

Appendix F:

Natural Environment Existing Conditions and Impact Assessment Report

West 5th Street Natural Environment Assessment Report

Final Report

October 17, 2025

Prepared for:
City of Hamilton

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Project/File:
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Limitations and Sign-off

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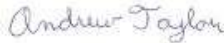
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Acronyms / Abbreviations

ANSI	Areas of Natural and Scientific Interest
CAA	<i>Conservation Authorities Act</i>
City	City of Hamilton
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
DFO	Fisheries and Oceans Canada
EA	Environmental Assessment
ECCC	Environment and Climate Change Canada
END	Endangered
EXT	Extirpated
ELC	Ecological Land Classification
ESA	<i>Endangered Species Act</i>
GIS	Geographic Information Systems
HADD	Harmful alteration, disruption or destruction
km	Kilometres
MBCA	<i>Migratory Birds Convention Act</i>
MBR	Migratory Birds Regulations
MECP	Ministry of the Environment, Conservation and Parks
MNR	Ministry of Natural Resources
NEAR	Natural Environment Assessment Report
NHIC	Natural Heritage Information Centre
O. Reg.	Ontario Regulation
OSAP	Ontario Stream Assessment Protocol
PSW	Provincially Significant Wetland
ROW	Right-of-Way
SAR	Species at Risk
SC	Special Concern
SCA	<i>Species Conservation Act</i>
SARA	<i>Species at Risk Act</i>
SOCC	Species of Conservation Concern



West 5th Street Natural Environment Assessment Report

Acronyms / Abbreviations

October 17, 2025

SWH	Significant Wildlife Habitat
HCA	Hamilton Conservation Authority
THR	Threatened
UHOP	Urban Hamilton Official Plan



1 Introduction

The City of Hamilton (the City) retained Stantec Consulting Ltd. (Stantec) to develop and assess alternative solutions to improve transportation along West 5th Street (from Stone Church Road West to Rymal Road West) through a Municipal Class Environmental Assessment (EA) process. Options to improve traffic, active transportation, and stormwater management throughout the corridor were assessed through the EA process, and a Preferred Plan was selected (the Project).

This Natural Environment Assessment Report (NEAR) documents natural heritage features, identifies potential impacts on the features within the Preferred Plan footprint, recommends appropriate mitigation measures, and identifies potential authorizations and permits that may be required.

The Study Area for this report includes the Preferred Plan and the area within 120 m of that footprint (Figure 1, Appendix A).

1.1 Agency Consultation

A Terms of Reference (ToR) was prepared using the *Conservation Authority Baseline Ecological Assessment Requirements for Municipal Class Environmental Assessments* (2011) and the City of Hamilton's *Environmental Impact Statement (EIS) Guidelines* (2015). The ToR was submitted to Hamilton Conservation Authority (HCA) planning and ecology staff on April 2, 2025. The ToR outlined the field investigations that were completed on October 17, 2024, and the proposed field investigations for 2025, as well as requesting natural heritage information for the Study Area. A response from the HCA was not received prior to the completion of this report. The draft ToR that was sent to the HCA is provided in Appendix B.

Email notifications were sent to the Ministry of Natural Resources (MNR) and Ministry of the Environment, Conservation, and Parks (MECP) at the commencement of the EA process, and notices of the first Public Information Centre (PIC) to be held on January 16, 2025, were also sent to the MNR and MECP in December 2024. The agencies did not provide natural heritage information to support the Project; however, the MECP provided the *Client's Guide to Preliminary Screening for Species at Risk* (MECP 2019) and the MNR provided the *MNR Southern Region Information Package – For External Proponent Environmental Assessments* (MNR 2024) to be used to retrieve background natural heritage information for the Project.



2 Natural Heritage Legislation and Policy Considerations

A policy review was completed to identify environmental planning considerations and requirements, as applicable to the natural features in the Study Area. A discussion of relevant acts and policies is provided under separate headers below.

2.1 Federal

2.1.1 Fisheries Act

The federal *Fisheries Act*, 1985 (Government of Canada 2025a) is the primary legislation governing fish and fish habitat in Canada. The *Fisheries Act* defines fish habitat as "...waters frequented by fish and any other areas on which fish depend directly or indirectly in order to carry out their life processes including spawning grounds and nursery, rearing, food supply and migration areas." The fish and fish habitat protection provisions of the *Fisheries Act* apply to all fish and fish habitat in Canada. The *Fisheries Act* prohibits activities that result in the death of fish or the harmful alteration, disruption, or destruction (HADD) of fish habitat unless authorized by the Minister of Fisheries, Oceans. To assist proponents with determining if their project will comply with the fish and fish habitat provisions, Fisheries and Oceans Canada (DFO) has outlined measures to protect fish and fish habitat (DFO 2023a) as well as several standards and codes of practices (DFO 2023b). If a project cannot completely implement the measures to protect fish and fish habitat and if the standards and codes of practice are not applicable to the project, DFO recommends that the proponent request a review of the project by DFO. If it is determined that the death of fish or HADD of fish habitat is unavoidable as part of the Project, an authorization under the *Fisheries Act* may be required.

2.1.2 Species at Risk Act

The federal *Species at Risk Act*, 2002 (SARA; Government of Canada 2025b) protects and provides recovery strategies for species at risk (SAR) listed as extirpated (EXT), endangered (END) or threatened (THR) under Schedule 1. This legislation applies to species residing on federal lands, federally regulated projects, species with critical habitat on non-federal lands in specific circumstances, or aquatic species and migratory birds listed on Schedule 1 of the SARA.

2.1.3 Migratory Birds Convention Act

The *Migratory Birds Convention Act*, 1994 (MBCA; Government of Canada 2025d) prohibits the killing or capturing of migratory birds (S.4), as well as any damage, destruction, removal or disturbance of active nests (S. 6). It also allows the Canadian government to pass and enforce regulations to protect various species of migratory birds, as well as their habitats. Most species of birds in Canada are protected under the MBCA. Migratory birds are defined by Article I, which names the families and subfamilies of birds protected, and provides clarification of the species included.



The *Migratory Birds Regulations, 2022* (MBR), further define when nests of migratory bird species are protected, with special provisions in place for bird species that reuse their nests (e.g., Pileated Woodpecker, Great Blue Heron). In certain situations, Environment and Climate Change Canada (ECCC) may issue permits allowing the destruction of nests for scientific, agricultural, or health and safety purposes or the relocation of Pileated Woodpecker nests under the MBR.

New development and site alterations do not qualify as a permitted activity under the MBCA and failure to comply with the MBCA/MBR could result in a charge. Mitigation measures and best management practices must be applied to manage and reduce the risk of harm to migratory birds or their nests. ECCC provides information on the “general nesting periods” for migratory birds for Canada (ECCC 2018). The nesting period varies depending on nesting zone (Study Area located in C2 Lower Great Lakes/St Lawrence Plain) and habitat type (i.e., forest, open, wetlands) and generally extends from April 1 to August 31 in southern Ontario.

Clearing activities should be completed outside of these nesting periods, but if this is not possible, mitigation measures such as preclearing nest searches and identification of appropriate setbacks from confirmed or suspected nests may be applied for habitat that can be adequately searched for nests (e.g., isolated trees; small, sparse areas of vegetation).

2.2 Provincial

2.2.1 Environmental Assessment Act

The planning of major municipal projects or activities (e.g., an upgrade or expansion of an existing water, wastewater, or stormwater servicing area) is subject to the Ontario *Environmental Assessment Act*, R.S.O. 1990 (EA Act). The EA Act requires the proponent (in this case, the City) to complete a Municipal Class EA, for a basement and surface flooding infrastructure master planning exercise. Environmental impacts that the proposed undertaking may have must be identified and mitigation measures outlined. The EA Act defines the environment in terms of physical, natural, social, and cultural aspects.

The EA process in Ontario follows a logical decision-making process and incorporates all aspects of:

- Identification of the problem or need for the project (Phase 1),
- A thorough evaluation of the planning options or alternative solutions to the problem based on defined screening criteria (Phase 2, the last phase for Schedule B projects),
- An assessment of design alternatives (pre-design for Schedule B projects, or Phase 3 for Schedule C projects),
- The completion of documentation for the public record (Project File for Schedule B projects or Phase 4 – ESR for Schedule C projects), and
- The implementation of the project including design with appropriate monitoring during construction (Phase 5).



2.2.2 Provincial Planning Statement

This report was prepared to be consistent with Policy 4.1 of the Provincial Planning Statement (PPS; MMAH 2024) under the *Planning Act, 1990* and the Natural Heritage Reference Manual (NHRM) for Natural Heritage Policies of the Provincial Policy Statement 2005 Second Edition (NHRM) (Ontario Ministry of Natural Resources (MNR) 2010). The PPS represents minimum standards to protect natural heritage features in a municipality; however, planning authorities can exceed these standards.

PPS Policy 4.1 addresses protection and management of natural heritage resources. The Study Area falls within Ecoregion 7E. Section 4.1.4 of the PPS, states that development and site alteration shall not be permitted in the following features in Ecoregion 7E:

- a) significant wetlands
- b) significant coastal wetlands

Section 4.1.5 of the PPS states that development and site alteration shall not be permitted in the following features, unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions in Ecoregion 7E:

- a) significant woodlands
- b) significant valleylands
- c) significant wildlife habitat
- d) significant areas of natural and scientific interest
- e) coastal wetlands that are not subject to policy 4.1.4(b)

Further, Sections 4.1.6 and 4.1.7 state that development and site alteration shall not be permitted in the following features, except in accordance with provincial and federal requirements:

- a) fish habitat
- b) habitat of endangered or threatened species

Development or site alteration may be permitted on lands adjacent to the natural heritage features listed above if it is demonstrated that there will be no negative impacts on the natural features or the ecological function for which the area was identified.

The diversity and connectivity of the natural features in an area should be maintained and enhanced, where possible, recognizing linkages between and among natural heritage, surface water and groundwater features (PPS Policy 4.1.2).

2.2.3 Conservation Authorities Act

The *Conservation Authorities Act, 1990* (CAA) (as amended on June 6, 2024) provides for “the organization and delivery of programs and services that further the conservation, restoration, development and management of natural resources” in Ontario. Conservation Authorities are established under the CAA and



have jurisdiction over a designated watershed or watersheds. The Hamilton Conservation Authority (HCA) is the responsible authority for the Study Area.

Ontario Regulation (O. Reg.) 41/24 of the CAA identifies prohibited activities, exemptions and permits for development activities within regulated areas which include hazardous lands (areas associated with flooding, erosion, dynamic beaches or unstable soil or bedrock), watercourses, and wetlands. Development activities are defined in the regulation, and include construction, site grading, and temporary and permanent stock piling of material.

2.2.4 Endangered Species Act

The *Endangered Species Act, 2007* (ESA) applies to species that are designated as extirpated, endangered or threatened and listed on the Species at Risk in Ontario (SARO) List (Ontario Regulation [O. Reg.] 230/08). Species and general habitat protection apply to all species on the SARO List, except those designated as special concern, which are not afforded protection under the ESA. The ESA includes specific exemptions from the provisions of the ESA under certain conditions under O. Reg. 242/08 and O. Reg. 830/21. Exemptions and conditions vary by species, type of activity, the date the species was listed and the date the activity commenced.

The Endangered Species Act (ESA), 2007 (ESA; Government of Ontario 2025) was amended on June 5, 2025, as part of Bill 5: An Act to enact the Special Economic Zones, 2025 and will remain in effect until such time as the Species Conservation Act (SCA) is proclaimed. Under the amended ESA, the SARO List (O. Reg. 230/08) is still in place, and conditional exemptions (O. Reg. 242/08 and O. Reg. 830/21) and new permits continue to be available. Activities impacting species and their habitat that receive protection under the amended ESA (as outlined on the SARO List) continue to require authorization or exemption.

The SCA is anticipated to be enacted in the coming months and is proposed to use a “registration-first approach” with most activities covered by registration. A Permit would still be required in some circumstances. Regulations under the SCA, which will provide details of the registration options, are currently under development.

2.2.5 Fish and Wildlife Conservation Act

The provincial *Fish and Wildlife Conservation Act, 1997* (FWCA) (Government of Ontario 2025b) provides protection of wildlife in Ontario including fish, furbearing mammals, game wildlife and specially protected wildlife through regulations for hunting, trapping, and fishing practices. Game and specially protected mammals, birds, reptiles, amphibians and invertebrates are listed on Schedules 1-11 of the FWCA. Definitions provided for hunting including capturing or harassing wildlife (Section 5) and would include activities that collect or handle wildlife for inventories or other scientific purposes, or to relocate wildlife out of harm’s way (e.g., during construction activities), including individuals and eggs. Sections 7 and 8 also provide protection for nest and eggs of specified bird species including raptors, and dens of bears and furbearing animals, and beaver dams. Under the FWCA, the Minister has the authority to authorize activities that would otherwise be prohibited such as the safe capture of wildlife and removal of nests, dens and dams, and impose conditions on an authorization.



2.3 Municipal

2.3.1 Urban Hamilton Official Plan

The Urban Hamilton Official Plan (UHOP) came into effect on August 16, 2013, with exception of select policies, schedules, maps, appendices that remain under appeal. Section C.2.3. of the UHOP identifies that the intent of this policy is to “preserve and enhance Core Areas and to ensure that any development or site alteration within or adjacent to them shall not negatively impact their natural features or their ecological functions.”

In accordance with OP Section C. 2.3.1, Schedule B of the UHOP identifies the areas of the Natural Heritage System including land identified as *Core Areas* and *Linkages*. *Core Areas* include key natural heritage features and key hydrological features, as well as other locally and provincially significant natural areas. UHOP Section C.2.3.2 defines *Core Areas* as “the most important components in terms of biodiversity, productivity, and ecological and hydrological functions.” Section C.2.7 recognizes *Linkages* as “natural areas within the landscape that ecologically connect *Core Areas*.” Not all *Core Areas* have been identified on the Schedules within the UHOP. This includes significant habitat for threatened and endangered species, significant wildlife habitat, seeps and springs, and significant valleylands. These features are to be identified and protected as *Core Areas* in accordance with the policies of the UHOP. In accordance with Section C.2.2.2 and C.2.2.4, Schedule B – Natural Heritage System and Schedules B-1 to B-8 shall be amended when new *Core Areas* are identified through an Environmental Impact Study, watershed study, or other appropriate studies accepted by the City.

In accordance with Section C.2.3.3., “the natural features and ecological functions of *Core Areas* shall be protected and where possible and deemed feasible to the satisfaction of the City enhanced. To accomplish this protection and enhancement, vegetation removal and encroachment into *Core Areas* shall generally not be permitted, and appropriate vegetation protection zones shall be applied to all *Core Areas*.”

Section C.2.5.2 of the UHOP states that “new development and site alteration shall not be permitted within provincially significant wetlands, significant coast wetlands or significant habitat of threatened and endangered species.” Section C.2.5.3 states that “new development and site alteration shall not be permitted within fish habitat, except in accordance with provincial and federal requirements.” Section C.2.5.4 states that “new development and site alteration shall not be permitted within significant woodlands, significant valleylands, significant wildlife habitat and significant areas of natural and scientific interest unless it has been demonstrated that there shall be no negative impacts on the natural features or on their ecological functions.”

Section C.2.5.8 of the UHOP states that “New development or site alteration subject to Policies C.2.5.3 to C.2.5.7 requires, prior to approval, the submission and approval of an Environmental Impact Statement which demonstrates to the satisfaction of the City and the relevant Conservation Authority that:

- a) There shall be no negative impacts on the *Core Area*’s natural features or their ecological functions.
- b) Connectivity between *Core Areas* shall be maintained, or where possible, enhanced for the movement of surface and ground water, plants and wildlife across the landscape.



- c) The removal of other natural features shall be avoided or minimized by the planning and design of the proposed use or site alteration wherever possible.”

Section C.2.5.9 of the UHOP states that “An Environmental Impact Statement shall propose a vegetation protection zone which:

- a) has sufficient width to protect the Core Area and its ecological functions from impacts of the proposed land use or site alteration occurring during and after construction, and where possible and deemed feasible to the satisfaction of the City, restores or enhances the Core Area and/or its ecological functions; and
- b) is established to achieve, and be maintained as natural self-sustaining vegetation.”

