt AECOM and NRSI.

Habitat	CANDIDATE - Significant Wildlife Habitat		CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Wildlife Species	Defining Criteria	Presence of Candidate or Confirmed Habitat on the ROW and/or Study Area?
Shorebird Migratory Stopover Area Rationale: High quality shorebird stopover habitat is extremely rare and typically has a long history of use.	BBO1 BBO2 BBS1 BBS2 BBT1 BBT2 SDO1 SDS2 SDT1 MAM1 MAM2 MAM3 MAM4 MAM5	- Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats. - Great Lakes coastal shorelines, including groynes and other forms of armour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to October. - Sewage treatment ponds and storm water ponds do not qualify as a SWH.	Greater Yellowlegs Lesser Yellowlegs Marbled Godwit Hudsonian Godwit Black-bellied Plover American Golden-Plover Semipalmated Plover Solitary Sandpiper Spotted Sandpiper Semipalmated Sandpiper Pectoral Sandpiper White-rumped Sandpiper Baird’s Sandpiper Least Sandpiper Purple Sandpiper Stilt Sandpiper Short-billed Dowitcher Red-necked Phalarope Whimbrel Ruddy Turnstone Sanderling Dunlin	Studies confirming: - Presence of three or more of listed species and >1,000 shorebird use days during spring or fall migration period (shorebird use days are the accumulated number of shorebirds counted per day over the course of the fall or spring migration period). - Whimbrel stop briefly (<24 hrs.) during spring migration, any site with >100 Whimbrel used for three years or more is significant. - The area of significant shorebird habitat includes the mapped ELC shoreline ecosites plus a 100 m radius area. - Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. SWHMiST Index #8 provides development effects and mitigation measures.	No potential. Suitable habitats absent that could support large aggregations of shorebirds.

Habitat	CANDIDATE - Significant Wildlife Habitat		CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Wildlife Species	Defining Criteria	Presence of Candidate or Confirmed Habitat on the ROW and/or Study Area?
Raptor Wintering Area Rationale: Sites used by multiple species, a high number of individuals and used annually are most significant.	<u>Hawks/Owls:</u> Combination of ELC Community Series; need to have present one Community Series from each land class <u>Forest:</u> FOD FOM FOC <u>Upland:</u> CUM CUT CUS CUW <u>Bald Eagle:</u> Forest community Series: FOD FOM FOC SWD SWM or SWC on shoreline areas adjacent to large rivers or adjacent to lakes with open water (hunting area).	• The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors. • Raptor wintering sites (hawk/owl) need to be >20 ha, with a combination of forest and upland. • Least disturbed sites, idle/fallow or lightly grazed field/meadow (>15ha) with adjacent woodlands. • Field area of the habitat is to be wind swept with limited snow depth or accumulation. • Eagle sites have open water, large trees and snags available for roosting.	Rough-legged Hawk Red-tailed Hawk Northern Harrier American Kestrel Snowy Owl Special Concern: Short-eared Owl Bald Eagle	Studies confirm the use of these habitats by: • One or more Short-eared Owls or; one or more Bald Eagle or; At least ten individuals and two of the listed hawk/owl species. • To be significant a site must be used regularly (3 in 5 years) for a minimum of 20 days by the above number of birds. • The habitat area for an Eagle winter site is the shoreline forest ecosites directly adjacent to the prime hunting area. • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects.” • SWHMiST Index #10 and #11 provides development effects and mitigation measures.	No potential. Suitable habitats absent that could support large aggregations of raptors. Suitably large forested communities are absent.

Habitat	CANDIDATE - Significant Wildlife Habitat		CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Wildlife Species	Defining Criteria	Presence of Candidate or Confirmed Habitat on the ROW and/or Study Area?
Bat Hibernacula Rationale: Bat hibernacula are rare habitats in all Ontario landscapes.	Bat Hibernacula may be found in these ecosites: CCR1 CCR2 CCA1 CCA2 (Note: buildings are not considered to be SWH)	• Hibernacula may be found in caves, mine shafts, underground foundations and Karsts. • Active mine sites should not be considered as SWH. • The locations of bat hibernacula are relatively poorly known.	Big Brown Bat Tri-coloured Bat	• All sites with confirmed hibernating bats are SWH. • The habitat area includes a 200 m radius around the entrance of the hibernaculum for most development types and 1,000 m for wind farms. • Studies are to be conducted during the peak swarming period (August to September). Surveys should be conducted following methods outlined in the “Bats and Bat Habitats: Guidelines for Wind Power Projects”. • SWHMiST Index #1 provides development effects and mitigation measures.	No potential. No known bat hibernacula within the Study Area.
Bat Maternity Colonies Rationale: Known locations of forested bat maternity colonies are extremely rare in all Ontario landscapes.	Maternity colonies considered SWH are found in forested ecosites. All ELC ecosites in ELC Community Series: FOD FOM SWD SWM	• Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered to be SWH). • Maternity roosts are not found in caves and mines in Ontario. • Maternity colonies located in Mature deciduous or mixed forest stands with >10/ha large diameter (>25 cm dbh) wildlife trees. • Female Bats prefer wildlife tree (snags) in early stages of decay, class 1-3 or class 1 or 2. • Silver-haired Bats prefer older mixed or deciduous forest and form maternity colonies in tree cavities and small hollows. Older forest areas with at least 21 snags/ha are preferred.	Big Brown Bat Silver-haired Bat	• Maternity Colonies with confirmed use by: – >10 Big Brown Bats – >5 Adult Female Silver- haired Bats • The area of the habitat includes the entire woodland, or a forest stand ELC ecosite or an ecoelement containing the maternity colonies. • Evaluation methods for maternity colonies should be conducted following methods outlined in the “Bats and Bat Habitats: Guidelines for Wind Power Projects”. • SWHMiST Index #12 provides development effects and mitigation measures.	Moderate potential. The FOM, FOD, and SWM communities may support bat maternity colonies.

Habitat	CANDIDATE - Significant Wildlife Habitat		CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Wildlife Species	Defining Criteria	Presence of Candidate or Confirmed Habitat on the ROW and/or Study Area?
Turtle Wintering Areas Rationale: Generally, sites are the only known sites in the area. Sites with the highest number of individuals are most significant.	Snapping and Midland Painted Turtles. ELC Community Classes: SW MA OA and SA ELC Community Series: FEO and BOO For Northern Map Turtle: Open water areas such as deeper rivers or streams and lakes with current can also be used as over-wintering habitat.	- For most turtles, wintering areas are in the same general area as their core habitat. Water must be deep enough not to freeze and have soft mud substrates. - Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen. - Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH.	Midland Painted Turtle Special Concern: Northern Map Turtle Snapping Turtle	- Presence of five over-wintering Midland Painted Turtles is significant. - One or more Northern Map Turtle or Snapping Turtle over-wintering within a wetland is significant. - The mapped ELC ecosite area with the over wintering turtles is the SWH. If the hibernation site is within a stream or river, the deep-water pool where the turtles are over wintering is the SWH. - Over wintering areas may be identified by searching for congregations (Basking Areas) of turtles on warm, sunny days during the fall (September-October) or spring (March–May). - Congregation of turtles is more common where wintering areas are limited and therefore significant. SWHMiST Index #28 provides development effects and mitigation measures for turtle wintering habitat.	NRSI has confirmed that Turtle Wintering Areas are supported within the Eramosa River. The wetland communities within the Study Area lack sufficiently deep standing water and are unlikely to support overwintering turtles However, no turtles were observed during site investigations in 2025.