As per Section C.2.5.10, “Where vegetation protection zone widths have not been specified by watershed and sub-watershed plan secondary plans, Environmental assessments and other studies, vegetation protection zone widths for watercourses, PSWs, unevaluated wetlands, woodlands, ANSIs, significant valleylands, significant habitat of threatened and endangered species, and SWH shall be evaluated and addressed by Environmental Impact Statements. Other agencies, such as Conservation Authorities, may have different vegetation protection zone requirements. (OPA 218).”



3 Methods

This section discusses the desktop and field studies that were completed to describe the existing natural heritage features within the Study Area.

3.1 Background Review

Natural Heritage background data were obtained for the Study Area from the following sources:

- Ministry of Natural Resources (MNR) Geospatial Ontario Mapping (MNR 2025a) – to identify Areas of Natural and Scientific Interest (ANSIs); wetlands, including provincially significant wetlands (PSWs); watercourses, waterbodies, records of fish, constructed drains.
- Natural Heritage Information Centre (NHIC) database (MNR 2025b) – for occurrences of Species at Risk (SAR) and Species of Conservation Concern (SOCC)
- Various wildlife atlases (Ontario Reptile and Amphibian Atlas, Ontario Nature 2019; Ontario Mammal Atlas, Dobbyn 1994; Ontario Breeding Bird Atlas, Cadman et. al. 2007; Ontario Butterfly Atlas, MacNaughton et al. 2025; iNaturalist 2025)
- Urban Hamilton Official Plan (City of Hamilton 2013)
- Fisheries and Oceans Canada (DFO) Aquatic Species at Risk (SAR) Maps (DFO 2025)
- Ontario range maps for SAR (MECP 2025)
- HCA policies (HCA 2024) and regulation mapping (HCA 2023)
- The Provincial Planning Statement (PPS) (MMAH 2024)

The information gathered from the background data review informs the scope and need for field investigations by identifying natural areas that have the potential to support SAR and SOCC within the Study Area.

3.1.1 Natural Features and Areas

The background data sources listed in Section 3.1 were reviewed to identify significant and/or designated natural areas that occur within the Study Area. The areas reviewed included ANSIs, wetlands and PSWs, areas identified as part of the municipal Natural Heritage System, watercourses, and waterbodies.

3.1.2 Species at Risk

For this report, SAR are defined as:

- Endangered (END) and threatened (THR) species that are on the SARO list and protected by the ESA
- Endangered (END) and threatened (THR) aquatic species and migratory birds that are listed on Schedule 1 of the federal SARA



A list of potential SAR that may occur in the Study Area was created using the following criteria:

- Records of species occurrence in or near the Study Area from the background sources listed in Section 3.1
- SAR with ranges that overlap with the Study Area (MECP 2025)

3.1.3 Species of Conservation Concern

Provincial ranks (S ranks) are used by the NHIC to set protection priorities for rare species and vegetation communities. They are based on the number of occurrences in Ontario. Species with provincial ranks of S1 to S3 are tracked by the MECP and considered SOCC. Provincial S-ranks are defined as follows:

- S1: Critically imperiled; usually fewer than 5 occurrences
- S2: Imperiled; usually fewer than 20 occurrences
- S3: Vulnerable; usually fewer than 100 occurrences
- S4: Apparently secure; uncommon but not rare, usually more than 100 occurrences
- S5: Secure, common, widespread and abundant
- “?” beside an S rank indicates some uncertainty with the ranking

For the purposes of this assessment, SOCC are defined as follows:

- Species that are rare or substantially declining in the province (provincial ranking of S1, S2 or S3, as ranked by the NHIC)
- Special concern (SC) species identified under the ESA on the SARO List
- Species identified as nationally endangered (END) or threatened (THR) by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) or listed under SARA, which are not protected under Ontario’s ESA

Similar to the approach for SAR, the probability of each SOCC to be present in the Study Area was assessed using the following criteria:

- Records of species occurrence in or near the Study Area from the background sources listed in Section 3.1
- SOCC with ranges that overlap with the Study Area (MECP 2024)

3.2 Field Investigations

Field investigations were completed in the fall of 2024 and the spring and summer of 2025 to describe natural heritage features within the Study Area. Field investigations included surveys for vegetation, wildlife, and fish and fish habitat. The field investigation summary is provided in Table 1.



Table 1 Field Investigation Summary

Type of Field Work	Date(s) of Field Work	Personnel
Vegetation Surveys		
Preliminary Ecological Land Classification (ELC)	October 17, 2024	J. Ball
Summer Botanical and ELC Confirmation	August 6, 2025	J. Ball
Wildlife Surveys		
Breeding Bird Surveys	June 2, 2025	J. Ball
	June 28, 2025	J. Ball
Bat Maternity Roost Assessment	October 17, 2024	J. Ball
Significant Wildlife Habitat Assessment	During vegetation surveys	J. Ball
Incidental Wildlife Observations	During all field visits	All Staff
Aquatic Habitat Surveys		
Aquatic Habitat Assessment	October 17, 2024	K. McAllister

3.2.1 Terrestrial Ecology

Field investigations to characterize the terrestrial environment included a vegetation community survey, a SAR habitat assessment, a wildlife habitat assessment, migratory bird surveys, and incidental wildlife observations. The SAR and wildlife habitat assessments focused on potential habitat for SAR and SOCC that were identified during the desktop assessment in the Study Area.

3.2.1.1 Vegetation Survey

Vegetation communities within the Study Area were classified according to the Ecological Land Classification (ELC) system for southern Ontario (Lee et al. 1998). Vegetation communities were delineated and identified on aerial photographs and verified during field investigations. Information collected for each ELC community included documentation of dominant plant species and community structure. Provincial significance of vegetation communities is based on the rankings assigned by the NHIC (MNR 2025c).

Flora nomenclature (common names and scientific names) followed the provincial vascular plant list provided by the Natural Heritage Information Centre (NHIC; MNR 2025c). NHIC common names are used throughout the report and the corresponding scientific names are provided in Appendix E.

A botanical inventory was completed in the summer of 2025. Identification of potentially sensitive native plant species was based on their assigned coefficient of conservatism (CC) value provided by Oldham et al. (1995). This CC value, ranging from 0 (low) to 10 (high), is based on a species' tolerance of disturbance and fidelity to a specific natural habitat. Species with a CC value of 8, 9 or 10 generally exhibit a high degree of fidelity to a narrow range of habitat parameters and are usually typical of high-quality plant communities.



3.2.1.2 Breeding Bird Surveys

Two breeding bird point count surveys were completed in the Study Area during early morning hours in accordance with the Ontario Breeding Bird Atlas (Cadman et al. 2007). The highest level of breeding evidence was recorded for each species. Surveys were completed for 10 minutes at 3 different point count stations that targeted natural features in the Study Area (Figure 3, Appendix A).

Survey dates, times, weather conditions, and surveyors are provided in Table 2.

Table 2 Breeding Bird Survey Dates, Times, and Weather Conditions

Survey	Date/Time	Weather				Surveyors
		Temperature (°C)	Wind (km/hr)	Cloud (%)	Precipitation/Precipitation Last 24 Hours	
1	June 2, 2025 07:22– 08:14	7	7	0	None/None	J. Ball
2	July 28, 2025 07:43-08:33	23	17	100	None/Rain	J. Ball

3.2.1.3 Bat Maternity Roost Habitat Assessment

Trees within the Study Area were assessed during leaf-off conditions on October 17, 2024, to identify trees that meet the criteria to support potential maternal roosts of SAR bats (e.g., cavities and peeling bark). The bat habitat assessment was completed following the guidance in the Treed Habitats – Maternity Roost Surveys (MECP 2022), Survey Protocol for Species at Risk Bats within Treed Habitats: Little Brown Myotis, Northern Myotis, and Tri-colored Bat (MNR 2017), and Bats and Bat Habitats: Guidelines for Wind Power Projects (MNR 2011).

As outlined in the MECP’s 2022 survey protocol, any tree with a diameter at breast height (DBH) of 10 cm or greater is considered to provide potential bat maternity roost habitat. However, trees ≥ 25 cm DBH and with a large amount of loose, peeling bark, cavities, or crevices at least 10 m high, and exhibiting the early stages of decay are considered to have higher suitability for maternal bat roosting (MNR 2011).

Stantec biologists searched the right-of-way (ROW) to identify and record potential bat maternity roost trees using ArcGIS Field Maps. The best candidate roost trees were identified using the following criteria:

- tree exhibits cavities/crevices
- cavity/crevice is located high in the snag/tree (i.e., ≥ 10 m high on tree trunk)
- tree is within the highest density of snags/cavity trees
- tree has a large amount of loose, peeling bark
- tree canopy cover is relatively open
- tree exhibits early stages of decay (i.e., decay Class 1 to 3)
- tree has the largest DBH in the survey area
- tree is one of the tallest snag/cavity trees in the survey area



- comprised of an oak or maple with dead leaf clusters

3.2.1.4 Species at Risk Habitat Assessment

The SAR habitat assessment was completed to assess the potential presence of SAR and/or SAR habitat for species whose geographic ranges overlapped with the Study Area, and for species where suitable habitat was identified as potentially present in the Study Area, based on the results of the background review, as described in Section 3.1.

3.2.1.5 Wildlife Habitat Assessments

Wildlife habitat assessments were completed during field investigations to identify potential habitat for SOCC and Significant Wildlife Habitat (SWH) as described by the Significant Wildlife Habitat Technical Guide (MNR 2000) and the Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E (MNR 2015). The MNR recognizes the following categories of wildlife habitat, each with several habitat types:

- Seasonal concentration areas of animals
- Rare vegetation communities or specialized habitat for wildlife
- Habitat for species of conservation concern
- Animal movement corridors

Where applicable, a description of the attributes and location of wildlife habitat features were recorded, such as nests, dens, candidate hibernacula, vernal pools, crayfish burrows, and seeps.

3.2.1.6 Migratory Bird Surveys

The Study Area was searched for the presence of potential migratory bird nests that are protected under the MBCA and/or the Migratory Birds Regulations under the MBCA. The search focused on nests that are often re-used by migratory birds (e.g., raptor stick nests, nests on structures in the right of way [i.e., culverts]), and searches for Pileated Woodpecker nests which receive year-round protection for a prescribed length of time ranging from 24-36 months.

3.2.1.7 Incidental Wildlife Observations

Incidental wildlife observations were recorded during the field investigations. All wildlife species identified by sight, sound, or distinctive signs/evidence during each survey were recorded.

3.2.2 Fish Community and Fish Habitat

The watercourse layer in the Geospatial Ontario database (MNR 2025a) identifies two intermittent watercourses in the Study Area. Within the Study Area, the HCA regulation mapping identifies four watercourses, three of which are regulated. Urban development has resulted in alterations to the mapped watercourses, including the creation of stormwater management ponds associated with William Connell Park and new development immediately east of West 5th Street.



A fish habitat assessment was completed within the Study Area, where access was provided, to document existing conditions. A single season aquatic habitat assessment was conducted on the mapped watercourses, using categories and classifications as per the Ontario Stream Assessment Protocol (OSAP) (Stanfield 2017).

A fish community survey was not completed based on the available information.

3.3 Wildlife Habitat Screening

3.3.1 Species at Risk and Species of Conservation Concern Habitat Screening

SAR and SOCC with suitable habitat identified in the Study Area during field investigations and at least one (1) recent record (i.e., records less than 20 years old in accordance with NHIC guidance) and/or an overlapping range with the Study Area were considered to have a reasonable probability of occurring in the Study Area. SOCC are also included in the SWH screening (Section 3.3.2) under the Habitat for Species of Conservation Concern category.

The results of the SAR and SOCC screening are summarized in Section 4.2.4 and detailed in Appendix C.

3.3.2 Significant Wildlife Habitat Screening

The results of the wildlife habitat assessment completed during field investigations were used to identify whether candidate SWH is potentially present in the Study Area based on the SWH Criterion Schedules for Ecoregion 7E (MNR 2015). Candidate SWH indicates that suitable SWH has the potential to be present; additional studies would be required to confirm the presence of SWH, which would be referred to as confirmed SWH. SOCC screened in Appendix C are also included in the SWH assessment under the Habitat for Species of Conservation Concern category.

The results of the SWH screening are summarized in Section 4.2.5 and detailed in Appendix E.



4 Existing Conditions

4.1 Background Review

4.1.1 Physiography

The Study Area is situated within Ecoregion 7E, and more specifically in the Niagara Ecodistrict (Ecodistrict 7E-5), which extends from the community of Jarvis in the west to the Niagara River in the east and follows the limestone cliffs associated with the Niagara Escarpment in the north and the shore of Lake Erie in the south. (Wester et al. 2018). The geology and substrates of the Niagara Ecodistrict are characterized by fine-textured, calcareous, glaciolacustrine deposits. Approximately three-quarters of the area have been converted to pasture and cropland. Approximately 22% of the Niagara Ecodistrict supports natural cover, which is mostly comprised of deciduous forests scattered throughout the landscape.

4.1.2 Natural Features and Areas

Intermittent watercourses to the west of West 5th Street are within the HCA Regulation Limit (Figure 1, Appendix A). There are no natural features and areas (ANSIs, wetlands and PSWs, watercourses, and waterbodies) identified within the Study Area on Geospatial Ontario Mapping (MNR 2025a). There are no Core Areas identified on Schedule B of the UHOP (City of Hamilton 2013); however, the intermittent watercourses west of West 5th Street are identified as “Key Hydrologic Features – Streams” which are considered as Core Areas. There is also a “Linkage” identified west of West 5th Street on Schedule B; however, this area has been recently developed with single family residences.

4.1.3 Species at Risk and Species of Conservation Concern

Based on the results of the background review, there are records of twenty-one (21) SAR, and thirteen (13) SOCC that overlap with the Study Area. Table 3 and Table 4 provide a summary of these species and their status.

Table 3 Species at Risk Records that Overlap with the Study Area

Common Name	Scientific Name	Provincial Status (S-Rank) ¹	SARO Status ²	SARA Status ³
Jefferson Salamander	<i>Ambystoma jeffersonianum</i>	S2	END	END
Barn Swallow	<i>Hirundo rustica</i>	S4B	SC	THR
Bobolink	<i>Dolichonyx oryzivorus</i>	S4B	THR	THR
Canada Warbler	<i>Cardellina canadensis</i>	S5B	SC	THR
Cerulean Warbler	<i>Setophaga cerulea</i>	S2B	END	THR
Chimney Swift	<i>Chaetura pelagica</i>	S3B	THR	THR
Eastern Meadowlark	<i>Sturnella magna</i>	S4B,S3N	THR	THR



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Common Name	Scientific Name	Provincial Status (S-Rank) ¹	SARO Status ²	SARA Status ³
Least Bittern	<i>Ixobrychus exilis</i>	S4B	THR	THR
Louisiana Waterthrush	<i>Parkesia motacilla</i>	S3B	SC	SC
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	-	END	END
Wood Thrush	<i>Hylocichla mustelina</i>	S4B	SC	THR
Eastern Small-footed Myotis	<i>Myotis leibii</i>	S2S3	END	-
Little Brown Myotis	<i>Myotis lucifugus</i>	S3	END	END
Northern Myotis	<i>Myotis septentrionalis</i>	S3	END	END
Tricolored Bat	<i>Perimyotis subflavus</i>	S3?	END	END
Eastern Red Bat	<i>Lasiurus borealis</i>	S4	END	-
Hoary Bat	<i>Lasiurus cinereus</i>	S4	END	-
Silver-haired Bat	<i>Lasionycteris noctivagans</i>	S4	END	-
American Columbo	<i>Frasera caroliniensis</i>	S2	END	END
Butternut	<i>Juglans cinerea</i>	S2	END	END
Spotted Wintergreen	<i>Chimaphila maculata</i>	S1	THR	THR

Notes:

SC = special concern

THR = threatened

END = endangered

- = not listed and/or ranked

¹ Provincial S-ranks (MNR 2025c)

² As listed in the Species at Risk in Ontario (SARO) List (MECP 2025)

³ As listed under Schedule 1 of the *Species at Risk Act* (SARA) (ECCC 2025)

Table 4 Potential Species of Conservation Concern in the Study Area

Common Name	Scientific Name	Provincial Status (S-Rank) ¹	SARO Status ²	SARA Status ³
Western Chorus Frog - Great Lakes - St. Lawrence - Canadian Shield population	<i>Pseudacris maculata</i> pop. 1	S4	-	THR
Northern Map Turtle	<i>Graptemys geographica</i>	S3B	SC	SC
Snapping Turtle	<i>Chelydra serpentina</i>	S4	SC	SC
Eastern Milksnake	<i>Lampropeltis triangulum</i>	S4	NAR	SC
Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	S3B, S2N, S4M	-	-
Caspian Tern	<i>Hydroprogne caspia</i>	S3B, S5M	-	-



Common Name	Scientific Name	Provincial Status (S-Rank) ¹	SARO Status ²	SARA Status ³
Common Nighthawk	<i>Chordeiles minor</i>	S4B	SC	SC
Eastern Wood-Pewee	<i>Contopus virens</i>	S4B	SC	SC
Peregrine Falcon	<i>Falco peregrinus</i>	S4B	SC	NAR
Tufted Titmouse	<i>Baeolophus bicolor</i>	S3	-	-
Upland Sandpiper	<i>Bartramia longicauda</i>	S2B	-	-
Monarch	<i>Danaus plexippus</i>	S2N, S4B	SC	END
Perfoliate Bellwort	<i>Uvularia perfoliata</i>	S1S2	-	-

Notes:

SC = special concern

THR = threatened

NAR = not at risk

¹ Provincial S-ranks (MNR 2025c)

² As listed under Species at Risk in Ontario (SARO) (MECP 2025)

³ As listed under Schedule 1 of the *Species at Risk Act* (SARA) (ECCC 2025)

4.2 Terrestrial Environment

The Study Area is mostly comprised of developed lands including residential and commercial properties, a stormwater management pond, and a parking lot and maintained lawn associated with William Connell Park. Natural features are limited to meadows, hedgerows, and naturalized vegetation associated with the stormwater management pond and outlet. The following sections outline the results of the terrestrial field investigations, as described in Section 3.2.1.