Habitat	CANDIDATE - Significant Wildlife Habitat		CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Wildlife Species	Defining Criteria	Presence of Candidate or Confirmed Habitat on the ROW and/or Study Area?
Reptile Hibernaculum Rationale: Generally, sites are the only known sites in the area. Sites with the highest number of individuals are most significant.	For all snakes, habitat may be found in any ecosite other than very wet ones. Talus, Rock Barren, Crevice, Cave, and Alvar sites may be directly related to these habitats. Observations or congregations of snakes on sunny warm days in the spring or fall is a good indicator. For Five-lined Skink, ELC Community Series of FOD and FOM and ecosites: FOC1 and FOC3.	- For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural or naturalized locations. The existence of features that go below frost line; such as rock piles or slopes, old stone fences, and abandoned crumbling foundations assist in identifying candidate SWH. - Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line. - Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock groundcover. - Five-lined Skink prefer mixed forests with rock outcrop openings providing cover rock overlaying granite bedrock with fissures.	Snakes: Eastern Gartersnake Northern Watersnake Northern Red-bellied Snake Northern Brownsnake Smooth Green Snake Northern Ring-necked Snake Special Concern: Milksnake Eastern Ribbonsnake Lizard: Special Concern: (Southern Shield population): Five-lined Skink	Studies confirming: - Presence of snake hibernacula used by a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. - Congregations of a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. near potential hibernacula (e.g., foundation or rocky slope) on sunny warm days in Spring (April/May) and Fall (September/October). Note: If there are Special Concern Species present, then site is SWH. Note: Sites for hibernation possess specific habitat parameters (e.g., temperature, humidity, etc.) and consequently are used annually, often by many of the same individuals of a local population (i.e., strong hibernation site fidelity). Other critical life processes (e.g., mating) often take place near hibernacula. The feature in which the hibernacula is located plus a 30 m radius area is the SWH. SWHMiST Index #13 provides development effects and mitigation measures for snake hibernacula. - Presence of any active hibernaculum for Skink is significant. - SWHMiST Index #37 provides development effects and mitigation measures for five-lined Skink wintering habitat.	No potential. No known reptile hibernacula features identified within the exisiting ROW.

Habitat	CANDIDATE - Significant Wildlife Habitat		CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Wildlife Species	Defining Criteria	Presence of Candidate or Confirmed Habitat on the ROW and/or Study Area?
Colonially - Nesting Bird Breeding Habitat (Bank & Cliff) Rationale: Historical use and number of nests in a colony make this habitat significant. An identified colony can be very important to local populations. All swallow population are declining in Ontario.	Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles. Cliff faces, bridge abutments, silos, barns. Habitat found in the following ecosites: CUM1 CUT1 CUS1 BLO1 BLS1 BLT1 CLO1 CLS1 CLT1	- Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed permitted aggregate area. - Does not include man-made structures (bridges or buildings) or recently (two years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles. - Does not include a licensed/permitted Mineral Aggregate Operation.	Cliff Swallow Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies)	Studies confirming: - Presence of one or more nesting sites with eight or more cliff swallow pairs and/or rough-winged swallow pairs during the breeding season. - A colony identified as SWH will include a 50 m radius habitat area from the peripheral nests. - Field surveys to observe and count swallow nests are to be completed during the breeding season. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. SWHMiST Index #4 provides development effects and mitigation measures.	Confirmed absent. Only four Cliff Swallows nests were documented during the course of breeding bird surveys in association with the Road bridge. Only a single Northern Rough-winged Swallow was documented in association with the proposed bus depot.
Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs) Rationale: Large colonies are important to local bird population, typically sites are only known colony in area and are used annually.	SWM2 SWM3 SWM5 SWM6 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7 FET1	- Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used. - Most nests in trees are 11 to 15 m from ground, near the top of the tree.	Great Blue Heron Black-crowned Night-Heron Great Egret Green Heron	Studies confirming: - Presence of two or more active nests of Great Blue Heron or other listed species. - The habitat extends from the edge of the colony and a minimum 300 m radius or extent of the Forest ecosite containing the colony or any island <15.0 ha with a colony is the SWH. - Confirmation of active heronries are to be achieved through site visits conducted during the nesting season (April to August) or by evidence such as the presence of fresh guano, dead young and/or eggshells. SWHMiST Index #5 provides development effects and mitigation measures.	No potential. Although swamp communities are present, they are small and scattered, and the Study Area is neither near lakes nor located on an island or peninsula. None of the listed wildlife species were observed during breeding bird surveys in 2025.

Habitat	CANDIDATE - Significant Wildlife Habitat		CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Wildlife Species	Defining Criteria	Presence of Candidate or Confirmed Habitat on the ROW and/or Study Area?
Colonially - Nesting Bird Breeding Habitat (Ground) Rationale: Colonies are important to local bird population, typically sites are only known colony in area and are used annually.	Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1:50,000 NTS map). Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird). MAM1 – 6 MAS1 – 3 CUM CUT CUS	- Nesting colonies of gulls and terns are on islands or peninsulas associated with open water or in marshy areas. - Brewers Blackbird colonies are found loosely on the ground in low bushes in close proximity to streams and irrigation ditches within farmlands.	Herring Gull Great Black-backed Gull Little Gull Ring-billed Gull Common Tern Caspian Tern Brewer's Blackbird	Studies confirming: - Presence of >25 active nests for Herring Gulls or Ring-billed Gulls, >5 active nests for Common Tern or >2 active nests for Caspian Tern. - Presence of five or more pairs for Brewer's Blackbird. - Any active nesting colony of one or more Little Gull, and Great Black-backed Gull is significant. - The edge of the colony and a minimum 150 m radius area of habitat, or the extent of the ELC ecosites containing the colony or any island <3.0 ha with a colony is the SWH. - Studies would be done during May/June when actively nesting. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". SWHMiST Index #6 provides development effects and mitigation measures.	No potential. The Study Area is not located on an island or peninsula. None of the listed species were recorded during any surveys completed in 2025. Breeding records for Brewer's Blackbird are mainly restricted to the north shore of Lake Huron and Georgian Bay, as well as Sudbury/Manitoulin Island and Northwestern Ontario; no breeding records currently exist for Southern and Eastern Ontario.

Habitat	CANDIDATE - Significant Wildlife Habitat		CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Wildlife Species	Defining Criteria	Presence of Candidate or Confirmed Habitat on the ROW and/or Study Area?
Migratory Butterfly Stopover Areas Rationale: Butterfly stopover areas are extremely rare habitats and are biologically important for butterfly species that migrate south for the winter.	Combination of ELC Community Series; need to have present one Community Series from each land class. <u>Field:</u> CUM CUT CUS <u>Forest:</u> FOC FOD FOM CUP Anecdotally, a candidate site for butterfly stopover will have a history of butterflies being observed.	- A butterfly stopover area will be a minimum of 10 ha in size with a combination of field and forest habitat present and will be located within 5 km of Lake Erie or Ontario. - The habitat is typically a combination of field and forest and provides the butterflies with a location to rest prior to their long migration south. - The habitat should not be disturbed, fields/meadows with an abundance of preferred nectar plants and woodland edge providing shelter are requirements for this habitat. - Staging areas usually provide protection from the elements and are often spits of land or areas with the shortest distance to cross the Great Lakes.	Painted Lady Red Admiral <u>Special Concern</u> Monarch	Studies confirm: - The presence of Monarch Use Days (MUD) during fall migration (August/October). MUD is based on the number of days a site is used by Monarchs, multiplied by the number of individuals using the site. Numbers of butterflies can range from 100-500/day, significant variation can occur between years and multiple years of sampling should occur. - Observational studies are to be completed and need to be done frequently during the migration period to estimate MUD. - MUD of >5,000 or >3,000 with the presence of Painted Ladies or Red Admiral’s is to be considered significant. SWHMiST Index #16 provides development effects and mitigation measures.	No potential. The Study Area is not located within 5 km of Lake Erie or Ontario.
Landbird Migratory Stopover Areas Rationale: Sites with a high diversity of species as well as high numbers are most significant.	All ecosites associated with these ELC Community Series: FOC FOM FOD SWC SWM SWD	- Woodlots >10 ha in size and within 5 km of Lake Ontario. - If woodlands are rare in an area of shoreline, woodland fragments 2-5 ha can be considered for this habitat. - If multiple woodlands are located along the shoreline those Woodlands <2 km from Lake Ontario are more significant. - Sites have a variety of habitats; forest, grassland and wetland complexes. - The largest sites are more significant. - Woodlots and forest fragments are important habitats to migrating birds, these features located along the shore and located within 5 km of Lake Ontario are Candidate SWH.	All migratory songbirds. Canadian Wildlife Service Ontario website: http://www.ec.gc.ca/nature/default.asp?lang=En&n=421B7A9D-1 All migrant raptors species: <i>Ontario Ministry of Natural Resources: Fish and Wildlife Conservation Act, 1997. Schedule 7: Specially Protected Birds (Raptors)</i>	Studies confirm: - Use of the habitat by >200 birds/day and with >35 spp with at least 10 bird spp. recorded on at least five different survey dates. This abundance and diversity of migrant bird species is considered above average and significant. - Studies should be completed during spring (April/May) and fall (August/October) migration using standardized assessment techniques. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. SWHMiST Index #9 provides development effects and mitigation measures.	No potential. The Study Area is not located within 5 km of Lake Erie or Ontario.