4.2.1 Vegetation Communities

Table 5 Ecological Land Classification Communities

ELC Type	Community Description
Forest (FO)	
FODM11 Naturalized Deciduous Hedgerow Ecosite	The FODM11 hedgerow was located along the north border of William Connell Park between the Park and adjacent residential properties. The canopy was comprised of mid-aged deciduous trees dominated by Black Walnut. Other canopy trees included hawthorn species, Bur Oak, and Little-leaf Linden. Common Buckthorn was present in low abundance in the shrub layer. Note: The FODM11 community is a hedgerow in the 2008 ELC updates and it is not recognized as a forest community in the 1998 ELC Manual (Lee et al. 1998).
Thicket (TH)	
THDM4-1/MEMM3	The THDM4-1/MEMM3 community was a linear community south of the FODM11 hedgerow in William Connell Park. It was dominated by shrubs and small trees that have become naturalized, with a small area of mixed meadow adjacent to West 5 th Street.



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ELC Type	Community Description
Native Deciduous Regeneration Thicket Type/ Dry – Fresh Mixed Meadow Ecosite	Dominant woody vegetation included Black Walnut, Sandbar Willow, White Cedar, and Trembling Aspen. Dominant meadow species include Canada Goldenrod and Reed Canary Grass. There were occasional meadow species present that were likely planted, including Purple Coneflower, Black-eyed Susan, Bee-balm, Blue Vervain, and Showy Tick-trefoil.
THDM5 Fresh – Moist Deciduous Thicket Ecosite	The THDM5 community was located on a slope surrounding the stormwater management pond forebay west of West 5 th Street. The low canopy was dominated by Peach-leaved Willow, Sandbar Willow, Red-osier Dogwood and Staghorn Sumac. The ground layer was dominated by Canada Goldenrod with Reed Canary Grass in lower abundance.
Meadow (ME)	
MEFM1 Dry – Fresh Forb Meadow Ecosite	The MEFM1 community was located on the opposite side of West 5 th Street from William Connell Park. It consisted of a recently disturbed site with patches of exposed soil. Dominant plants species included Wild Carrot, Reed Canary Grass, and White Sweet Clover.
Marsh (MA)	
MASM1-12 Common Reed Mineral Shallow Marsh Type	The MASM1-12 communities represented two areas dominated by Common Reed. One area
Shallow Aquatic (SA)	
SA Shallow Aquatic	The SA community represented the forebay of a large stormwater management pond.
Constructed	
CGL_2 Parkland	The CGL_2 community was comprised of a parking lot and maintained lawn associated with William Connell Park.
CVC Commercial	The CVC communities represented commercial businesses and churches in the Study Area.
CVI_1 Transportation	The CVI_1 community represented roadways in the Study Area.
CVR_1 Low Density Residential	The CVR_1 communities represented low density residential properties (townhouses) in the Study Area.
CVR_3 Single Family Residential	The CVR_3 communities represented single family residential properties in the Study Area.
CVS_2 Health	The CVS_2 community represented a nursing home in the Study Area.

4.2.2 Botanical Inventory

The following is a summary of the botanical inventory completed for the Study Area. A list of plant species, including their scientific names and conservation status, is provided in Appendix D, Table D-1.



A total of 57 vascular plants were recorded. Of the species recorded, 35 species are native to Ontario and 22 species are considered exotic species and not native to Ontario.

All native species recorded have a provincial ranking S4 or S5 (common in Ontario). All species observed, have a CC value below 8. There were several native species planted in the THDM4-1/MEMM3 community including Tulip Tree, Eastern Hemlock, and Wild Bergamot. Tulip Tree is identified as a locally rare species in the Natural Areas Inventory (HCA 2014).

4.2.3 Breeding Bird Surveys

A total of 17 bird species were observed in the Study Area during breeding bird surveys (listed in Appendix D Table D-2). There was suitable breeding habitat available for all species in the Study Area with exception of Ring-billed Gull. All species observed have provincial breeding status ranks of S5 (Secure—Common, widespread, and abundant in the province) or S4 (Apparently Secure—Uncommon but not rare). Barn Swallow (a provincial special concern species and a federally threatened species) was observed flying over BBS2 during the June 2, 2025, survey. There was no suitable breeding habitat observed from the road ROW; however, there is potential to Barn Swallow to breed in buildings outside of the ROW.

4.2.4 Bat Maternity Roosts

There were no suitable bat maternity roosts identified in or directly adjacent to the ROW during the bat maternity roost habitat assessment completed during leaf-off on October 17, 2024. The addition of new migratory SAR bat species (Eastern Red Bat, Hoary Bat, and Silver-haired Bat) that are more abundant across the Study Area increases the probability of finding SAR bats in areas not previously flagged using the Ministry of Natural Resources (MNR) survey protocols for Little Brown Myotis, Northern Myotis & Tri-Colored Bat, and introduces different habitat requirements for the new species (potential roosting habitat in foliage in saplings/shrubs in the understory for Eastern Red Bat and Hoary Bat). Shrubs and foliage in trees for Eastern Red Bat and Hoary Bat should therefore be considered as potential SAR bat habitat in addition to suitable bat maternity roost trees.

4.2.5 Species at Risk and Species of Conservation Concern Screening

Habitat for the following SAR was identified during the detailed SAR habitat screening (Appendix B, Table C-1) as potentially occurring in the Study Area based on the results of the background review and field investigations:

- SAR Bats: Seven (7) SAR bats (Little Brown Myotis, Northern Myotis, Tri-coloured Bat, Eastern Small Footed Myotis, Eastern Red Bat, Hoary Bat, and Silver-haired Bat) have the potential to roost in trees > 10 cm in diameter at breast height (DBH), shrubs, and in buildings in the Study Area.
- Chimney Swift: Residential and commercial buildings in the Study Area have the potential to provide suitable chimneys for Chimney Swifts to nest. There is low potential for Chimney Swift to use trees for nesting due to the species preference for chimneys.



Habitat for the following SOCC was identified during the detailed SOCC habitat screening (Appendix B, Table C-2) as potentially occurring in the Study Area based on the results of the background review and field investigations:

- Snapping Turtle: Suitable overwintering habitat was observed for Snapping Turtle in the stormwater management pond.
- Monarch: Monarch was observed in the Study Area during the August 7, 2025, botanical site visit. Up to 50 Common Milkweed plants (Monarch's larval host plant) were observed in the MEMM3 section of the THDM4-1/MEMM3 community (Figure 3, Appendix A).

4.2.6 Significant Wildlife Habitat Screening

The potential presence of SWH in the Study Area, including the SOCC identified in Section 4.2.5, was determined using the criteria outlined in the SWH Technical Guide (MNR 2000) and the SWH Criteria Schedules for Ecoregion 7E (MNR 2015). The SWH assessment is detailed in Appendix E. The SWH assessment identified the following Candidate SWH features in the Study Area:

- Special Concern and Rare Wildlife Species:
 - Monarch was observed in the Study Area during the August 7, 2025, botanical site visit. Up to 50 Common Milkweed plants (Monarch's larval host plant) were observed in the MEMM3 section of the THDM4-1/MEMM3 community.

4.2.7 Migratory Birds

There were no nests of breeding birds and/or migratory bird species observed in the Preferred Plan footprint during field investigations; however, nests of breeding birds and migratory bird species listed on Schedule 1 of the MBCA may occur in the Preferred Plan footprint in subsequent years.

4.2.8 Incidental Wildlife

Incidental observations of wildlife included Green Frog and Monarch. Green Frog has a provincial rank of S5, indicating it is common in Ontario. Monarch is a provincial special concern species and designated as endangered federally. Monarch was observed in the Preferred Plan footprint during the August 7, 2025, field visit. Potential candidate SWH for Monarch (in a patch of Common Milkweed, it's larval host plant) was identified outside of the Preferred Plan footprint in the MEMM3 section of the THDM4-1/MEMM3 community (Section 4.2.5). The complete list of wildlife species and their status and scientific name is provided in Table D-2, in Appendix D.

4.3 Fish and Fish Habitat

4.3.1 Watercourses and Fish Habitat

The Study Area includes mapped intermittent watercourses (MNR 2025a) as shown on Figure 2 and Figure 3, Appendix A. There is no assigned thermal regime associated with the aquatic features within the



Study Area. There are no records of provincially or federally regulated aquatic species in the watercourses within the Study Area (DFO 2025a; MNR 2025b).

Aquatic habitat observations made during the field investigation on October 17, 2024, by Stantec, are summarized by feature.

4.3.1.1 Feature A

This feature is mapped as an intermittent watercourse that crosses under West 5th Street (Figure 3, Appendix A). Urban development has resulted in alterations to this feature, including the creation of the William Connel Park stormwater management (SWM) pond and new development immediately east of West 5th Street (Google Earth 2025).

The Geospatial Ontario database (MNR 2025a) indicates that there are fish community data from the SWM pond, although no fish species are listed. The information is likely from a SWM pond cleanout.

Investigations indicated that this feature is no longer present within the Study Area. A subsurface drain that connects the SWM pond to the construction site was observed. A grass-lined ditch was also observed alongside the west side of the road, but it did not appear to connect to any other feature within the Study Area or the SWM pond.

This feature does not support fish, nor does it have the potential to provide fish habitat.

4.3.1.2 Feature B

This feature is mapped as an intermittent watercourse that runs alongside West 5th Street before turning west (Figure 3, Appendix A). A new residential subdivision has resulted in alterations to this feature at the point where it turns west from West 5th Street (Google Earth 2025).

No fish community data were available for this feature.

Investigations indicated that this feature is a dry drainage ditch alongside West 5th Street which would convey water under driveways during rain events. The surface feature is no longer present where it formerly ran in a westerly direction. The area is being developed for residential properties, and the feature has been directed to a subsurface drain.

This feature does not support fish, nor does it have the potential to provide fish habitat.

4.4 Summary of Significant Natural Heritage Features

A summary of natural heritage features that were confirmed or have the potential to be present within the Preferred Plan footprint and the Study Area 120m from the Preferred Plan footprint is provided in Table 6.

Table 6 Summary of Natural Heritage Features Within the Study Area



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Type	Species/Feature	In the Preferred Plan footprint?	In the Study Area within 120m from the Preferred Plan footprint?
HCA Regulated Features	Mapped Intermittent Watercourses	Intermittent watercourses are no longer present in the Preferred Plan footprint.	Intermittent watercourses are no longer present in the Study Area outside of the Preferred Plan footprint.
UHOP Core Areas	Key Hydrological Features	Intermittent watercourses are no longer present in the Preferred Plan footprint; therefore, Core Areas are considered absent from the Preferred Plan footprint.	Intermittent watercourses are no longer present in the Study Area outside of the Preferred Plan footprint; therefore, Core Areas are considered absent from the Study Area.
Suitable habitat for SAR	SAR Bats	SAR bats may use trees and shrubs in the Preferred Plan footprint to roost.	SAR bats may roost in trees, shrubs and buildings in the Study Area outside of the Preferred Plan footprint.
	Chimney Swift	Not present.	Chimney Swift may nest in chimneys in the Study Area outside of the Preferred Plan footprint.
Suitable habitat for SOCC	Snapping Turtle	Snapping Turtle: Suitable habitat for Snapping Turtle occurs in the stormwater management pond in the Study Area outside of the Preferred Plan footprint; however, there is potential for Snapping Turtle to enter the Preferred Plan footprint to nest on the road shoulder.	Snapping Turtle: Suitable habitat for Snapping Turtle occurs in the stormwater management pond in the Study Area outside of the Preferred Plan footprint.
	Monarch	Not present.	Monarch: Up to 50 Common Milkweed plants (Monarch's larval host plant) were observed in the MEMM3 section of the THDM4-1/MEMM3 community in the Study Area outside of the Preferred Plan footprint.
Significant Wildlife Habitat	Candidate Habitat for SOCC	Refer to "Suitable habitat for SOCC".	
Breeding and Migratory Birds	Bird nests	Nests of breeding birds and migratory bird species listed on Schedule 1 of the MBCA may occur in the Preferred Plan footprint.	Nests of breeding birds and migratory bird species listed on Schedule 1 of the MBCA may occur in the Study Area outside of the Preferred Plan footprint.
Fish Habitat	Mapped Watercourses/ Features	Not Present	Not Present



5 Proposed Works

The Preferred Plan for improvements to the West 5th Street road corridor from Stone Church Road West to Rymal Road West shows the preference for safety and options for all types of users and it includes the following features:

- Centre two-way left turn lane
- Boulevard space between the cycle track and road for planting trees
- Cycle track on both sides
- Sidewalk on both sides

The sidewalk and cycle track are proposed near the outside edge of the new ROW (26 m) to provide room for street trees.



6 Impact Assessment

This section provides a discussion of potential direct and indirect impacts that may result from the Project. For the purposes of this report, it is assumed all lands within the Preferred Plan footprint could be disturbed/impacted. Direct impacts are those expected to occur in the short term, such as during or immediately after the site preparation or construction and are limited to the immediate vicinity of the Project.

Potential indirect impacts from sediment transport, noise and dust are more difficult to quantify than direct effects and are anticipated to take place outside of the Preferred Plan footprint. Mitigation measures are proposed to address known and potential direct and indirect impacts that result from the Project.

6.1 Terrestrial Environment

Potential impacts on natural features have been considered based on the proposed Preferred Plan shown on Figure 3, Appendix A.

6.1.1 Potential Disturbance to Species at Risk

SAR bats and SAR bat habitat was identified as potentially occurring in the Preferred Plan footprint and has the potential to be impacted by the Project.

6.1.2 Loss of Natural Vegetation

The road improvements along West 5th Street are primarily within the existing road allowance and the natural features that overlap with the Preferred Plan footprint are limited. The Project will result in direct loss of approximately 0.1 ha of natural vegetation within the Preferred Plan footprint.

Temporary, short-term indirect impacts to vegetation outside of the Preferred Plan footprint may also occur during construction. Potential indirect impacts to natural features that are adjacent to the Preferred Plan footprint include vegetation disturbance, soil compaction, sedimentation, contamination from spills, noise and dust generation. Indirect impacts associated with the construction phase of the Project can be addressed through the application of erosion and sediment control measures described in Section 7.1.

Direct loss of natural vegetation is outlined in Table 7.

Table 7 **Overlap of Natural Vegetation Communities with the Preferred Plan**

ELC Community	Area to be Removed (ha)
FODM11 (Naturalized Deciduous Hedge-Row Ecosite)	0.01
MASM1-12 (Common Reed Mineral Shallow Marsh Type)	0.02
MEFM1 (Dry - Fresh Forb Meadow Ecosite)	0.05
MEGM3 (Dry - Fresh Graminoid Meadow Ecosite)	0.02



An Arborist Report was prepared by Stantec in 2025 (under separate cover) that includes a Tree Management Plan, Detailed Tree Inventory (DTI), and General Tree Inventory (GTI). Eighty-three (83) trees were identified for removal in the Arborist Report that overlap with the Project Footprint.