Habitat	CANDIDATE - Significant Wildlife Habitat		CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Wildlife Species	Defining Criteria	Presence of Candidate or Confirmed Habitat on the ROW and/or Study Area?
Deer Yarding Areas <u>Rationale:</u> Winter habitat for deer is considered to be the main limiting factor for northern deer populations. In winter, deer congregate in “yards” to survive severe winter conditions. Deer yards typically have a long history of annual use by deer, yards typically represent 10-15% of an areas summer range.	Note: MNRF to determine this habitat. ELC Community Series providing a thermal cover component for a deer yard would include: FOM FOC SWM SWC Or these ELC ecosites: CUP2 CUP3 FOD3 CUT	- Deer yarding areas or winter concentration areas (yards) are areas deer move to in response to the onset of winter snow and cold. This is a behavioural response and deer will establish traditional use areas. The yard is composed of two areas referred to as Stratum I and Stratum II. Stratum II covers the entire winter yard area and is usually a mixed or deciduous forest with plenty of browse available for food. Agricultural lands can also be included in this area. Deer move to these areas in early winter and generally, when snow depths reach 20 cm, most of the deer will have moved here. If the snow is light and fluffy, deer may continue to use this area until 30 cm snow depth. In mild winters, deer may remain in the Stratum II area the entire winter. - The Core of a deer yard (Stratum I) is located within the Stratum II area and is critical for deer survival in areas where winters become severe. It is primarily composed of coniferous trees (pine, hemlock, cedar, spruce) with a canopy cover of more than 60%. - MNRF determines deer yards following methods outlined in “Selected Wildlife and Habitat Features: Inventory Manual”. - Woodlots with high densities of deer due to artificial feeding are not significant.	White-tailed Deer	No Studies Required: - Snow depth and temperature are the greatest influence on deer use of winter yards. Snow depths > 40 cm for more than 60 days in a typically winter are minimum criteria for a deer yard to be considered as SWH. - Deer Yards are mapped by MNRF District offices. Locations of Core or Stratum 1 and Stratum 2 Deer yards considered significant by MNRF will be available at local MNRF offices or via Land Information Ontario (LIO). - Field investigations that record deer tracks in winter are done to confirm use (best done from an aircraft). Preferably, this is done over a series of winters to establish the boundary of the Stratum I and Stratum II yard in an "average" winter. MNRF will complete these field investigations. - If a SWH is determined for Deer Wintering Area or if a proposed development is within Stratum II yarding area, then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. - SWHMiST Index #2 provides development effects and mitigation measures.	No potential. No Deer Winter Congregation Areas are mapped by the MNR in the Study Area.

Habitat	CANDIDATE - Significant Wildlife Habitat		CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Wildlife Species	Defining Criteria	Presence of Candidate or Confirmed Habitat on the ROW and/or Study Area?
Deer Winter Congregation Areas Rationale: Deer movement during winter in the southern areas of Ecoregion 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands to reduce or avoid the impacts of winter conditions.	All Forested ecosites with these ELC Community Series: FOC FOM FOD SWC SWM SWD Conifer plantations much smaller than 50 ha may also be used.	- Woodlots will typically be >100 ha in size. Woodlots <100 ha may be considered as significant based on MNRF studies or assessment. - Deer movement during winter in the southern areas of Ecoregion 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands. - If deer are constrained by snow depth refer to the Deer Yarding Area habitat within Table 1.1 of this Schedule. - Large woodlots >100 ha and up to 1,500 ha are known to be used annually by densities of deer that range from 0.1-1.5 deer/ha. - Woodlots with high densities of deer due to artificial feeding are not significant.	White-tailed Deer	Studies confirm: - Deer management is an MNRF responsibility, deer winter congregation areas considered significant will be mapped by MNRF. - Use of the woodlot by white- tailed deer will be determined by MNRF, all woodlots exceeding the area criteria are significant, unless determined not to be significant by MNRF. - Studies should be completed during winter (January/February) when >20 cm of snow is on the ground using aerial survey techniques, ground or road surveys. or a pellet count deer density survey. - If a SWH is determined for Deer Wintering Area or if a proposed development is within Stratum II yarding area, then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. SWHMiST Index #2 provides development effects and mitigation measures.	No potential. No Deer Winter Congregation Areas are mapped by the MNR in the Study Area.
Table 1.2.1: Rare Vegetation Communities					
Cliffs and Talus Slopes Rationale: Cliffs and Talus Slopes are extremely rare habitats in Ontario.	Any ELC ecosite within Community Series: TAO CLO TAS CLS TAT CLT	- A Cliff is vertical to near vertical bedrock >3 m in height. - A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris.		- Most cliff and talus slopes occur along the Niagara Escarpment. - Confirm any ELC Vegetation Type for Cliffs or Talus Slopes. SWHMiST Index #21 provides development effects and mitigation measures.	Confirmed present. The following communities were identified by Burnside: Sugar Maple – Ironwood – White Ash Treed Calcareous Cliff Type (CLT1-2) White Cedar Treed Calcareous Cliff Type (CLT1-1) was also identified within the Study Area by NRSI in association with the WODM5 community and was confirmed present by Burnside. A CLT1-1 inclusion was also identified in association with the WOD community by AECOM.

Habitat	CANDIDATE - Significant Wildlife Habitat		CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Wildlife Species	Defining Criteria	Presence of Candidate or Confirmed Habitat on the ROW and/or Study Area?
Sand Barren Rationale: Sand barrens are rare in Ontario and support rare species. Most Sand Barrens have been lost due to cottage development and forestry.	ELC ecosites: SBO1 SBS1 SBT1 Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always ≤ 60%.	Sand Barrens typically are exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion. Usually located within other types of natural habitat such as forest or savannah. Vegetation can vary from patchy and barren to tree covered, but less than 60%.		- A sand barren area >0.5 ha in size. - Confirm any ELC Vegetation Type for Sand Barrens. - Site must not be dominated by exotic or introduced species (<50% vegetative cover is exotic sp.). SWHMiST Index #20 provides development effects and mitigation measures.	No potential. Habitat criteria for SWH is absent.