6.1.2.1 Bat Species at Risk

Woody vegetation (trees and shrubs) in the Preferred Plan footprint has the potential to provide roosting habitat for SAR bats (Appendix B, Table C-1).

Removal of woody vegetation has the potential to cause direct harm to SAR bats or to damage roosting habitat for SAR bats. SAR bats could be directly harmed if suitable bat maternity roost trees are removed during the active season for bats (i.e., April 1 to September 30). Measures to reduce the potential for direct impacts to SAR bats are outlined in Section 7.3.1 and regulatory requirements for SAR bats under the ESA are outlined in Section 8.1.2.

Indirect impacts to SAR bats may include bats avoiding the area due to disturbance from construction activities; however, the disturbance is anticipated to be temporary during construction.

6.1.3 Potential Interference with Bird Nests

Natural vegetation within the Preferred Plan footprint has potential to support nesting birds, and construction activities near active bird nests have potential to cause direct impacts to bird nests (e.g., damage or destroy nests, including eggs and young) and indirect impacts to nesting behaviour (e.g., disturbance causing birds to abandon their nest or attempts to nest adjacent to construction activities). Direct impacts may occur if vegetation clearing within the Preferred Plan footprint occurs during ECCC's "general nesting periods" for migratory birds for Canada (ECCC 2018) which is generally April 1 to August 31 in southern Ontario.

Indirect impacts to nesting bird behaviour adjacent to construction activities are anticipated to be temporary during construction. Measures to mitigate direct impacts to bird nests are outlined in Section 7.3.2.

6.1.4 Potential for Wildlife Encounters

Wildlife species (i.e., amphibians, reptiles, small mammals) have potential to enter the Preferred Plan footprint during construction. Potential impacts to wildlife during construction include direct impacts (i.e., death, harm, or harassment) or indirect impacts to wildlife habitat (i.e., vegetation removal, erosion of sediment into natural features).

6.2 Fish and Fish Habitat

Based on the background review and field investigation completed within the Study Area, fish and fish habitat are absent, and as such, there are no anticipated impacts. Fish and fish habitat are absent and no Project works below the normal high-water mark are planned; therefore, the provisions listed in the *Fisheries Act* do not apply.



7 Mitigation Recommendations

The mitigation measures in the sections below are recommended to reduce the potential for impacts to vegetation and wildlife based on the impact assessment.

7.1 Erosion and Sediment Control

Mitigation measures for sedimentation, erosion, and dust control will be implemented to prevent sediment and dust from entering natural features. The primary principles associated with sedimentation and erosion protection measures are to:

- (a) reduce the duration of soil exposure
- (b) retain existing vegetation, where feasible
- (c) encourage re-vegetation
- (d) divert runoff away from exposed soils
- (e) keep runoff velocities low
- (f) trap sediment as close to the source as possible

To address these principles, the following mitigation measures are proposed:

- Silt fencing and/or barriers are recommended along Work Zones where there is potential for inadvertent encroachment of construction vehicles into natural features.
- Avoid entering any natural areas beyond the vegetation protection fencing with equipment and avoid excess vegetation removal.
- Stabilize exposed soil areas (native seed mixes; sourced locally if possible) and re-vegetate through the placement of seed and mulching or seed and an erosion control blanket, promptly upon completion of construction activities.
- In addition to any specified requirements, additional silt fence will be available on site, prior to grading operations, to provide a contingency supply in the event of an emergency.
- Monitor all sediment and erosion controls regularly and properly maintain, as required. Remove controls only after the soils of the construction area have been stabilized and adequately protected or until cover is re-established.
- The limits of construction adjacent to natural features to be retained will be fenced prior to construction and monitored during construction to maintain limits with respect to the grading limit, vehicular traffic, and soil or equipment stockpiling.
- Restore any disturbed natural areas to pre-construction conditions.

7.2 Vegetation Protection and Restoration

Vegetation protection includes the installation of construction barrier fencing at the limit of grading adjacent to natural areas, and re-vegetation of temporarily disturbed areas using native species suitable for site



conditions. Re-vegetation of disturbed natural areas, including the use of native upland meadow seed mixes, should be introduced to temporarily disturbed substrates in the ROW as soon as feasible following construction, and fencing should remain in place until vegetation cover is re-established. Re-vegetation should include only native plants that are suitable to the site conditions and may include woody and herbaceous plant material if appropriate. Re-vegetation plans should be prepared to the satisfaction of the City.

Compensation requirements for the trees proposed for removal were identified in the Arborist Report (Stantec 2025) as follows:

- Total Compensation for Private Trees Required: 14
- Total Compensation for Public Trees Required: 68
- Total Compensation for Trees Required: 82

7.2.1 Invasive Phragmites Control

Common reed (*Phragmites*) is a 'restricted' invasive plant species regulated by the *Ontario Invasive Species Act* (2015), and under the Act it is illegal to import, deposit, release, grow, buy, sell, lease, or trade this species. Invasive *Phragmites* was identified in roadside ditches in three areas in the Preferred Plan footprint (Figure 3, Appendix A). To reduce the spread of *Phragmites*, equipment shall be cleaned before leaving the site in accordance with the 'Clean Equipment Protocol for Industry' (Stewardship Council and Ontario Invasive Plant Council 2013) to avoid transport of soil containing invasive *Phragmites* to other sites.

Where the construction area overlaps areas of *Phragmites*, proper disposal measures should be taken. Disposal methods for invasive *Phragmites* should follow the *Invasive Phragmites (Phragmites australis) Best Management Practices in Ontario* (Nichols 2020) and include leaving cut *Phragmites* biomass on the site where plant parts will not spread or disturb sensitive habitats or species, or bagging *Phragmites* into thick, industrial-grade garbage bags and disposing of the material at a municipal landfill facility, where permitted.

7.3 Wildlife Protection

7.3.1 Bat Species at Risk

Trees and shrubs may be used by SAR bats during the active season for bats, which includes the bat maternity roosting season. The MECP has recommended a new timing window for the active season for bats to include migratory SAR bats later in the season from April 1 to November 30. MECP has also included an earlier active season for bats to include Small-footed Bat starting March 15. The new active season for bats that should be implemented for the Project to avoid potential contravention of the ESA is therefore recommended as March 15 to November 30 in the absence of bat acoustic surveys to identify the presence/absence of SAR bats.

Therefore, woody vegetation removal is proposed to occur outside of the active season for bats, to reduce the likelihood of harm to SAR bats. The installation of artificial bat maternity roost structures (e.g., bat rocket boxes or Branden Bark structures) may be considered to compensate for the removal of potential SAR bat



habitat. Bat acoustic surveys can be completed prior to tree and shrub removal in accordance with MNR protocols to confirm presence/absence of SAR bats in the Preferred Project Footprint. Consultation with the MECP will be required if SAR bats are confirmed present to determine authorization requirements under the ESA or the new *Species Conservation Act*. If acoustic surveys are not completed, SAR bats will be assumed present, and consultation will also be required.

7.3.2 Migratory Birds

Vegetation clearing is recommended to take place outside of ECCC's "general nesting periods" for migratory birds which generally extends from April 1 to August 31 in southern Ontario (ECCC 2018). If work must take place during the nesting period and the area is small enough to be effectively searched for nesting birds, then a nest search can be completed by a qualified biologist. The area where vegetation is to be removed must be searched within five days prior to the work commencing. In accordance with the MBCA, if nests are located, they must be protected with a buffer appropriate for the species as determined by a qualified professional, and no work will be permitted in the area until the nest is no longer active.

If an active nest is observed during construction, a designated buffer will be delineated within which no activity will be permitted while the nest is active (i.e., with eggs or young). Once the nest is determined to be inactive (e.g., the young have fledged the nest), vegetation clearing and other construction activities in the area may proceed.

An active nest that is found in the Preferred Plan footprint outside of the general nesting period is still protected under the MBCA, and measures to protect the active nest from construction activities must still be implemented.

7.3.3 General Wildlife Mitigation

Potential impacts to wildlife during construction can be reduced through standard erosion and sedimentation control measures and vegetation protection.

The following environmental mitigation and protective measures for wildlife are recommended:

- For work proposed during the active season for reptiles and amphibians (e.g., April 1 – November 30; weather dependent), exclusion fencing (e.g., silt fencing) is recommended at the limit of the Preferred Plan footprint adjacent to the SWM pond to reduce the likelihood of reptiles and amphibians from entering the construction area.
- Complete a thorough visual search of the work zones for reptiles, amphibians and other ground-dwelling wildlife before work commences each day, including inspection of machinery and equipment during the peak activity period of reptiles and amphibians from April 1 to November 1.
- Reduce speed limits within the construction area, with equipment and vehicles yielding to wildlife. The contractor should inform their personnel to not threaten, harass or injure wildlife. If a wildlife species is encountered during construction, personnel are required to stop work in the area and allow the animal to move out of the construction site under its own power. If slow-moving wildlife (e.g., turtles, snakes, fledgling birds) are observed in the construction area and are in danger, they should be moved off the site by gently guiding the individual in the direction it was traveling, if safe to do so.



West 5th Street Natural Environment Assessment Report

7 Mitigation Recommendations

October 17, 2025

- If encountered, turtle nests must be avoided and protected by excluding construction activities in the area.



8 Policy Conformance and Regulatory Approval Requirements

8.1 Federal

8.1.1 Fisheries Act

Intermittent watercourses are no longer present in the Preferred Plan footprint; therefore, the provisions listed in the *Fisheries Act* do not apply.

8.1.2 Species at Risk Act

The Project does not occur on federal lands. The results of the background review and field program completed by Stantec have determined that habitat for migratory birds listed on Schedule 1 of the SARA (Government of Canada 2025c) was not observed in the Study Area where developments are proposed. No aquatic species or critical habitat for aquatic species that are listed on Schedule 1 of the SARA are mapped by DFO in the Study Area (DFO 2025a). As such, the Project is not subject to the SARA or associated regulations.

8.1.3 Migratory Birds Convention Act

Migratory bird habitat nesting habitat regulated by the MBR was not observed in the Study Area; therefore, permits or authorizations under the MBCA are not required to support the Project. Mitigation measures to protect migratory birds and their nests are recommended in Section 7.3.2.

8.2 Provincial

8.2.1 Environmental Assessment Act, 1990

The Project is being completed in accordance with the Municipal Class Environmental Assessment process. This report provides a description of the existing natural environment, documents the potential impacts of the Project, and describes preliminary measures to mitigate Project impacts to support the EA.

8.2.2 Provincial Policy Statement, 2024

The PPS offers the overriding policy to protect the natural heritage features and embody the goals and principles of the City Official Plans. The natural heritage policy features of the PPS have been documented for the Study Area, and impacts have been assessed for each feature. The PPS represents minimum standards to protect natural heritage features in a municipality; however, planning authorities can exceed these standards.

SAR bats may use trees and shrubs in the Preferred Plan footprint to roost. Sections 4.1.6 and 4.1.7 of the PPS state that development and site alteration shall not be permitted in the habitat of endangered or



threatened species, except in accordance with provincial and federal requirements. Consultation with the MECP will be required under the ESA or the new Species Conservation Act as outlined in Section 10.3.

8.2.3 Conservation Authorities Act

Under Ontario Regulation 41/24 of the CAA, a permit may be required due to the overlap of proposed construction activities with mapped intermittent watercourses that are regulated by the HCA in the Study Area. The intermittent watercourses were not observed in the Preferred Plan footprint during field investigations; however, consultation with HCA is still required to determine whether a permit is necessary.

8.2.4 Endangered Species Act

SAR Bats are protected by the ESA and have the potential to be impacted by the Project. Consultation with MECP through the submission of an Information Gathering Form (IGF) is recommended prior to woody vegetation removal to determine authorization and mitigation requirements under the ESA. The Ontario government has proposed changes to species at risk legislation in Ontario, replacing the ESA with a new Species Conservation Act (SCA). The SCA is expected to be enacted as early as late 2025 and may include a different authorization process. Bat acoustic surveys can be completed in accordance with MNR protocols to confirm presence/absence of SAR bats in the Preferred Plan footprint. Consultation with the MECP will be required if bat SAR are confirmed present to determine authorization requirements under the ESA or the new *Species Conservation Act*.

8.2.5 Fish and Wildlife Conservation Act, 1997

Measures to avoid contravening the Fish and Wildlife Conservation Act are provided in Section 7.3 (Wildlife Protection). This includes the installation of appropriate erosion and sediment control measures, methods for managing wildlife encounters, and vegetation removal outside of the sensitive timing windows for birds and bats.

8.3 Municipal

8.3.1 Urban Hamilton Official Plan

Key Hydrological Features were identified as Core Areas on Schedule B of the UHOP; however, field investigations identified that these intermittent watercourses were no longer present in the Preferred Plan footprint due to recent new development in the Study Area.

Not all Core Areas have been identified on the Schedules within the UHOP. This includes significant habitat for threatened and endangered species, significant wildlife habitat, seeps and springs, and significant valleylands. SAR bats have the potential to use trees and shrubs in the Preferred Plan footprint to roost. Section C.2.5.2 of the UHOP states that “new development and site alteration shall not be permitted within significant habitat of threatened and endangered species”. Consultation with the MECP will be required under the ESA or the new Species Conservation Act as outlined in Section 8.2.4.



9 Summary and Conclusions

Stantec prepared this report to document natural heritage features in the Study Area, identify potential impacts on the features from the Project, recommend mitigation measures to reduce impacts, and identify potential authorizations and permits that may be required. The road improvements along West 5th Street are primarily within the existing road allowance and the natural features that overlap with the Preferred Plan footprint are limited.

Natural features and species overlap with the Preferred Plan footprint as follows:

- Approximately 0.1 ha of natural vegetation overlaps with the Preferred Plan footprint
- SAR bats may use trees in the Preferred Plan footprint to roost.
- There is potential for Snapping Turtle to enter the Preferred Plan footprint to nest on the road shoulder.
- Nests of breeding birds and migratory bird species listed on Schedule 1 of the MBCA may occur in the Preferred Plan footprint.

Prior to undertaking development activities, authorization may be required from the MECP and HCA as outlined in Section 8:

- MECP consultation through the submission of an IGF is recommended to determine authorization and mitigation requirements under the ESA for SAR bats. The Species Conservation Act is expected to be enacted as early as late 2025 and may include a different authorization process.
- Activities that overlap with mapped intermittent watercourses that are regulated by the HCA may require a permit from the HCA under the *Conservation Authorities Act*.

Recommended mitigation measures to reduce potential impacts on vegetation and wildlife species were provided in Section 7 as follows:

- Erosion and sediment control measures
- Vegetation protection and restoration measures and invasive Phragmites management
- Timing restrictions to avoid wildlife during sensitive periods, such as breeding birds and maternity roosting bats
- General wildlife mitigation measures

Removal of approximately 0.1 ha of natural vegetation will occur. Potential long-term impacts on the terrestrial environment, including natural cover, wildlife species, and wildlife habitat in the Study Area, are anticipated to be minor provided the recommended mitigation measures are implemented during construction.



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Appendices

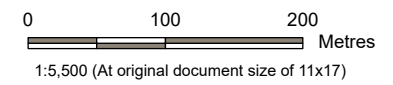


Appendix A Figures





- Legend**
- Preferred Plan
 - Study Area



- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © King's Printer for Ontario, 2024.
 3. Orthomagey © First Base Solutions, 2024. Hamilton Wentworth Region 2023



Project Location: City of Hamilton
 Prepared by jsa on 2025-10-17
 Technical Review by ABC on yyyy-mm-dd

Client/Project: CITY OF HAMILTON
 MUNICIPAL CLASS EA FOR WEST 5TH STREET FROM
 STONE CHURCH ROAD WEST TO RYMAL ROAD WEST

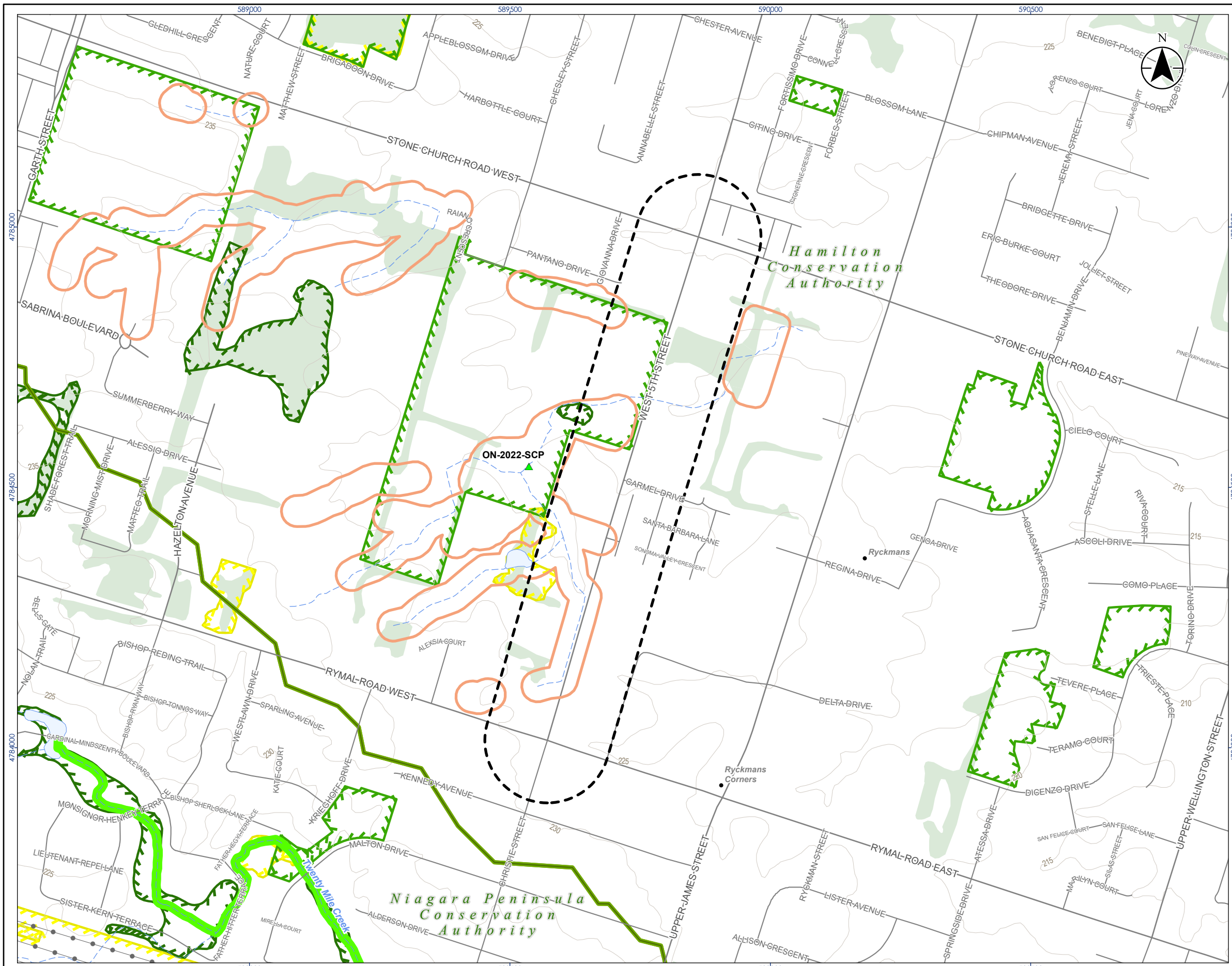
Figure No. **1**

Title: **Study Area**

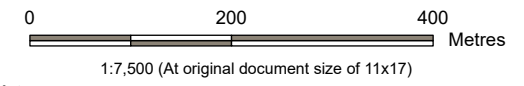
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- Legend**
- Study Area
 - ▲ Fish Survey Point (ARA)
 - Major Road
 - Minor Road
 - Hydro Line
 - Watercourse (Intermittent)
 - Watercourse (Permanent)
 - Contour (5 m Interval)
 - Aquatic Species at Risk Distribution
 - Waterbody
 - Wooded Area
 - Conservation Authority Administrative Boundary
 - Regulation Limit (Hamilton Conservation Authority)
- City of Hamilton Natural Heritage System**
- Core Areas
 - Linkages
 - Parks and General Open Space



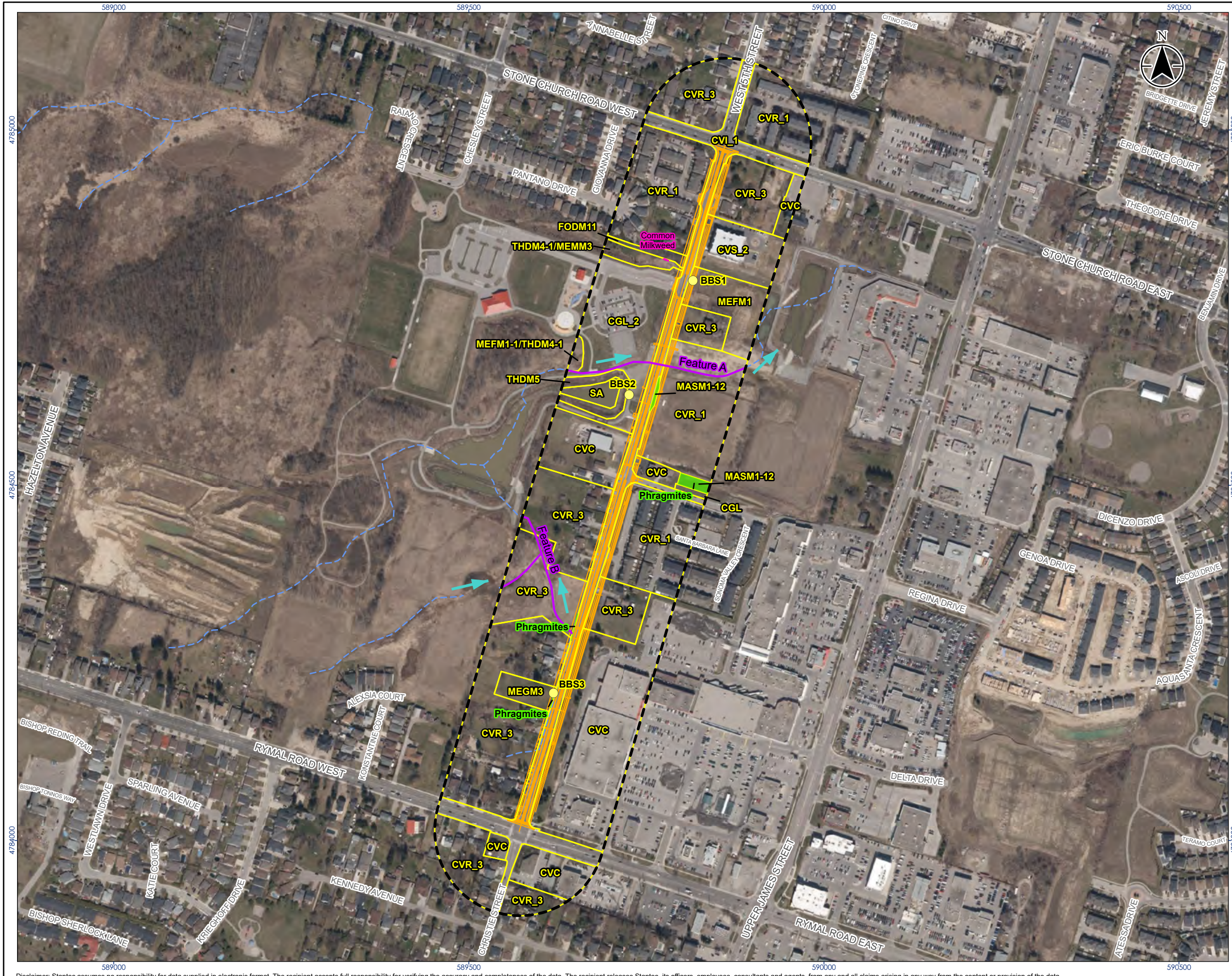
- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
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 3. Orthimagery © First Base Solutions, 2024. Hamilton Wentworth Region 2023
 4. Includes data licensed by the Hamilton Region Conservation Authority, Regulation Limit.
 5. Includes data licensed by the City of Hamilton, Natural Heritage System: Core Area, Linkages and Parks and General Open Space.

Project Location: City of Hamilton
 Prepared by jsa on 2025-10-17
 Technical Review by ABC on yyyy-mm-dd

Client/Project: CITY OF HAMILTON
 MUNICIPAL CLASS EA FOR WEST 5TH STREET FROM
 STONE CHURCH ROAD WEST TO RYDAL ROAD WEST

Figure No.: **2**
 Title: **Natural Heritage Background Review**

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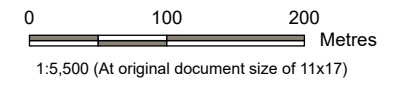


Legend

- Preferred Plan
- Study Area
- Flow Direction
- Watercourse (Intermittent)
- Intermittent Feature - No Longer Present
- Ecological Land Classification (ELC)
- Phragmites
- Common Milkweed
- Breeding Bird Survey Location

ELC Legend

- CGL** (Green Lands)
- CGL_2** (Parkland)
- CVC** (Commercial and Institutional)
- CVI_1** (Transportation)
- CVR_1** (Low Density Residential)
- CVR_3** (Single Family Residential)
- CVS_2** (Health)
- FODM11** (Naturalized Deciduous Hedge-row Ecosite)
- MASM1-12** (Common Reed Mineral Shallow Marsh Type)
- MEFM1** (Dry - Fresh Forb Meadow Ecosite)
- MEFM1-1** (Goldenrod Forb Meadow Type)
- THDM4-1** (Native Deciduous Regeneration Thicket Type)
- MEGM3** (Dry - Fresh Graminoid Meadow Ecosite)
- SA** (Shallow Water)
- THDM4-1** (Native Deciduous Regeneration Thicket Type)
- MEMM3** (Dry - Fresh Mixed Meadow Ecosite)
- THDM5** (Fresh - Moist Deciduous Thicket Ecosite)



- Notes**
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 Prepared by jsa on 2025-10-17
 Technical Review by ABC on yyyy-mm-dd

Client/Project: CITY OF HAMILTON
 MUNICIPAL CLASS EA FOR WEST 5TH STREET FROM
 STONE CHURCH ROAD WEST TO RYMAL ROAD WEST

Figure No. **3**
 Title: **Natural Heritage - Existing Conditions**

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 Revised: 2025-10-17 By: jsa
 4784500
 4784000

Appendix B Terms of Reference





Stantec Consulting Ltd.
200-835 Paramount Drive
Stoney Creek ON L8J 0B4

February 5, 2025
Project/File: 165001381

Nora Jamieson

Hamilton Conservation Authority (HCA)
838 Mineral Springs Road
Ancaster, ON L9G 4X1
Nora.Jamieson@conservationhamilton.ca

Dear Nora Jamieson,

Reference: Terms of Reference and Information Request for a Natural Environment Assessment Report for the Municipal Class Environmental Assessment for West 5th Street from Stone Church Road West to Rymal Road West in Hamilton, ON

1 Introduction

Stantec Consulting Ltd. (Stantec) was retained by the City of Hamilton to complete a Natural Environment Assessment Report for the Municipal Class Environmental Assessment (EA) for West 5th Street from Stone Church Road West to Rymal Road West in the City of Hamilton, Ontario. The Study Area is shown on Figure 1 (attached). Our work will document the existing ecological (terrestrial and aquatic) features in the Study Area, assess the potential impacts to the natural environment, and identify appropriate measures to avoid or mitigate impacts where possible.

The purpose of this Terms of Reference (ToR) is to establish the level of effort that is required for the ecological inventory and assessment. The Natural Environment Assessment Report will be prepared following guidance in the Conservation Authority Baseline Ecological Assessment Requirements for Municipal Class Environmental Assessments and the Environmental Impact Statement (EIS) Guidelines (2015) provided by the City of Hamilton. For this assessment, the Study Area includes all lands within 120 m from the current road alignment as shown on Figure 1 (attached).

2 Regulatory and Policy Framework

The following legislation, policy and planning documents will be considered in preparation of the Natural Environment Assessment Report:

- *Federal Fisheries Act, 1985*
- *Species at Risk Act, 2002*
- *Ontario Endangered Species Act, 2007*
- *Conservation Authorities Act, 1990*, and associated Hamilton Conservation Authority (HCA) Policies
- Provincial Policy Statement, 2024
- Urban Hamilton Official Plan, 2022

Reference: Terms of Reference and Information Request for a Natural Environment Assessment Report for the Municipal Class Environmental Assessment for West 5th Street from Stone Church Road West to Rymal Road West in Hamilton, ON

3 Background Review

Stantec will complete a review of background information including:

- Ministry of Natural Resources (MNR) Land Information Ontario (LIO) database (MNR 2024a)
- MNR Natural Heritage Information Centre (NHIC) database (MNR 2024b)
- Ministry of the Environment Conservation and Parks (MECP) Species at Risk in Ontario (SARO) List (MECP 2024)
- Environment and Climate Change Canada (ECCC) Species at Risk Public Registry: Schedule 1 (ECCC 2024)
- Fisheries and Oceans Canada (DFO) Aquatic Species at Risk (SAR) mapping (DFO 2024)
- Ontario Reptile and Amphibian Atlas (Ontario Nature 2020)
- Ontario Breeding Bird Atlas (Cadman et. al. 2007)
- Atlas of the Mammals of Ontario (Dobbyn 1994)
- Urban Hamilton Official Plan (City of Hamilton 2022)
- iNaturalist (iNaturalist 2024)
- eBird (eBird 2024)

The MECP does not typically provide pre-consultation on threatened and endangered species. Background information on species protected under the Endangered Species Act (ESA) will be based on the resources listed above in addition to Stantec professional knowledge of the area. Field Investigations will confirm and update background data, and document natural features in the Study Area.

4 Proposed Work Schedule

The proposed work plan and schedule for the Natural Environmental Assessment Report Study Area is outlined in Table 1 below. One field visit for terrestrial ecosystems occurred October 10, 2024 for the “fall 2024” period identified below.

The work plan includes details of the background review, proposed site investigations, natural environment evaluation and reporting requirements, and the anticipated completion date for each task.