Habitat	CANDIDATE - Significant Wildlife Habitat		CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Wildlife Species	Defining Criteria	Presence of Candidate or Confirmed Habitat on the ROW and/or Study Area?
Alvar Rationale: Alvars are extremely rare habitats in Ecoregion 6E.	ALO1 ALS1 ALT1 FOC1 FOC2 CUM2 CUS2 CUT2-1 CUW2 Five Alvar Indicator Species: <i>Carex crawei</i> <i>Panicum philadelphicum</i> <i>Eleocharis compressa</i> <i>Scutellaria parvula</i> <i>Trichostema brachiatum</i> These indicator species are very specific to Alvars within Ecoregion 6E.	• An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. The hydrology of alvars is complex, with alternating periods of inundation and drought. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plants. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animal species. Vegetation cover varies from patchy to barren with a less than 60% tree cover. • Alvar is particularly rare in Ecoregion 6E where the only known sites are found in the western islands of Lake Erie.		Field studies that identify: • An Alvar site > 0.5 ha in size. • Four of the five Alvar Indicator Species at a Candidate Alvar site is Significant. • Site must not be dominated by exotic or introduced species (<50% vegetative cover is exotic sp.). • The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses. • SWHMiST Index #17 provides development effects and mitigation measures.	No potential. Habitat criteria for SWH is absent.

Habitat	CANDIDATE - Significant Wildlife Habitat		CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Wildlife Species	Defining Criteria	Presence of Candidate or Confirmed Habitat on the ROW and/or Study Area?
Old Growth Forest Rationale: Due to historic logging practices and land clearance for agriculture, old growth forest is rare in the Ecoregion 6E.	Forest Community Series: FOD FOC FOM SWD SWC SWM	Old Growth forests are characterized by heavy mortality or turnover of over-storey trees resulting in a mosaic of gaps that encourage development of a multi-layered canopy and an abundance of snags and downed woody debris.		Field Studies will determine: • If dominant trees species are >140 years old, then the area containing these trees is SWH. • The forested area containing the old growth characteristics will have experienced no recognizable forestry activities (cut stumps will not be present). • The area of forest ecosites combined or an eco-element within an ecosite that contains the old growth characteristics is the SWH. • Determine ELC vegetation types for the forest area containing the old growth characteristics. • SWHMiST Index #23 provides development effects and mitigation measures.	No potential. Habitat criteria for SWH is absent.
Savannah Rationale: Savannahs are extremely rare habitats in Ontario.	TPS1 TPS2 TPW1 TPW2 CUS2	A Savannah is a tallgrass prairie habitat that has tree cover between 25–60%.		Field studies confirm: • No minimum size to site. Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH. • One or more of the Savannah indicator species listed in Appendix N should be present. Note: Savannah plant spp. list from Ecoregion 6E should be used. • Area of the ELC ecosite is the SWH. • Site must not be dominated by exotic or introduced species (<50% vegetative cover is exotic sp.). • SWHMiST Index #18 provides development effects and mitigation measures.	No potential. Habitat criteria for SWH is absent.
Tallgrass Prairie Rationale: Tallgrass Prairies are extremely rare habitats in Ontario.	TPO1 TPO2	• No minimum size to site. Site must be restored or a natural site. Remnant sites such as railway Right of Ways (ROW) are not considered to be SWH. • A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has <25% tree cover.		Field studies confirm: • One or more of the Prairie indicator species listed in Appendix N should be present. Note: Prairie plant spp. list from Ecoregion 6E should be used. • Area of the ELC ecosite is the SWH. • Site must not be dominated by exotic or introduced species (<50% vegetative cover is exotic sp.). • SWHMiST Index #19 provides development effects and mitigation measures.	No potential. Habitat criteria for SWH is absent.

Habitat	CANDIDATE - Significant Wildlife Habitat		CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Wildlife Species	Defining Criteria	Presence of Candidate or Confirmed Habitat on the ROW and/or Study Area?
Other Rare Vegetation Communities Rationale: Plant communities that often contain rare species which depend on the habitat for survival.	- Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG. - Any ELC ecosite Code that has a possible ELC Vegetation Type that is Provincially Rare is Candidate SWH.	Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps.		- ELC ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in Appendix M. - The MNRF/Natural Heritage Information Centre (NHIC) will have up to date listing for rare vegetation communities. Field studies should confirm: - If an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of SWHTG. - Area of the ELC Vegetation Type polygon is the SWH. SWHMiST Index #37 provides development effects and mitigation measures.	No potential. The Natural Heritage Information Centre (NHIC) does not identify any rare plant communities within the general site vicinity. No rare plant communities were identified during field investigations in 2025.
Table 1.2.2: Specialized Habitats for Wildlife considered Significant Wildlife Habitat					
Waterfowl Nesting Area Rationale: Important to local waterfowl populations, sites with greatest number of species and highest number of individuals are significant.	All upland habitats located adjacent to these wetland ELC ecosites are Candidate SWH: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SWT1 SWT2 SWD1 SWD2 SWD3 SWD4 Note: includes adjacency to Provincially Significant Wetlands (PSW).	- A waterfowl nesting area extends 120 m from a wetland (> 0.5 ha) or a wetland (>0.5ha) and any small wetlands (0.5ha) within 120 m or a cluster of 3 or more small (<0.5 ha) wetlands within 120 m of each individual wetland where waterfowl nesting is known to occur. - Upland areas should be at least 120 m wide so that predators such as racoons, skunks, and foxes have difficulty finding nests. - Wood Ducks and Hooded Mergansers utilize large diameter trees (>40 cm dbh) in woodlands for cavity nest sites.	American Black Duck Northern Pintail Northern Shoveler Gadwall Blue-winged Teal Green-winged Teal Wood Duck Hooded Merganser Mallard	Studies confirmed: - Presence of 3 or more nesting pairs for listed species excluding Mallards, or; - Presence of 10 or more nesting pairs for listed species including Mallards. - Any active nesting site of an American Black Duck is considered significant. - Nesting studies should be completed during the spring breeding season (April - June). Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. - A field study confirming waterfowl nesting habitat will determine the boundary of the waterfowl nesting habitat for the SWH, this may be greater or less than 120 m from the wetland and will provide enough habitat for waterfowl to successfully nest. SWHMiST Index #25 provides development effects and mitigation measures.	No potential. Suitable habitats absent that could support large aggregations of nesting waterfowl. Mallard was the only listed species recorded during any surveys on the subject lands in 2025. Candidate habitat present on the adjacent lands east of Stone Road associated with PSWs.

Habitat	CANDIDATE - Significant Wildlife Habitat		CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Wildlife Species	Defining Criteria	Presence of Candidate or Confirmed Habitat on the ROW and/or Study Area?
Bald Eagle & Osprey Nesting, Foraging & Perching Habitat Rationale: Nest sites are fairly uncommon in Eco-region 6E and are used annually by these species. Many suitable nesting locations may be lost due to increasing shoreline development pressures and scarcity of habitat.	ELC Forest Community Series: FOD FOM FOC SWD SWM and SWC (directly adjacent to riparian areas – rivers, lakes, ponds and wetlands.	- Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water. - Osprey nests are usually at the top of a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree's canopy. - Nests located on man-made objects are not to be included as SWH (e.g., telephone poles and constructed nesting platforms).	Osprey Special Concern Bald Eagle	Studies confirm the use of these nests by: - One or more active Osprey or Bald Eagle nests in an area. - Some species have more than one nest in a given area and priority is given to the primary nest with alternate nests included within the area of the SWH. - For an Osprey, the active nest and a 300 m radius around the nest or the contiguous woodland stand is the SWH, maintaining undisturbed shorelines with large trees within this area is important. - For a Bald Eagle the active nest and a 400-800 m radius around the nest is the SWH. Area of the habitat from 400-800 m is dependent on-site lines from the nest to the development and inclusion of perching and foraging habitat. - To be significant a site must be used annually. When found inactive, the site must be known to be inactive for >3 years or suspected of not being used for >5 years before being considered not significant. - Observational studies to determine nest site use, perching sites and foraging areas need to be done from mid-March to mid-August. - Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. SWHMiST Index #26 provides development effects and mitigation measures.	Candidate habitat is present in the Study Area, associated with forested shorelines along the Eramosa River. No nests were observed in the Study Area and Neither Bald Eagle or Osprey were recorded during any breeding bird surveys or other field surveys in 2025.