Table 1 Proposed Work Plan and Schedule

Task No.	Task Description	Completion Date
1. Background Review	Background review – complete a review of available background information for the Study Area listed above.	October 2024

Reference: Terms of Reference and Information Request for a Natural Environment Assessment Report for the Municipal Class Environmental Assessment for West 5th Street from Stone Church Road West to Rymal Road West in Hamilton, ON

Task No.	Task Description	Completion Date
2. Site Investigations (to be completed from road right-of-way)	<p>Vegetation surveys (2 season) – a two-season floral inventory and vegetation community characterization to be completed in the fall 2024 and summer 2025*. The floral inventory will document dominant species in the Study Area, with a particular emphasis on species at risk (SAR) and rare species. Vegetation community mapping will be completed using Ecological Land Classification system (ELC) for Southern Ontario (Lee et al 1998), and 2008 updates where applicable. Wetlands will be delineated using the Ontario Wetland Evaluation System (OWES) (MNRF 2014) as a guide.</p>	<p>Field visit 1: October 2024 (completed) Field visit 2: Spring or Summer 2025 (June/July)* *Based on results from the first visit in October, it was determined that a two season inventory is sufficient to capture vegetation due to the limited natural features in the project extent. A survey in summer would best target peak growing season for most species.</p>
	<p>Tree inventory – Stantec’s ISA Certified Arborists will conduct a Tree Inventory (GVI) under a separate cover as per the City of Hamilton Tree Protection Guidelines (October 2010). Site visits will be completed to inventory and assess the trees within the existing West 5th Street right-of-way. Site observations, including those of other environmental disciplines, will form the basis of the analysis and recommendations provided in the GVI. Locations of individual trees will not be noted on plans except where there is a specific need to address in the analysis. Tree units will be denoted as groupings on plans.</p>	<p>October 2024 (completed)</p>
	<p>Breeding bird survey – two site visits during the breeding bird season (June), including surveys for grassland SAR, using the Ontario Breeding Bird Atlas: Instructions for General Atlassing (OBBA 2021), Survey Protocol for Eastern Meadowlark (<i>Sturnella magna</i>) in Ontario (OMNR 2013), and Draft Bobolink Survey Methodology (OMNR 2011). The survey will also screen for birds listed on Schedule 1 of the Migratory Birds Regulations, 2022 (e.g., Pileated Woodpecker).</p>	<p>Two site visits: Summer (June 2 and between June 15 – July 10, 2025)</p>
	<p>Bat habitat assessment – identify potential roost trees that may be used by bat SAR or as maternity roost (for candidate significant wildlife habitat). The assessment will follow the Species at Risk Bats Survey Notes 2022 (MECP 2022a) and Maternity Roost Surveys (MECP 2022b).</p>	<p>October 2024 (completed)</p>
	<p>Candidate significant wildlife habitat assessment – identification of candidate significant wildlife habitat (SWH) in the Study Area. Candidate SWH will be identified using the SWH Technical Guide (OMNR 2000) and SWH Ecoregion (7E) Criteria Schedules (MNRF 2015) for the Study Area. This survey will be completed during the ELC surveys and will include searches for candidate wildlife habitats such as snake hibernacula, raptor nests, seepage areas and vernal pools.</p>	<p>October 2024, Summer 2025 (June/July)</p>

Reference: Terms of Reference and Information Request for a Natural Environment Assessment Report for the Municipal Class Environmental Assessment for West 5th Street from Stone Church Road West to Rymal Road West in Hamilton, ON

Task No.	Task Description	Completion Date
	<p>Species at risk habitat screening – identification of potential SAR habitat will be completed for the Study Area. Targeted species will be based on the SAR identified during the background review as potentially present in the Study Area. For the purpose of this assessment, SAR are species listed as Threatened or Endangered on the SARO list or migratory birds and aquatic species classified as Threatened or Endangered on SARA Schedule 1. Habitat screening for potential SAR will be based on the results of the vegetation and wildlife field investigations.</p>	<p>October 2024, Summer 2025 (June/July)</p>
	<p>Fish and fish habitat assessment – watercourse layer in the Land Information Ontario (LIO) database identifies two intermittent watercourses in the Study Area. Within the Study Area, the HCA regulation mapping identifies four watercourses, three of which are regulated. Urban development has resulted in alterations to the mapped watercourses, including the creation of stormwater management ponds associated with William Connell Park and new development immediately east of West 5th Street. Based on available information, there is low potential for fish habitat within the Study Area; however, the scope of work includes a fish habitat assessment to document existing conditions. Due to the previous alterations to the mapped watercourses within the Study Area, a headwater drainage feature (HDF) assessment is not proposed. Within the Study Area, a single season aquatic habitat assessment will be conducted on the mapped watercourses, using categories and classifications as per the Ontario Stream Assessment Protocol (OSAP). A fish community survey is not proposed.</p>	<p>October 2024 (completed)</p>

5 Assumptions and Exclusions

The need for environmental permits and authorizations will be identified (conservation authority, species at risk, fish, and fish habitat). Applications for permits and approvals, including a DFO request for review (Fisheries Act review) are not in the scope of work based on the low potential for fish habitat. Further, a headwater drainage feature (HDF) assessment is not proposed.

6 Information Request

We respectfully request confirmation that our proposed scope of work is appropriate for this assignment. We are also requesting information that the Hamilton Conservation Authority may have for the Study Area including rare species, vegetation communities, wetlands, special habitat features, regulated areas, watercourse flow and thermal regimes, fish community data, and other relevant natural heritage data.

Reference: Terms of Reference and Information Request for a Natural Environment Assessment Report for the Municipal Class Environmental Assessment for West 5th Street from Stone Church Road West to Rymal Road West in Hamilton, ON

7 Summary

This ToR is intended to meet the study and reporting requirements to address regulatory requirements. In submitting this for the Hamilton Conservation Authority review, we ask for comments and suggestions that will allow us to finalize this document. We look forward to discussing the scope of the Natural Environment Assessment Report.

Regards,

Stantec Consulting Ltd.

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Attachment: Figure 1 – Study Area

Reference: Terms of Reference and Information Request for a Natural Environment Assessment Report for the Municipal Class Environmental Assessment for West 5th Street from Stone Church Road West to Rymal Road West in Hamilton, ON

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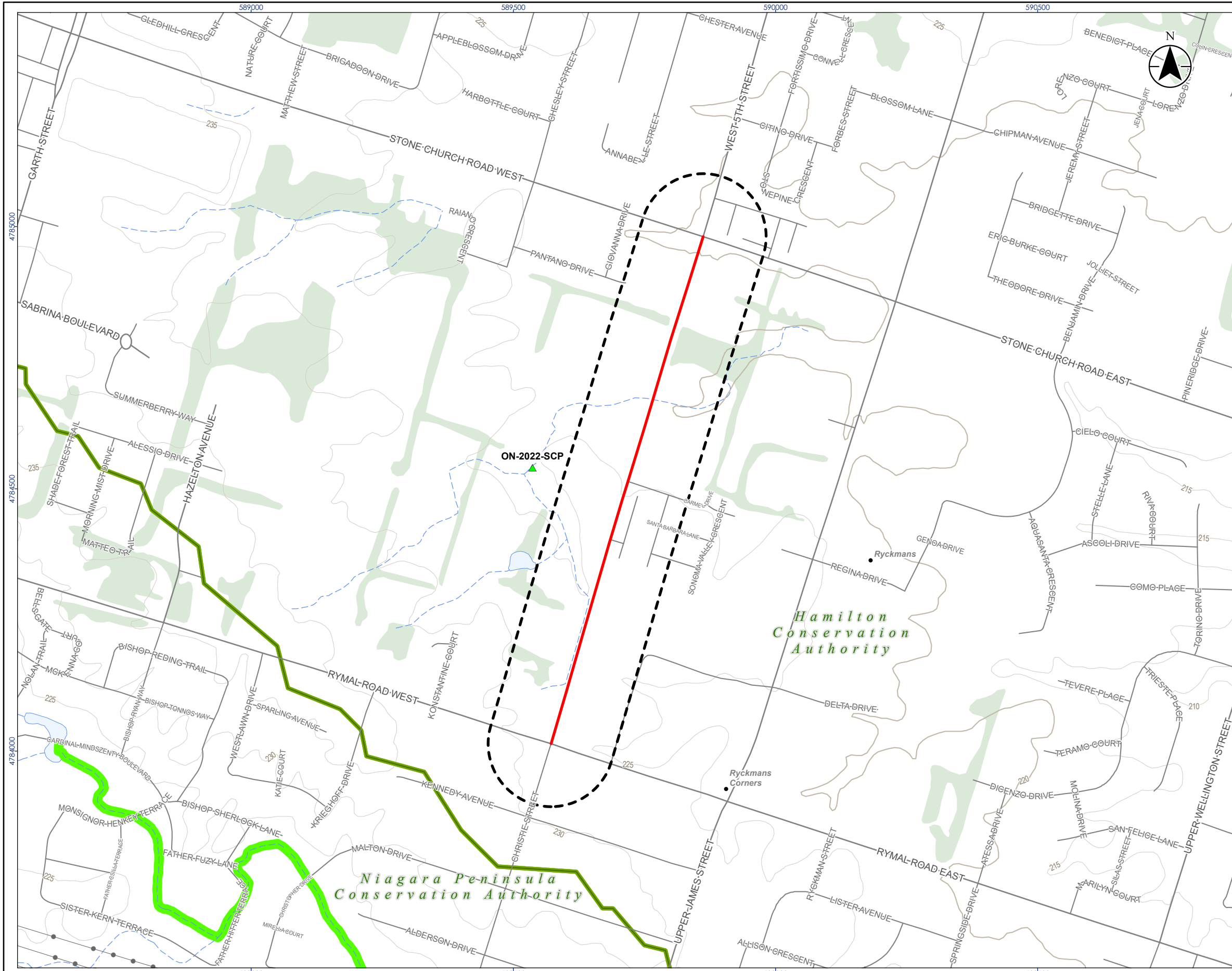
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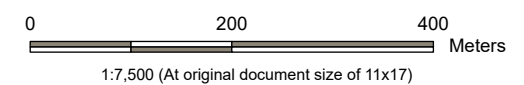
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- Legend**
- Project Extent
 - Study Area
 - ▲ Fish Survey Point (ARA)
 - Major Road
 - Minor Road
 - Contour (10 m Interval)
 - Contour (5 m Interval)
 - Hydro Line
 - Watercourse (Intermittent)
 - Watercourse (Permanent)
 - Conservation Authority Administrative Boundary
 - Aquatic Species at Risk Distribution
 - Waterbody
 - Wooded Area



- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © King's Printer for Ontario, 2024.



Project Location: City of Hamilton rfp-C11-49-24 REV6
Prepared by jsa on 2024-05-02

Client/Project:
CITY OF HAMILTON
MUNICIPAL CLASS EA FOR WEST 5TH STREET FROM
STONE CHURCH ROAD WEST TO RYMAL ROAD WEST

Figure No.
1
Title
Natural Heritage Background Data

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Appendix C Species at Risk and Species of Conservation Concern Habitat Assessments



Appendix C1: 165001381 Species at Risk Habitat Assessment

Species Group	Common Name	Scientific Name	SARO Status	SARA Status	Provincial Status (S-Rank)	Source(s)	Habitat Description	Potential Presence in the Study Area (Y/N)
Amphibians	Jefferson Salamander	<i>Ambystoma jeffersonianum</i>	END	END	S2	Ontario Nature 2020	Terrestrial during the adult stage and inhabits upland deciduous forests with suitable breeding areas including limestone sinkhole ponds, kettle ponds, vernal pools and other natural basins. Breeding areas are often ephemeral and are fed by spring runoff, groundwater, or springs.	N: Suitable breeding and forest habitat is absent from the Study Area.
Birds	Barn Swallow	<i>Hirundo rustica</i>	SC	THR	S4B	Cadman et. al 2007, eBird 2025	Commonly nests on walls or ledges of barns, bridges, culverts, or other human-made structures.	N: One Barn Swallow was observed as a flyover during the June 2, 2025 breeding bird survey; however, there is low potential for Barn Swallow to nest in the Study Area based on only one occurrence of Barn Swallow recorded in the Study Area during the survey.
Birds	Bobolink	<i>Dolichonyx oryzivorus</i>	THR	THR	S4B	Cadman et. al 2007	Bobolink is generally referred to as a "grassland species". It nests primarily in forage crops with a mixture of grasses and broad-leaved forbs, predominantly hayfields and pastures. Preferred ground cover species include grasses such as Timothy and Kentucky bluegrass and forbs such as clover and dandelion. Bobolink is an area-sensitive species, with reported lower reproductive success in small habitat fragments.	N: Large grassland areas were absent from the Study Area. Bobolink was not recorded in the Study Area during breeding bird surveys.
Birds	Canada Warbler	<i>Cardellina canadensis</i>	SC	THR	S5B	Cadman et. al 2007	The Canada Warbler is found in wet deciduous, coniferous and mixed forests with a dense shrub layer and complex forest floor, in riparian shrub forests, regenerating stands and in old-growth forest. It nests on the ground or on mossy logs or roots near stream banks or on hummocks.	N: Forest habitat is absent from the Study Area.
Birds	Cerulean Warbler	<i>Setophaga cerulea</i>	THR	END	S2B	Cadman et. al 2007	Breeds in mature deciduous or swamp forest. The species generally prefers tracts over 100 ha in size but it has been found to breed in woodlots as small as 10 ha. In Ontario, the species is generally associated with large oak or bitternut hickory trees.	N: Suitable forest habitat is absent from the Study Area.
Birds	Chimney Swift	<i>Chaetura pelagica</i>	THR	THR	S3B	Cadman et. al 2007, eBird 2025	Uses chimneys for roosting and breeding, and, less commonly, nests in large hollow trees.	Y: Residential and commercial buildings in the Study Area have the potential to provide suitable chimneys for Chimney Swifts to nest. There is low potential for trees in the Project Footprint to support nesting habitat as Chimney Swift prefers chimneys for nesting.
Birds	Eastern Meadowlark	<i>Sturnella magna</i>	THR	THR	S4B,S3N	Cadman et. al 2007, eBird 2025	Breeds in open grassland habitat, including active hay and pasture fields.	N: Meadow habitat was either small or recently disturbed, and therefore unsuitable as breeding habitat for Eastern Meadowlark. Eastern Meadowlark was not recorded in the Study Area during breeding bird surveys.
Birds	Least Bittern	<i>Ixobrychus exilis</i>	THR	THR	S4B	Cadman et. al 2007	Least Bittern prefers cattail marshes, but may be found in a variety of wetland habitats with stable water levels and dense vegetation interspersed with open water areas. Nests are built in dense vegetation near open water for foraging.	N: Suitable wetland habitat was not observed in the Study Area during field investigations.
Birds	Louisiana Waterthrush	<i>Parusia motacilla</i>	SC	SC	S3B	Cadman et. al 2007	Prefers deciduous and mixed forests with a strong Eastern Hemlock component, in deeply incised ravines. It will also inhabit large flooded tracts of mature deciduous swamp forest.	N: Ravines and suitable forest and swamp habitat are absent from the Study Area.
Birds	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	END	END	S3	Cadman et. al 2007	Red-headed Woodpecker prefers open woodlands and forest edges and is often found in disturbed areas such as cemeteries, parks and golf courses. This species shows a preference for dead or dying trees and at least a few snags or large dead limbs are necessary for its presence in more open habitats	N: Woodland and forest edges were absent and there were no snags or dying trees observed in the Study Area.
Birds	Wood Thrush	<i>Hylocichla mustelina</i>	SC	THR	S4B	Cadman et. al 2007	Nests mainly in second growth and mature deciduous and mixed forests, with saplings and well-developed understory layers.	N: Forest habitat is absent from the Study Area.

Appendix C1: 165001381 Species at Risk Habitat Assessment

Species Group	Common Name	Scientific Name	SARO Status	SARA Status	Provincial Status (S-Rank)	Source(s)	Habitat Description	Potential Presence in the Study Area (Y/N)
Mammals	Eastern Small-footed Myotis	<i>Myotis leibii</i>	END	-	S2S3	Dobbyn 1994	Primarily roosts under loose rocks on exposed rock outcrops, crevices, and cliffs, and occasionally in buildings, under bridges and highway overpasses and under tree bark.	Y: The FODM11 hedgerow and isolated planted trees in the Study Area may provide suitable roosting habitat for bats.
Mammals	Little Brown Myotis	<i>Myotis lucifugus</i>	END	END	S3	Dobbyn 1994	Roost in trees and buildings. Often select attics, abandoned buildings and barns. Hibernate in caves or abandoned mines.	Y: The FODM11 hedgerow and isolated planted trees in the Study Area may provide suitable roosting habitat for bats.
Mammals	Northern Myotis	<i>Myotis septentrionalis</i>	END	END	S3	Dobbyn 1994	Associated with boreal forests. Roost under loose bark and in tree cavities. Hibernate in caves or abandoned mines.	Y: The FODM11 hedgerow and isolated planted trees in the Study Area may provide suitable roosting habitat for bats.
Mammals	Tri-colored Bat	<i>Perimyotis subflavus</i>	END	END	S3?	Dobbyn 1994	The Tri-colored Bat roosts in colonies in tree cavities in various deciduous and coniferous forest stands. It is strongly associated with forest watercourses and streamside vegetation.	Y: The FODM11 hedgerow and isolated planted trees in the Study Area may provide suitable roosting habitat for bats.
Mammals	Eastern Red Bat	<i>Lasiurus borealis</i>	END	END	S4	Dobbyn 1994	Summer habitat for this migratory bat species includes mostly treed areas for roosting. They roost alone or with pups in foliage in trees and shrubs and prefer to be at the edge of the tree crown for predatory protection. It will occupy both coniferous and deciduous forests of any age.	Y: The FODM11 hedgerow and isolated planted trees in the Study Area may provide suitable roosting habitat for bats.
Mammals	Hoary Bat	<i>Lasiurus cinereus</i>	END	END	S4	Dobbyn 1994	Summer habitat for this migratory bat species includes mostly treed areas for roosting. They roost alone or with pups in foliage in trees and shrubs and prefer to be at the edge of the tree crown for predatory protection. It will occupy both coniferous and deciduous forests of any age.	Y: The FODM11 hedgerow and isolated planted trees in the Study Area may provide suitable roosting habitat for bats.
Mammals	Silver-haired Bat	<i>Lasionycteris noctivagans</i>	END	END	S4	Dobbyn 1994	Roosting occurs under bark and in tree cavities where large decaying coniferous or deciduous trees are present. Females with maternity roosts will be in small groups. They may also occasionally roost in or on buildings, especially during migration.	Y: The FODM11 hedgerow and isolated planted trees in the Study Area may provide suitable roosting habitat for bats.
Plants	American Columbo	<i>Frasera caroliniensis</i>	END	END	S2	iNaturalist 2025	Occurs in a variety of habitats but is most commonly associated with dry open forested slopes but can be found in clearings and thickets as well as swampy areas.	N: The entire Study Area has been previously disturbed or developed and habitat for American Columbo is no longer available.
Plants	Butternut	<i>Juglans cinerea</i>	END	END	S2?	NHC (MNR 2025b)	Usually grows alone or in small groups in deciduous forests. Prefers moist, well-drained soil and is often found along streams. Also found on well-drained gravel sites, does not do well in shade, and often grows in sunny openings and near forest edges.	N: Butternut was not observed in the Study Area during field investigations.
Plants	Spotted Wintergreen	<i>Chimaphila maculata</i>	THR	THR	S1	NHC (MNR 2025b)	Occurs in a variety of forested habitats including coniferous, mixed, and deciduous forests, as well as dry sand communities	N: Forest and dry sand communities are absent from the Study Area.