Habitat	CANDIDATE - Significant Wildlife Habitat		CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Wildlife Species	Defining Criteria	Presence of Candidate or Confirmed Habitat on the ROW and/or Study Area?
Woodland Raptor Nesting Habitat Rationale: Nests sites for these species are rarely identified; these are area sensitive habitats and are often used annually by these species.	May be found in all forested ELC ecosites. May also be found in: SWC SWM SWD and CUP3	- All natural or conifer plantation woodland/forest stands >30 ha with >10ha of interior habitat. Interior habitat determined with a 200 m buffer. - Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees. Species such as Coopers Hawk nest along forest edges sometimes on peninsulas or small off-shore islands. - In disturbed sites, nests may be used again, or a new nest will be in close proximity to old nest.	Northern Goshawk Cooper’s Hawk Sharp-shinned Hawk Red-shouldered Hawk Barred Owl Broad-winged Hawk	Studies confirm: - Presence of one or more active nests from species list is considered significant. - Red-shouldered Hawk and Northern Goshawk – A 400 m radius around the nest or 28 ha area of habitat is the SWH (the 28 ha habitat area would be applied where optimal habitat is irregularly shaped around the nest). - Barred Owl – A 200 m radius around the nest is the SWH. - Broad-winged Hawk and Coopers Hawk– A 100 m radius around the nest is the SWH. - Sharp-Shinned Hawk – A 50 m radius around the nest is the SWH. - Conduct field investigations from mid-March to end of May. The use of call broadcasts can help in locating territorial (courting/nesting) raptors and facilitate the discovery of nests by narrowing down the search area. SWHMiST Index #27 provides development effects and mitigation measures.	No potential. Suitable habitats absent that could support raptor nesting. Other than a flyover observation of Cooper’s Hawk, no other raptors from the list were recorded during any surveys completed on the subject lands in 2025. Candidate habitat in contiguous forested areas on the adjacent lands east of Stone Road.
Turtle Nesting Areas Rationale: These habitats are rare and when identified will often be the only breeding site for local populations of turtles.	Exposed mineral soil (sand or gravel) areas adjacent (<100 m) or within the following ELC ecosites: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 BOO1 FEO1	- Best nesting habitat for turtles are close to water and away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals. - For an area to function as a turtle-nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH. - Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used.	Midland Painted Turtle <u>Special Concern Species:</u> Northern Map Turtle Snapping Turtle	Studies confirm: - Presence of five or more nesting Midland Painted Turtles. - One or more Northern Map Turtle or Snapping Turtle nesting is a SWH. - The area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30-100 m around the nesting area dependent on slope, riparian vegetation and adjacent land use is the SWH. - Travel routes from wetland to nesting area are to be considered within the SWH as part of the 30-100 m area of habitat. - Field investigations should be conducted in prime nesting season typically late spring to early summer. Observational studies observing the turtles nesting is a recommended method. SWHMiST Index #28 provides development effects and mitigation measures for turtle nesting habitat.	No potential. Suitable nesting habitat is absent beyond road ROW which does no constitute suitable or high-quality turtle nesting habitat.

Habitat	CANDIDATE - Significant Wildlife Habitat		CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Wildlife Species	Defining Criteria	Presence of Candidate or Confirmed Habitat on the ROW and/or Study Area?
Seeps and Springs Rationale: Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.	Seeps/Springs are areas where ground water comes to the surface. Often, they are found within headwater areas within forested habitats. Any forested ecosite within the headwater areas of a stream could have seeps/springs.	- Any forested area (with <25% meadow/field/ pasture) within the headwaters of a stream or river system. - Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species.	Wild Turkey Ruffed Grouse Spruce Grouse White-tailed Deer Salamander spp.	Field Studies confirm: - Presence of a site with two or more seeps/springs should be considered SWH. - The area of a ELC forest ecosite or an ecoelement within ecosite containing the seeps/springs is the SWH. The protection of the recharge area considering the slope, vegetation, height of trees and groundwater condition need to be considered in delineation the habitat. SWHMiST Index #30 provides development effects and mitigation measures.	Seep Wild Turkey was the only listed species recorded during any field surveys in 2025.
Amphibian Breeding Habitat (Woodland) Rationale: These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations.	All ecosites associated with these ELC Community Series: FOC FOM FOD SWC SWM SWD Breeding pools within the woodland or the shortest distance from forest habitat are more significant because they are more likely to be used due to reduced risk to migrating amphibians.	- Presence of a wetland, pond or woodland pool (including vernal pools) >500 m² (about 25 m diameter) within or adjacent (within 120 m) to a woodland (no minimum size). Some small wetlands may not be mapped and may be important breeding pools for amphibians. - Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat.	Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Wood Frog	Studies confirm: - Presence of breeding population of one or more of the listed newt/salamander species or two or more of the listed frog species with at least 20 individuals (adults or eggs masses) or two or more of the listed frog species with Call Level Codes of 3. - A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the woodland/wetlands. - The habitat is the wetland area plus a 230 m radius of woodland area. If a wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the woodland is to be included in the habitat. SWHMiST Index #14 provides development effects and mitigation measures.	Candidate habitat present in swamp and forested communities. However, based on the results of the background records review and field assessments, none of the habitats represented by the amphibian breeding call survey stations met the criteria for SWH.

Habitat	CANDIDATE - Significant Wildlife Habitat		CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Wildlife Species	Defining Criteria	Presence of Candidate or Confirmed Habitat on the ROW and/or Study Area?
Amphibian Breeding Habitat (Wetlands) Rationale: Wetlands supporting breeding for these amphibian species are extremely important and fairly rare within Central Ontario landscapes.	ELC Community Classes: SW MA FE BO OA and SA. Typically, these wetland ecosites will be isolated (>120 m) from woodland ecosites, however larger wetlands containing predominantly aquatic species (e.g., Bull Frog) may be adjacent to woodlands.	- Wetlands >500 m² (about 25 m diameter), supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNRF mapping and could be important amphibian breeding habitats. - Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment from predators. - Bullfrogs require permanent water bodies with abundant emergent vegetation.	Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	Studies confirm: - Presence of breeding population of one or more of the listed newt/salamander species or two or more of the listed frog/toad species with at least 20 individuals (adults or eggs masses) or two or more of the listed frog/toad species with Call Level Codes of 3 or; Wetland with confirmed breeding Bullfrogs are significant. - The ELC ecosite wetland area and the shoreline are the SWH. - A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the wetlands. - If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. SWHMiST Index #15 provides development effects and mitigation measures.	No potential. While wetland habitats are present within the Study Area, they are predominantly forested with limited pooling water.
Woodland Area-Sensitive Bird Breeding Habitat Rationale: Large, natural blocks of mature woodland habitat within the settled areas of Southern Ontario are important habitats for area sensitive interior forest song birds.	All ecosites associated with these ELC Community Series: FOC FOM FOD SWC SWM SWD	- Habitats where interior forest breeding birds are breeding, typically large mature (>60 yrs. old) forest stands or woodlots >30 ha. - Interior forest habitat is at least 200 m from forest edge habitat.	Yellow-bellied Sapsucker Red-breasted Nuthatch Veery Blue-headed Vireo Northern Parula Black-throated Green Warbler Blackburnian Warbler Black-throated Blue Warbler Ovenbird Scarlet Tanager Winter Wren Special Concern: Cerulean Warbler Canada Warbler	Studies confirm: - Presence of nesting or breeding pairs of three or more of the listed wildlife species. Note: any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH. - Conduct field investigations in spring and early summer when birds are singing and defending their territories. - Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. SWHMiST Index #34 provides development effects and mitigation measures.	Confirmed absent. No forest stands or woodlots > 30 ha with interior forest habitat being > 200 m from edge habitat are present in the Study Area. None of the indicator species were documented as present during the course of breeding bird surveys.