Appendix C2: 165001381 Species of Conservation Concern Habitat Assessment

Species Group	Common Name	Scientific Name	SARO Status	SARA Status	Provincial Status (S-Rank)	Source(s)	Habitat Description	Potential Presence in the Study Area (Y/N)
Amphibians	Western Chorus Frog - Great Lakes - St. Lawrence - Canadian Shield population	<i>Pseudacris maculata pop. 1</i>	-	THR	S4	Ontario Nature 2020	The Western Chorus Frog prefers small, temporary wetlands isolated from other water sources for breeding conditions. The vegetation in breeding ponds is mainly herbaceous, with occasional shrubs or partially submerged trees creating an open canopy. Some populations may also breed at the edges of closed-canopy habitats.	N: Temporary wetlands for breeding were absent from the Study Area.
Reptiles	Northern Map Turtle	<i>Graptemys geographica</i>	SC	SC	S3B	Ontario Nature 2020, iNaturalist 2025	Map turtles are highly aquatic and inhabit slow moving, large rivers and lakes with soft bottoms and abundant aquatic vegetation. Basking sites include rocks and deadheads adjacent to deep water. Nesting occurs in soft sand or soil and at a distance from the water, hibernation is communal and occurs at the bottoms of lakes.	N: Large rivers or lakes were absent from the Study Area.
Reptiles	Snapping Turtle	<i>Chelydra serpentina</i>	SC	SC	S4	Ontario Nature 2020	Inhabits shallow waters where they can hide under soft mud and leaf litter. Nesting sites usually occur on gravelly or sandy areas along streams. Snapping Turtles often take advantage of human-made structures for nest sites, including roads (especially gravel shoulders), dams and aggregate pits.	Y: Snapping Turtle has potential to occur in the stormwater management pond outside of the Project Footprint.
Reptiles	Eastern Milksnake	<i>Lampropeltis triangulum</i>	NAR	SC	S4	Ontario Nature 2020	Uses open habitats such as meadows, fields, rocky outcrops and forest edges. Overwintering sites include rock crevices, mammal burrows and the foundations of old buildings.	N: There were no snake hibernacula features observed in the Project Footprint, and there is a low potential to encounter Eastern Milksnake in the Study Area due to the highly urbanized environment.
Birds	Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	-	-	S3B, S2N, S4M	eBird 2025	Nests in colonies in trees or on the ground in elevated areas of islands. Uses stick nests on platforms to nest.	N: Habitat is absent from the Study Area.
Birds	Caspian Tern	<i>Hydroprogne caspia</i>	-	-	S3B, S5M	eBird 2025	Nests in colonies and prefers sparsely vegetated flat rocky islands, beaches, and sandy shores of the Great Lakes.	N: Habitat is absent from the Study Area.
Birds	Common Nighthawk	<i>Chordeiles minor</i>	SC	SC	S4B	Cadman et. al 2007, eBird 2025	Common Nighthawk is found in open and partially-open habitats such as sand dunes and beaches, logged and recently burned forests, woodland clearings, prairies, plains, sagebrush, grasslands, bogs and rock outcrops. Gravel rooftops are also used as nesting sites in urban areas (Cornell Lab of Ornithology 2019; COSEWIC 2018).	N: Open habitat in the Study Area was disturbed (i.e., maintained lawn, grading for new development), and therefore unsuitable for Common Nighthawk to nest. Gravel rooftops are absent from the Study Area.
Birds	Eastern Wood-Pewee	<i>Contopus virens</i>	SC	SC	S4B	Cadman et. al 2007, NHC (MNR 2025b), eBird 2025	Inhabits mature and intermediate aged deciduous and mixed forests with little understory vegetation and forest clearings and edges.	N: Forest habitat is absent from the Study Area.
Birds	Peregrine Falcon	<i>Falco peregrinus</i>	SC	NAR	S4B	Cadman et. al 2007, eBird 2025	Traditionally, in Ontario, it has been a rare breeder, preferring suitable rock cliffs, particularly those adjacent to water. More recently the species has been released in various urban centers in Ontario where it successfully nests on tall buildings. Relatively recent increases in abundance and distribution are owing to now established populations in natural areas and urban environments.	N: Tall buildings or cliff habitat are absent from the Study Area.
Birds	Tufted Titmouse	<i>Baeolophus bicolor</i>	-	-	S3	Cadman et. al 2007	Prefers deciduous forests but will occupy mixed coniferous-deciduous forests. It can be found in urban or agricultural areas if tall deciduous trees are present, typically in areas with a dense canopy and many tree species.	N: Forest habitat and areas of dense canopy are absent from the Study Area. Tufted Titmouse was not recorded in the Study Area during breeding bird surveys.

Appendix C2: 165001381 Species of Conservation Concern Habitat Assessment

Species Group	Common Name	Scientific Name	SARO Status	SARA Status	Provincial Status (S-Rank)	Source(s)	Habitat Description	Potential Presence in the Study Area (Y/N)
Birds	Upland Sandpiper	<i>Bartramia longicauda</i>	-	-	S2B	Cadman et. al 2007	A grassland species of native prairie requiring low to moderate forb cover, low woody cover, moderate grass cover, moderate to high litter cover, and little bare ground.	N: Suitable meadow habitat is absent from the Study Area.
Invertebrates	Monarch	<i>Danaus plexippus</i>	SC	END	S2N,S4B	McNaughton et. al 2023	Found primarily wherever milkweed and wildflowers (including goldenrods, asters and purple loosestrife) exist. The larvae occur only where milkweed exists; adults are more generalized, feeding on a variety of wildflower nectar. This includes abandoned farmland, along roadsides, and other open spaces where these plants grow.	Y: Monarch was observed in the Study Area during the August 7, 2025 botanical site visit. Up to 50 Common Milkweed plants (Monarch's larval host plant) were observed in the MEMM3 section of the THDM4-1/ MEMM3 community (Figure 3, Appendix A).
Plants	Perfoliate Bellwort	<i>Uvularia perfoliata</i>	-	-	S1S2	NHC (MNR 2025b)	Grows in moist, shady deciduous forests and woodlands. It prefers rich, well-drained soils with organic material.	N: Forest habitat is absent from the Study Area.

Appendix D Species Lists



Appendix D.1: 165001381 Plant Species List

STUDY AREA	FODM11	THDM4-1/ MEMM3	SWM Pond SA/ THDM5	MEFM1	MASM1-12	SCIENTIFIC NAME	COMMON NAME	PROVINCIAL STATUS (S-RANK)	SARO STATUS	SARA STATUS	COSEWIC STATUS	LOCAL STATUS	COEFFICIENT OF CONSERVATISM
GYMNOSPERMS (Conifers)													
		x				<i>Juniperus virginiana</i>	Eastern Red Cedar	S5					4
		x				<i>Pinus strobus</i>	Eastern White Pine	S5					4
		x				<i>Thuja occidentalis</i>	Eastern White Cedar	S5					4
		x				<i>Tsuga canadensis</i>	Eastern Hemlock	S5					7
ANGIOSPERMS (Dicots)													
		x	x		x	<i>Acer negundo</i>	Manitoba Maple	S5					0
			x			<i>Acer platanoides</i>	Norway Maple	SE5				I	
		x				<i>Acer rubrum</i>	Red Maple	S5					4
		x	x			<i>Acer saccharinum</i>	Silver Maple	S5					5
		x	x			<i>Amelanchier sp.</i>	Serviceberry species	SU					
		x	x			<i>Arctium minus</i>	Common Burdock	SE5				I	
		x		x		<i>Asclepias syriaca</i>	Common Milkweed	S5					0
				x		<i>Cichorium intybus</i>	Wild Chicory	SE5				I	
		x	x	x		<i>Cirsium arvense</i>	Canada Thistle	SE5				I	
		x				<i>Cirsium vulgare</i>	Bull Thistle	SE5				I	
		x	x		x	<i>Cornus sericea</i>	Red-osier Dogwood	S5					2
	x					<i>Crataegus sp.</i>	Hawthorn species	SU					
		x	x	x	x	<i>Daucus carota</i>	Wild Carrot	SE5				I	
		x				<i>Desmodium canadense</i>	Canada Tick-trefoil	S4					5
		x	x	x		<i>Dipsacus fullonum</i>	Common Teasel	SE5				I	
		x				<i>Echinacea purpurea</i>	Eastern Purple Coneflower	SE1					
				x		<i>Erigeron canadensis</i>	Canada Horseweed	S5					0
		x		x		<i>Euthamia graminifolia</i>	Grass-leaved Goldenrod	S5					2
		x				<i>Hypericum perforatum</i>	Common St. John's-wort	SE5				I	
	x	x				<i>Juglans nigra</i>	Black Walnut	S4?					5
				x		<i>Lactuca serriola</i>	Prickly Lettuce	SE5				I	
		x				<i>Liriodendron tulipifera</i>	Tulip Tree	S4				H	8
			x	x		<i>Lotus corniculatus</i>	Garden Bird's-foot Trefoil	SE5				I	
		x	x		x	<i>Lythrum salicaria</i>	Purple Loosestrife	SE5				I	
			x	x		<i>Melilotus albus</i>	White Sweet-clover	SE5				I	
		x				<i>Monarda fistulosa</i>	Wild Bergamot	S5					6
				x		<i>Oenothera biennis</i>	Common Evening-primrose	S5					0
			x			<i>Physocarpus opulifolius</i>	Eastern Ninebark	S5					5
		x				<i>Populus deltoides</i>	Eastern Cottonwood	S5					4
		x				<i>Populus tremuloides</i>	Trembling Aspen	S5					2
	x					<i>Quercus macrocarpa</i>	Bur Oak	S5					5
	x					<i>Rhamnus cathartica</i>	European Buckthorn	SE5				I	
		x	x		x	<i>Rhus typhina</i>	Staghorn Sumac	S5					1
		x				<i>Robinia hispida</i>	Bristly Locust	SE1					
		x	x			<i>Rubus idaeus</i>	Red Raspberry	S5					2
			x			<i>Rubus occidentalis</i>	Black Raspberry	S5					2
		x	x			<i>Rudbeckia hirta</i>	Black-eyed Susan	S5					0
				x		<i>Rumex crispus</i>	Curled Dock	SE5				I	
			x			<i>Salix amygdaloides</i>	Peach-leaved Willow	S5					6
		x	x			<i>Salix interior</i>	Sandbar Willow	S5					1
		x	x			<i>Securigera varia</i>	Purple Crown-vetch	SE5				I	
		x	x	x	x	<i>Solidago canadensis</i>	Canada Goldenrod	S5					1

STUDY AREA	FODM1	THDM4-1/ MEMM3	SWM Pond SA/ THDM5	MEFM1	MASM1-12	SCIENTIFIC NAME	COMMON NAME	PROVINCIAL STATUS (S-RANK)	SARO STATUS	SARA STATUS	COSEWIC STATUS	LOCAL STATUS	COEFFICIENT OF CONSERVATISM
x		x	x	x		<i>Sonchus arvensis</i>	Field Sow-thistle	SE5				I	
x			x	x		<i>Symphotrichum lanceolatum</i>	Panicled Aster	S5					3
x				x		<i>Symphotrichum pilosum</i>	Old Field Aster	S5					
x	x					<i>Tilia cordata</i>	Little-leaved Linden	SE1				I	
x		x		x		<i>Verbena hastata</i>	Blue Vervain	S5					4
x		x	x	x		<i>Vicia cracca</i>	Tufted Vetch	SE5				I	
x	x	x	x	x		<i>Vitis riparia</i>	Riverbank Grape	S5					0
ANGIOSPERMS (Monocots)													
x		x	x	x		<i>Phalaris arundinacea</i>	Reed Canarygrass	S5					0
x					x	<i>Phragmites australis</i>	Common Reed	SE				I	0
x				x		<i>Poa pratensis</i>	Kentucky Bluegrass	S5				I	0
x			x		x	<i>Typha angustifolia</i>	Narrow-leaved Cattail	SE5					

FLORISTIC SUMMARY	TOTAL
Total Species	57
Native Species	35
Introduced (exotic) species	22
Species at Risk in Ontario (END, THR or SC)	0
Rare in Ontario (S1, S2 or S3)	0
Uncommon to common in Ontario (S4)	3
Common to very common in Ontario (S5)	30
Locally Rare (H)	1
Highly sensitive plant species with CC value greater than 8	0

DEFINITIONS

SARO: Species at Risk in Ontario

SARA: Species at Risk Act

COSEWIC: Committee on the Status of Endangered Wildlife in Canada

Local Status: 2014 Hamilton Natural Areas Inventory Project 3rd Edition

S1: Critically Imperiled—Critically imperiled in the province (often 5 or fewer occurrences)

S2: Imperiled—Imperiled in the province, very few populations (often 20 or fewer),

S3: Vulnerable—Vulnerable in the province, relatively few populations (often 80 or fewer)

S4: Apparently Secure—Uncommon but not rare

S5: Secure—Common, widespread, and abundant in the province

SE#: Introduced species

SU: Status unknown

?: Indicates uncertainty with the ranking

END: Endangered

THR: Threatened

SC: Special Concern

Appendix D.2: 165001381 Wildlife Species List

COMMON NAME	SCIENTIFIC NAME	PROVINCIAL STATUS (S-Rank)	SARO STATUS	SARA STATUS	COSEWIC RANK	LOCAL RANK
BUTTERFLIES						
Monarch	<i>Danaus plexippus</i>	S4B, S2N	SC	SC		Common
AMPHIBIANS						
Green Frog	<i>Lithobates clamitans</i>	S5				Abundant
BIRDS						
Canada Goose	<i>Branta canadensis</i>	S5				Common
Mallard	<i>Anas platyrhynchos</i>	S5				Common
Mourning Dove	<i>Zenaidura macroura</i>	S5				Abundant
Killdeer	<i>Charadrius vociferus</i>	S4B				Abundant
Ring-billed Gull	<i>Larus delawarensis</i>	S5				Abundant
Northern Flicker	<i>Colaptes auratus</i>	S5				Common
Blue Jay	<i>Cyanocitta cristata</i>	S5				Abundant
American Crow	<i>Corvus brachyrhynchos</i>	S5				Common
Barn Swallow	<i>Hirundo rustica</i>	S4B	SC	THR	SC	Common
American Robin	<i>Turdus migratorius</i>	S5				Abundant
Gray Catbird	<i>Dumetella carolinensis</i>	S5B, S3N				Abundant
European Starling	<i>Sturnus vulgaris</i>	SNA				Abundant
House Sparrow	<i>Passer domesticus</i>	SNA				Abundant
American Goldfinch	<i>Spinus tristis</i>	S5				Abundant
Song Sparrow	<i>Melospiza melodia</i>	S5				Abundant
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	S5				Abundant
Common Grackle	<i>Quiscalus quiscula</i>	S5				Abundant

Explanation of Status and Acronyms

SARO: Species at Risk in Ontario

SARA: Species at Risk Act

COSEWIC: Committee on the Status of Endangered Wildlife in Canada

S1: Critically Imperiled—Critically imperiled in the province (often 5 or fewer occurrences)