Habitat	CANDIDATE - Significant Wildlife Habitat		CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Wildlife Species	Defining Criteria	Presence of Candidate or Confirmed Habitat on the ROW and/or Study Area?
Table 1.3: Habitat for Species of Conservation Concern considered Significant Wildlife Habitat					
Marsh Breeding Bird Habitat Rationale: Wetlands for these bird species are typically productive and fairly rare in Southern Ontario landscapes.	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SAS1 SAM1 SAF1 FEO1 BOO1 For Green Heron: All SW MA and CUM1 sites	- Nesting occurs in wetlands. - All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present. - For Green Heron, habitat is at the edge of water such as sluggish streams, ponds and marshes sheltered by shrubs and trees. Less frequently, it may be found in upland shrubs or forest a considerable distance from water.	American Bittern Virginia Rail Sora Common Moorhen American Coot Pied-billed Grebe Marsh Wren Sedge Wren Common Loon Sandhill Crane Green Heron Trumpeter Swan Special Concern: Black Tern Yellow Rail	Studies confirm: - Presence of five or more nesting pairs of Sedge Wren or Marsh Wren or one pair of Sandhill Cranes breeding by any combination of five or more of the listed species. Note: any wetland with breeding of one or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH. - Area of the ELC ecosite is the SWH. - Breeding surveys should be done in May/June when these species are actively nesting in wetland habitats. - Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. SWHMiST Index #35 provides development effects and mitigation measures.	No potential. Suitable habitats absent that could support marsh breeding birds. None of the species listed were recorded during surveys completed in 2025.
Open Country Bird Breeding Habitat Rationale: This wildlife habitat is declining throughout Ontario and North America. Species such as the Upland Sandpiper have declined significantly the past 40 years based on CWS (2004) trend records.	CUM1 CUM2	- Large grassland areas (includes natural and cultural fields and meadows) >30 ha. - Grasslands not Class 1 or 2 agricultural lands, and not being actively used for farming (i.e., no row cropping or intensive hay or livestock pasturing in the last five years). - Grassland sites considered significant should have a history of longevity, either abandoned fields, mature hayfields and pasturelands that are at least five years or older. - The Indicator bird species are area sensitive requiring larger grassland areas than the common grassland species.	Upland Sandpiper Grasshopper Sparrow Vesper Sparrow Northern Harrier Savannah Sparrow Special Concern Short-eared Owl	Field Studies confirm: - Presence of nesting or breeding of two or more of the listed species. - A field with one or more breeding Short-eared Owls is to be considered SWH. - The area of SWH is the contiguous ELC ecosite field areas. - Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories. - Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. SWHMiST Index #32 provides development effects and mitigation measures.	No potential. Suitable habitats absent that could support open country breeding birds. Savannah Sparrow was the only listed species recorded during breeding bird surveys on the subject lands in 2025.

Habitat	CANDIDATE - Significant Wildlife Habitat		CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Wildlife Species	Defining Criteria	Presence of Candidate or Confirmed Habitat on the ROW and/or Study Area?
Shrub/Early Successional Bird Breeding Habitat Rationale: This wildlife habitat is declining throughout Ontario and North America. The Brown Thrasher has declined significantly over the past 40 years based on CWS (2004) trend records.	CUT1 CUT2 CUS1 CUS2 CUW1 CUW2 Patches of shrub ecosites can be complexed into a larger habitat for some bird species.	- Large field areas succeeding to shrub and thicket habitats >10 ha in size. - Shrub land or early successional fields, not class 1 or 2 agricultural lands, not being actively used for farming (i.e., no row-cropping, haying or live-stock pasturing in the last 5 years). - Shrub thicket habitats (>10 ha) are most likely to support and sustain a diversity of these species. - Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands.	Indicator Spp: Brown Thrasher Clay-coloured Sparrow Common Spp. Field Sparrow Black-billed Cuckoo Eastern Towhee Willow Flycatcher Special Concern: Yellow-breasted Chat Golden-winged Warbler	Field Studies confirm: - Presence of nesting or breeding of one of the indicator species and at least two of the common species. - A habitat with breeding Yellow-breasted Chat or Golden-winged Warbler is to be considered as SWH. - The area of the SWH is the contiguous ELC ecosite field/thicket area. - Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories. - Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. SWHMiST cxlix Index #33 provides development effects and mitigation measures.	No potential. The ecosites and the habitat criteria for SWH Habitat are not present. While Field Sparrow and Willow Flycatcher were recorded during breeding bird surveys on the subject lands in 2025, neither of the indicator species were observed.
Terrestrial Crayfish Rationale: Terrestrial Crayfish are only found within SW Ontario in Canada and their habitats are very rare.	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 MAS1 MAS2 MAS3 SWD SWT SWM CUM1 with inclusions of above meadow marsh or swamp ecosites can be used by terrestrial crayfish.	- Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for Terrestrial Crayfish. - Constructs burrows in marshes, mudflats, meadows, the ground can’t be too moist. Can often be found far from water. - Both species are a semi-terrestrial burrower which spends most of its life within burrows consisting of a network of tunnels. Usually the soil is not too moist so that the tunnel is well formed.	Chimney or Digger Crayfish (<i>Fallicambarus fodiens</i>) Devil Crayfish or Meadow Crayfish (<i>Cambarus diogenes</i>)	Studies Confirm: - Presence of one or more individuals of species listed or their chimneys (burrows) in suitable meadow marsh, swamp or moist terrestrial sites. - Area of ELC ecosite or an ecoelement area of meadow marsh or swamp within the larger ecosite area is the SWH. - Surveys should be done April to August in temporary or permanent water. Note the presence of burrows or chimneys are often the only indicator of presence, observance or collection of individuals is very difficult. SWHMiST Index #36 provides development effects and mitigation measures.	- Candidate is habitat present where marsh and swamp habitats occur adjacent to the Eramosa River as well as the SWM1-1 and SWM communities but are not present within the public ROWs. - No terrestrial crayfish, burrows, or chimneys were observed during site investigations in 2025.

Habitat	CANDIDATE - Significant Wildlife Habitat		CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Wildlife Species	Defining Criteria	Presence of Candidate or Confirmed Habitat on the ROW and/or Study Area?
Special Concern and Rare Wildlife Species Rationale: These species are quite rare or have experienced significant population declines in Ontario.	All plant and animal Element Occurrences (EO) within a 1 or 10 km grid. Older element occurrences were recorded prior to GPS being available, therefore location information may lack accuracy.	When an element occurrence is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC ecosites.	All Special Concern and Provincially Rare (S1-S3, SH) plant and animal species. Lists of these species are tracked by the NHIC.	Studies Confirm: - Assessment/inventory of the site for the identified Special Concern or rare species needs to be completed during the time of year when the species is present or easily identifiable. - The area of the habitat to the finest ELC scale that protects the habitat form and function is the SWH, this must be delineated through detailed field studies. The habitat needs be easily mapped and cover an important life stage component for a species e.g., specific nesting habitat or foraging habitat. SWHMiST Index #37 provides development effects and mitigation measures.	Candidate - American Bumble Bee (SC SARA & ESA) - Blushing Scale Lichen (S3) - Bristling Shadow Lichen (S2S3) - Eastern Ribbonsnake (SC SARA & ESA) - Hoary Long-horned Bee (S2S3) - Monarch (SC ESA)Northern Map Turtle (SC ESA & SARA) - Painted Skimmer (S3) - Snapping Turtle (SC ESA & SARA) - Swamp Darmer (S3S4) - Yellow-Banded Bumble Bee (SC ESA & SARA) Confirmed - Barn Swallow (SC ESA, THR SARA) - Eastern Wood-pewee (SC ESA & SARA) - Grasshopper Sparrow (NRSI only, was not observed by Burnside)
Table 1.4.1: Animal Movement Corridors					
Amphibian Movement Corridors Rationale: Movement corridors for amphibians moving from their terrestrial habitat to breeding habitat can be extremely important for local populations.	Corridors may be found in all ecosites associated with water. Corridors will be determined based on identifying the significant breeding habitat for these species in Table 1.1.	- Movement corridors between breeding habitat and summer habitat. - Movement corridors must be determined when Amphibian breeding habitat is confirmed as SWH from Table 1.2.2 (Amphibian Breeding Habitat-Wetland) of this Schedule.	Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	- Field Studies must be conducted at the time of year when species are expected to be migrating or entering breeding sites. - Corridors should consist of native vegetation, with several layers of vegetation. - Corridors unbroken by roads, waterways or bodies, and undeveloped areas are most significant. - Corridors should have at least 15 m of vegetation on both sides of waterway or be up to 200 m wide of woodland habitat and with gaps <20 m. - Shorter corridors are more significant than longer corridors, however amphibians must be able to get to and from their summer and breeding habitat. SWHMiST Index #40 provides development effects and mitigation measures.	No potential on the subject lands. Based on the results of the background records review and field assessments, none of the habitats represented by the amphibian breeding call survey stations meet the criteria for significant.

Habitat	CANDIDATE - Significant Wildlife Habitat		CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Wildlife Species	Defining Criteria	Presence of Candidate or Confirmed Habitat on the ROW and/or Study Area?
Deer Movement Corridors Rationale: Corridors important for all species to be able to access seasonally important life-cycle habitats or to access new habitat for dispersing individuals by minimizing their vulnerability while travelling.	Corridors may be found in all forested ecosites. A Project Proposal in Stratum II Deer Wintering Area has potential to contain corridors.	Movement corridor must be determined when Deer Wintering Habitat is confirmed as SWH from Table 1.1 of this schedule. - A deer wintering habitat identified by the MNRF as SWH in Table 1.1 of this Schedule will have corridors that the deer use during fall migration and spring dispersion. - Corridors typically follow riparian areas, woodlots, areas of physical geography (ravines, or ridges).	White-tailed Deer	- Studies must be conducted at the time of year when deer are migrating or moving to and from winter concentration areas. - Corridors that lead to a deer wintering habitat should be unbroken by roads and residential areas. - Corridors should be at least 200 m wide with gaps <20 m and if following riparian area with at least 15 m of vegetation on both sides of waterway. - Shorter corridors are more significant than longer corridors, SWHMiST Index #39 provides development effects and mitigation measures.	No potential. No Deer Winter Congregation Areas are mapped by the MNR in the Study Area.
Table 1.5.1: Significant Wildlife Habitat Exceptions for Ecodistricts within EcoRegion 6E					
6E-14 Mast Producing Areas Rationale: The Bruce Peninsula has an isolated and distinct population of black bears. Maintenance of large woodland tracts with mast-producing tree species is important for bear.	All Forested habitat represented by ELC Community Series: FOM FOD	- Woodland ecosites >30 ha with mast-producing tree species, either soft (cherry) or hard (oak and beech). - Black bears require forested habitat that provides cover, winter hibernation sites, and mast- producing tree species. Forested habitats need to be large enough to provide cover and protection for black bears.	Black Bear	All woodlands >30 ha with a 50% composition of these ELC Vegetation Types are considered significant: FOM1-1 FOM2-1 FOM3-1 FOD1-1 FOD1-2 FOD2-1 FOD2-2 FOD2-3 FOD2-4 FOD4-1 FOD5-2 FOD5-3 FOD5-7 FOD6-5 SWHMiST Index #3 provides development effects and mitigation measures.	No potential. The Study Area is not present within Ecoregion 6E-14. No woodland ecosites >30 ha are present in the Study Area.

Habitat	CANDIDATE - Significant Wildlife Habitat		CONFIRMED - Significant Wildlife Habitat		
	Ecological Land Classification Ecosite Codes	Habitat Criteria	Wildlife Species	Defining Criteria	Presence of Candidate or Confirmed Habitat on the ROW and/or Study Area?
6E- 17 Lek Rationale: Sharp-tailed grouse only occur on Manitoulin Island in Ecoregion 6E, Leks are an important habitat to maintain their /*population.	CUM CUS CUT	• The Lek or dancing ground consists of bare, grassy or sparse shrubland. There is often a hill or rise in topography. • Leks are typically a grassy field/meadow >15 ha with adjacent shrublands and >30 ha with adjacent deciduous woodland. Conifer trees within 500 m are not tolerated. • Grasslands (field/meadow) are to be >15 ha when adjacent to shrubland and >30 ha when adjacent to deciduous woodland. • Grasslands are to be undisturbed with low intensities of agriculture (light grazing or late haying). • Leks will be used annually if not destroyed by cultivation or invasion by woody plants or tree planting.	Sharp-tailed Grouse	• Studies confirming Lek habitat are to be completed from late March to June. • Any site confirmed with sharp-tailed grouse courtship activities is considered significant. • The field/meadow ELC ecosites plus a 200 m radius area with shrub or deciduous woodland is the Lek habitat. • SWHMiST cxlix Index #32 provides development effects and mitigation measures.	No potential. Habitat criteria for SWH is absent. No Sharp-tailed Grouse were recorded during field surveys in 2025.



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Appendix G

Aquatic Habitat Photo Log

Appendix G



Photo 1: Upstream area of McQuillan's Bridge (Structure 116).



Photo 2: Looking upstream of McQuillan's Bridge (Structure 116)'s run.



Photo 3: Looking toward the upstream McQuillan's Bridge (Structure 116)'s pool.



Photo 4: Underneath McQuillan's Bridge (Structure 116), downstream area of the pool.



Photo 5: Area between McQuillan's Bridge (Structure 116) and Stone Road Bridge.



Photo 6: Riverbank of the area downstream of the bridge on Stone Road.



Photo 7: Downstream of bridge on Stone Road.



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Appendix H

Terms of Reference: Scoped Natural Environment Report



January 5, 2026

Via: Email

Leah Lefler
Environmental Planner
City of Guelph
1 Carden Street
Guelph ON N1H 3A1

Dear Leah:

Re: Victoria Road, Stone Road and Structure 116 EA, Guelph
Terms of Reference: Scoped Natural Environment Report
Project No.: 300059860.0000

1.0 Introduction

R.J. Burnside & Associates Limited (Burnside) has been retained by the City of Guelph to complete an Environmental Assessment for road improvements associated with Victoria Road South (York Road to Stone Road East), and Stone Road East (Victoria Road South to Watson Parkway South) and Structure 116 (McQuillan's Bridge). A Scoped Natural Environment Report (NER) is required to review background natural heritage information and contribute to the EA to assist with determination of constraints, preferred alternative for the road design.

2.0 Understanding of the Project

The Municipal Class Environmental Assessment (MCEA) process for Schedule C projects is subject to a four-phase process: 1) identify the problem or opportunity, 2) develop alternative solutions to the problem or opportunity and selects a preferred, 3) develop alternative design approaches for the preferred solution and select a preferred and 4) summarize the planning, design and consultation process in an environmental study report available for public review.

The Project will address the need for widening Victoria Road and Stone Road to accommodate capacity needs, the proposed Quality Transit network and Spine Cycling Network. It includes preliminary design for the roads and structures, and major underground infrastructure in support of the Guelph Innovation District (GID). The Project has ground and surface water management requirements, Natural Heritage System (NHS) crossings, and phased development needs. The MCEA project may adapt to the Municipal Project Assessment Process (MPAP) if implemented by the Province.

The MCEA will also determine the preferred solution and preliminary design for McQuillan's Bridge, which has cultural significance and is currently in poor condition and for the roads and

underground utilities. The comprehensive Communications and Engagement Plan with the public and stakeholders will address the protection of the NHS and permitting requirements.

The Grand River Conservation Authority (GRCA) has also requested a scoped wetland impact assessment is requested to verify the extent of any wetlands in the project area. Following the completion of the wetland boundary staking activities and review of the proposed grading limits, a terms of reference for a wetland impact assessment will be prepared and provided to the GRCA for review if impacts to wetlands are anticipated.

To date, an NER has been prepared to be included as part of the MCEA submission and has been subject to initial review by the City of Guelph planning department. The following TOR will identify the existing report framework and will identify all completed surveys and any outstanding surveys.

The MCEA has been divided into two parts, the first part for Structure 116 and the other part for the road design. A single NER will be prepared for the two parts due to overlapping areas of study.

3.0 NER Framework

The sections provided below document the sections of the NER.

3.1 Introduction

This section will identify the project background and introduce the project context.

3.2 Policy and Legislative Framework

A list of the applicable policies and regulations will be provided and the components that apply to the subject lands and proposed development.

It is understood that the following designations apply to portions of or the entire site:

- Fisheries Act (1984)
- Migratory Birds Convention Act (1994) and Migratory Birds Regulations (2022)
- Provincial Policy Statement (2024)
- Provincial Endangered Species Act, 2007 (amended 2025)
- City of Guelph Official Plan (February 2024 Consolidation)
- Regulated Lands under Ontario Regulation 41/24 (GRCA)

3.3 Field Inventory Methodology

This section will identify the methods used to characterize the natural heritage features and functions of within the study area completed from publicly accessible lands (i.e. road right-of-way).

A number of field investigations have been completed during the 2025 field season including the following:

- Delineation and categorization of vegetation communities in three seasons (spring, summer, and fall) using the methodology of the Ecological Land Classification for Southern Ontario: First Approximation and Its Application (Lee et al. 1998) to be completed as part of the vegetation inventory
- A three-season (spring, summer, and early fall) botanical inventory
- Three breeding bird surveys that have been completed in accordance with the Ontario Breeding Bird Atlas (OBBA) Guide for Participants (Bird Studies Canada, March 2001) which will include the MNR's Survey Protocol for Eastern Meadowlark in Ontario (August 2013), tailored to the needs of the project
- May and June amphibian breeding habitat surveys according to Marsh Monitoring Program Participant's Handbook for Surveying Amphibians (Bird Studies Canada, 2008)
- Structure (i.e. bridge and culvert) survey to determine potential habitat for Barn Swallow and other migratory bird species
- Incidental wildlife and wildlife habitat observations documented during field investigations
- Aquatic habitat assessment following the MTO Environmental Guide for Fish and Fish Habitat (MTO, 2009)
- Significant Wildlife Habitat (SWH) Screening to be completed based on the Ministry of Natural Resources and Forestry (MNRF) SWH Criteria Schedule 6E
- Species at Risk screening to identify potential habitats for species which may inhabit the area

The following surveys will be completed during the 2026 field season:

- The remaining April calling amphibian survey
- Wetland and woodland boundary delineation with agency staff will also be required to determine encroachment requirements, impacts to natural heritage features and functions, and guidelines to mitigation
- A leaf-off survey for candidate Bat Maternity Roost trees will be conducted for trees that may be subject to removal to accommodate construction (i.e. grading) in accordance with the MECP's Maternity Roost Surveys (Forest/Woodlands) protocol and Species at Risk Bats Survey Note 2022. Surveys will be conducted following the identification of the preferred alternative and preliminary grading limits.

Details of dates, weather and other fieldwork conditions have been provided within a summary table that documents the personnel and their expertise that completed the inventory components.

3.4 Results of Records Review

This section will include a description of previously completed studies such as previous Environmental Impact Studies for the Guelph Innovation District Lands, the City of Guelph Operations Campus as well as existing databases and citizen science applications including the Natural Heritage Information Centre (NHIC) Databases, Ontario Breeding Bird Atlas, Ontario reptile and Amphibian Atlas, MNR databases, iNaturalist, and eBird.

3.5 Results of Field Investigations

A description of the study area will be provided based on the background desktop review and the site investigations. As mentioned above, a number of field investigations have been completed during the 2025 field season and have been detailed within the previously submitted NER including the following:

- Environmental land classification (ELC)
- Three-season botanical inventory
- Breeding bird surveys
- May and June calling amphibian surveys
- Bridge structure wildlife surveys
- Incidental wildlife observations
- Aquatic habitat
- Identification of discrete Significant Wildlife Habitat (SWH) features

The following surveys will be completed during the 2026 field season:

- The remaining April calling amphibian survey
- Wetland and woodland boundary delineation with agency staff
- Bat maternity roost tree surveys (following the identification of the preferred alternative)

An addendum to the NER will be issued following the completion of the wetland and woodland boundary delineation, outstanding amphibian surveys, and bat maternity roost tree surveys.

A tree inventory will also be completed in 2026 under a separate cover that will review potential preservation, injury and removal of trees adjacent to the anticipated impacts.

3.6 Significant Natural Features

All of the natural features identified through the records review and field investigations will be assessed to determine their significance and whether they are subject to the regulations, policies and plans described in Section 3.2 above.

To date, consideration for the following has been provided:

- Provincially Significant Wetlands (PSWs)
- Other wetlands
- Significant Woodlands
- Significant Valleylands
- Significant Areas of Natural and Scientific Interest (ANSIs)
- SWH
- Habitat of Endangered and Threatened Species including the following species:
 - Black Ash (*Fraxinus nigra*) – END, confirmed
 - Bank Swallow (*Riparia riparia*) – THR, confirmed
 - Chimney Swift (*Chaetura pelagica*) – THR, confirmed
 - Eastern Meadowlark (*Sturnella magna*) – THR, confirmed
 - SAR Bats – END, candidate
- Regulated hazard lands

3.7 Summary of Significant Natural Heritage Features

A summary of all observed significant natural heritage features has been provided.

3.8 Guidance for Project Development and Design

A summary of all recommended general mitigation measures to minimize impacts to natural features will be provided.

3.9 Summary

A summary of Burnside's findings of recommended general mitigation measures to minimize impacts to natural features will be provided.

Figures and Appendices

A number of figures will be prepared that include:

1. A context plan that illustrates the Study Area and limits within the adjacent natural heritage communities and properties
2. The policy constraints that apply to the Study Area, including City of Guelph OP designations, GRCA regulated lands, wetlands (Provincially Significant and unevaluated) and watercourses
3. Locations of wildlife field surveys: breeding bird and amphibian survey stations
4. An existing conditions plan set that contains an aerial photo with the ecological communities within the Study Area
5. Confirmed Significant Wildlife Habitat
6. Candidate Significant Wildlife Habitat
7. Confirmed and Candidate Species at Risk habitat

Please advise that these Terms of Reference are acceptable to initiate our reporting on the project.

Yours truly,

R.J. Burnside & Associates Limited



Kevin Butt, ISA Certified Arborist and Terrestrial Ecologist
Ecology Lead
KB:af

cc: Kate Berry, Project Manager, Transportation Planning, City of Guelph (enc.) (Via: Email)

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