S2: Imperiled—Imperiled in the province, very few populations (often 20 or fewer),

S3: Vulnerable—Vulnerable in the province, relatively few populations (often 80 or fewer)

S4: Apparently Secure—Uncommon but not rare

S5: Secure—Common, widespread, and abundant in the province

SNA: Not applicable because the species is not a suitable target for conservation activities

S#S#: Used to indicate any range of uncertainty about the status of the species

S#B: Breeding status rank

S#N: Non breeding status rank

?: Indicates uncertainty in the assigned rank

END: Endangered

THR: Threatened

SC: Special Concern

Local Status: 2014 Hamilton Natural Areas Inventory Project 3rd Edition

Appendix E Significant Wildlife Habitat Assessment



Appendix E: 165001381 Significant Wildlife Habitat Assessment

Candidate SWH	Ecoregion 7E Criteria	Methods	Candidate SWH Present in the Study Area?
Seasonal Concentration Areas			
Waterfowl Stopover and Staging Area (Terrestrial)	Fields with sheet water during spring (mid-March to May), or annual spring melt water flooding found in any of the following Community Types: Meadow (CUM1), Thicket (CUT1). Agricultural fields with waste grains are commonly used by waterfowl, and these are not considered SWH unless they have sheet water available.	ELC surveys were used to assess features within the Study Area that may support waterfowl stopover and staging areas (terrestrial).	Absent. There are no large meadows or thicket communities in the Study Area.
Waterfowl Stopover and Staging Area (Aquatic)	The following Community Types: Meadow Marsh (MAM), Shallow Marsh (MAS), Shallow Aquatic (SA), Deciduous Swamp (SWD). Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. The combined area of the ELC ecosites and a 100 m radius area is the SWH. Sewage treatment ponds and storm water ponds do not qualify as a SWH; however, a reservoir managed as a large wetland or pond/lake does qualify.	ELC surveys were used to assess features within the Study Area that may support waterfowl stopover and staging areas (aquatic).	Absent. Wetlands in the Study Area are not suitable to provide habitat for large aggregations of waterfowl.
Shorebird Migratory Stopover Area	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 amour 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 significant wildlife habitat. The following community types: Meadow Marsh (MAM), shoreline (BB), or Sand Dune (SD).	ELC surveys and wildlife habitat assessments were used to assess features within the Study Area that may support migratory shorebirds.	Absent. Wetlands in the Study Area are not suitable to support large aggregations of shorebirds.
Raptor Wintering Area	At least one of the following Forest Community Types: Deciduous Forest (FOD), Mixed Forest (FOM) or Coniferous Forest (FOC), in combination with one of the following Upland Community Types: Meadow (CUM1), Thicket (CUT1), Savannah (CUS1), Woodland (CUW1) (<60% cover) that are >20 ha and provide roosting, foraging and resting habitats for wintering raptors. Upland habitat (CUM1, CUT1, CUS1, CUW1), must represent at least 15 ha of the 20 ha minimum size.	ELC surveys and GIS analysis were used to assess features within the Study Area that may support wintering raptors.	Absent. The ELC vegetation communities are not of sufficient size to support wintering raptors.
Bat Hibernacula	Hibernacula may be found in caves, mine shafts, underground foundations and karsts. May be found in these Community Types: Crevice (CCR), Cave (CCA).	ELC surveys were used to assess features within the Study Area that may support bat hibernacula.	Absent. Suitable underground habitat is not present in the Study Area.
Bat Maternity Colonies	Maternity colonies considered significant wildlife habitat are found in forested ecosites. Either of the following Community Types: Deciduous Forest (FOD), Mixed Forest (FOM), Coniferous Forest (FOC), Deciduous Swamp (SWD), Mixed Forest (SWM) and Coniferous Forest (SWC) that have wildlife trees >10 cm diameter at breast height (dbh). Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered to be SWH). Female Bats prefer wildlife tree (snags) in the early stages of decay, class 1-3 or class 1 or 2. Northern Myotis prefer contiguous tracts of older forest cover for foraging and roosting in snags and trees. 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.	ELC surveys and bat acoustic surveys were used to assess features within the Study Area that may support bat maternity colonies.	Absent. Forest and swamp communities are absent from the Study Area.
Turtle Wintering Areas	Snapping and Midland Painted turtles utilize ELC community classes: Swamp (SW), Marsh (MA) and Open Water (OA). Shallow water (SA), Open Fen (FEO) and Open Bog (BOO). Northern Map turtle- open water areas such as deeper rivers or streams and lakes can also be used as over-wintering habitat. Water has to be deep enough not to freeze and have soft mud substrate. Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate dissolved oxygen.	ELC surveys and wildlife habitat assessments were used to assess features within the Study Area that may support areas of permanent standing water but not deep enough to freeze.	Absent. The stormwater management pond has potential to provide overwintering habitat for Snapping Turtle; however, stormwater management ponds do not qualify as SWH.

Appendix E: 165001381 Significant Wildlife Habitat Assessment

Candidate SWH	Ecoregion 7E Criteria	Methods	Candidate SWH Present in the Study Area?
Snake Hibernacula	Hibernation occurs in sites located below frost lines in burrows, rock crevices, broken and fissured rock, and other natural features. Wetlands can also be important over-wintering habitats 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 ground cover. Any ecosite in southern Ontario other than very wet ones may provide habitat. The following Community Types may be directly related to snake hibernacula: Talus (TA), Rock Barren (RB), Crevice (CCR), Cave (CCA), and Alvar (RBOA1, RBSA1, RBTA1).	ELC surveys and wildlife habitat assessments were used to assess features within the Study Area that may support snake hibernacula.	Absent. There were no suitable snake hibernacula features observed in the Study Area.
Colonial-Nesting Bird Breeding Habitat (Bank and Cliff)	Eroding banks, sandy hills, borrow pits, steep slopes, sand piles, cliff faces, bridge abutments, silos, or barns found in any of the following Community Types: Meadow (ME), Thicket (TH), Bluff (BL), Cliff (CL). Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles. Does not include a licensed/permitted Mineral Aggregate Operation.	ELC surveys and wildlife habitat assessments were used to assess features within the Study Area that may support colonial bird breeding habitat.	Absent. Cliff/Bank Swallow habitat features were not observed in the Study Area.
Colonial-Nesting Bird Breeding Habitat (Tree/Shrubs)	Identification of stick nests in any of the following Community Types: Mixed Swamp (SWM), Deciduous Swamp (SWD), Treed Fen (FET). The edge of the colony and a minimum 300 m area of habitat or extent of the Forest Ecosite containing the colony or any island <15.0 ha with a colony is the SWH. Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used.	ELC surveys and wildlife habitat assessments were used to assess features within the Study Area that may support colonial bird breeding habitat (Trees/Shrubs).	Absent. There were no stick nests observed in the Study Area.
Colonial-Nesting Bird Breeding Habitat (Ground)	Any rocky island or peninsula within a lake or large river. For Brewer's Blackbird, close proximity to watercourses in open fields or pastures with scattered trees or shrubs found in any of the following Community Types: Meadow Marsh (MAM1-6), Shallow Marsh (MAS1-3), Meadow (CUM1), Thicket (CUT1), Savannah (CUS1).	ELC surveys and wildlife habitat assessments were used to assess features within the Study Area that may support colonial bird breeding habitat (Ground).	Absent. Peninsulas and islands are not present in the Study Area.
Migratory Butterfly Stopover Areas	Located within 5 km of Lake Ontario. A combination of ELC communities, one from each land class is required: Field (ME, TH) and Forest (FOC, FOM, FOD). Minimum of 10 ha in size with a combination of field and forest habitat present.	ELC surveys and GIS analysis were used to assess features within the Study Area that may support migratory butterfly stopover areas.	Absent. The Study Area is greater than 5 km from Lake Ontario and forest communities are absent.
Land Bird Migratory Stopover Areas	The following community types: Forest (FOD, FOM, FOC) or Swamp (SWC, SWM, SWD). Woodlots must be >10 ha in size and within 5 km of Lake Ontario – woodlands within 2 km of Lake Ontario are more significant.	ELC surveys and GIS analysis were used to assess features within the Study Area that may support land bird migratory stopover areas.	Absent. The Study Area is greater than 5 km from Lake Ontario and forest and swamp communities are absent.
Deer Winter Congregation Areas	Woodlots typically >100 ha in size unless determined by the MNR as significant. (If large woodlots are rare in a planning area >50 ha). All forested ecosites within Community Series: FOC, FOM, FOD, SWC, SWM, SWD. Conifer plantations much smaller than 50 ha may also be used.	No studies required as the MNR delineates this habitat.	Absent. Deer winter congregation areas are not identified by the MNR in the Study Area.
Rare Vegetation Communities			
Cliffs and Talus Slopes	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. Any ELC Ecosite within Community Series: TAO, TAS, TAT, CLO, CLS, CLT. Most cliff and talus slopes occur along the Niagara Escarpment.	ELC surveys were used to assess features within the Study Area that would be considered cliffs or talus slopes.	Absent. The listed ELC vegetation community types are not present in the Study Area.
Sand Barrens	Sand barrens typically are exposed sand, generally sparsely vegetated and cause by lack of moisture, periodic fires and erosion. Vegetation can vary from patchy and barren to tree covered but less than 60%. Any of the following Community Types: SBO1 (Open Sand Barren Ecosite), SBS1 (Shrub Sand Barren Ecosite), SBT1 (Treed Sand Barren Ecosite).	ELC surveys were used to assess features within the Study Area that would be considered to be sand barrens.	Absent. The listed ELC vegetation community types are not present in the Study Area.

Appendix E: 165001381 Significant Wildlife Habitat Assessment

Candidate SWH	Ecoregion 7E Criteria	Methods	Candidate SWH Present in the Study Area?
Alvars	<p>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.</p> <p>Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plant.</p> <p>Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animal species.</p> <p>Vegetation cover varies from patchy to barren with a less than 60% tree cover.</p> <p>Any of the following Community Types: ALO1(Open Alvar Rock Barren Ecosite), ALS1 (Alvar Shrub Rock Barren Ecosite), ALT1 (Treed Alvar Rock Barren Ecosite), FOC1 (Dry-Fresh Pine Coniferous Forest), FOC2 (Dry-Fresh Cedar Coniferous Forest), CUM2 (Bedrock Cultural Meadow), CUS2 (Bedrock Cultural Savannah), CUT2-1 (Common Juniper Cultural Alvar Thicket), or CUW2 (Bedrock Cultural Woodland).</p> <p>An Alvar site >0.5 ha in size.</p>	ELC surveys were used to assess features within the Study Area that would be considered to be alvar communities.	Absent. The listed ELC vegetation community types are not present in the Study Area.
Old-Growth Forest	<p>Old-growth forests tend to be relatively undisturbed, structurally complex, and contain a wide variety of trees and shrubs in various age classes. These habitats usually support a high diversity of wildlife species.</p> <p>No minimum size criteria t in any of the following Community Types: FOD (Deciduous Forest), FOM (Mixed Forest), FOC (Coniferous Forest).</p> <p>Forests greater than 120 years old and with no historical forestry management was the main criteria when surveying for old-growth forests.</p>	ELC surveys were used to assess features within the Study Area that would be considered to be old-growth forest communities.	Absent. The forest community identified in the Study Area is not characteristic of old growth forests.
Savannahs	<p>A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%.</p> <p>Any of the following Community Types: TPS1 (Dry-Fresh Tallgrass Mixed Savannah Ecosite), TPS2 (Fresh-Moist Tallgrass Deciduous Savannah Ecosite), TPW1 (Dry-Fresh Black Oak Tallgrass Deciduous Woodland Ecosite), TPW2 (Fresh-Moist Tallgrass Deciduous Woodland Ecosite), CUS2 (Bedrock Cultural Savannah Ecosite).</p>	ELC surveys were used to assess features within the Study Area that would be considered to be savannah communities.	Absent. Vegetation community type was not found during field investigation.
Tall-Grass Prairies	<p>A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has <25% tree cover.</p> <p>Any of the following Community Types: TPO1 (Dry Tallgrass Prairie Ecosite), TPO2 (Fresh-Moist Tallgrass Prairie Ecosite).</p>	ELC surveys were used to assess features within the Study Area that would be considered to be tall-grass communities.	Absent. The listed ELC vegetation community types are not present in the Study Area.
Other Rare Vegetation Communities	Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG.	ELC surveys were used to assess features within the Study Area that would be considered to be other rare vegetation communities.	Absent. The ELC vegetation community types identified in the Study Area are ranked as common in Ontario.
Specialized Habitat for Wildlife			
Waterfowl Nesting Area	<p>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.</p> <p>Note: includes adjacency to Provincially Significant Wetlands.</p>	<p>ELC surveys were used to assess features within the Study Area that may support nesting waterfowl.</p> <p>Habitats adjacent to wetlands without standing water were not considered candidate SWH.</p>	Absent. The wetlands in the Study Area were not suitable to support a large aggregation of nesting waterfowl.
Bald Eagle and Osprey Nesting, Foraging, and Perching Habitat	<p>Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water.</p> <p>Nests located on man-made objects are not to be included as SWH (e.g., telephone poles and constructed nesting platforms).</p> <p>ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands.</p>	ELC surveys and wildlife habitat assessments were used to assess features within the Study Area that may support nesting, foraging and perching habitat for large raptors.	Absent. There were no suitable water features, and forest and swamp communities were absent from the Study Area.
Woodland Raptor Nesting Habitat	All natural or conifer plantation woodland/forest stands combined >30 ha and with >4 ha of interior habitat. Interior habitat determined with a 200 m buffer.	ELC surveys, wildlife habitat assessments and GIS analysis were used to assess features within the Study Area that may support nesting habitat for woodland raptors.	Absent. Forested communities were absent from the Study Area.

Appendix E: 165001381 Significant Wildlife Habitat Assessment

Candidate SWH	Ecoregion 7E Criteria	Methods	Candidate SWH Present in the Study Area?
	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 offshore islands. May be found in all forested ELC Ecosites. May also be found in SWC, SWM, SWD and CUP3.		
Turtle Nesting Areas	Exposed mineral soil (sand or gravel) areas adjacent (<100 m) or within the following ELC Ecosites: MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, SAS1, SAM1, SAF1, BOO1, FEO1. Best nesting habitat for turtles is close to water, 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.	ELC surveys, wildlife habitat assessments and GIS analysis were used to assess features within the Study Area that may support turtle nesting areas.	Absent. The MASM1-12 wetlands in the Study Area were not suitable to support turtles. There were no natural sand or gravel areas adjacent to the stormwater management pond that would qualify as SWH for turtle nesting areas. If present in the stormwater management pond, turtles have potential to nest in the gravel shoulder of West 5 th Street; however, this area would not be considered as SWH.
Seeps and Springs	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.	ELC surveys were used to assess features within the Study Area that may support seeps/springs.	Absent. No seeps or springs were identified in the Study Area during field investigations.
Amphibian Breeding Habitat (Woodland)	All Ecosites associated with these ELC Community Series: FOC, FOM, FOD, SWC, SWM, SWD. Presence of a wetland, lake, or pond 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 a breeding habitat.	ELC surveys were used to assess features within the Study Area that may support woodland breeding amphibians. Amphibian call count surveys were conducted to target the wetland features in the Study Area.	Absent. Forest and swamp communities were absent from the Study Area.
Amphibian Breeding Habitat (Wetland)	ELC Community Classes SW, MA, FE, BO, OA and SA. Wetland areas >120 m from woodland habitats. Wetlands and pools (including vernal pools) >500 m ² (about 25 m diameter) supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNR 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.	ELC surveys were used to assess features within the Study Area that may support wetland-breeding amphibians. Amphibian call count surveys were conducted to target the wetland features in the Study Area.	Absent. The wetlands in the Study Area were not suitable to support SWH for breeding amphibians. The MASM1-12 wetland in the ROW immediately east of West 5 th Street was dominated with Phragmites with limited standing water. The MASM1-12 wetland north of Carmel Drive occurred within a drainage feature from the stormwater management pond with only a small area of standing water at the outlet.
Woodland Area-Sensitive Bird Breeding Habitat	Large mature forest stands, woodlots >30ha with interior forest habitat (i.e. at least 200m from edge). All Ecosites associated with these ELC Community Series; FOC, FOM, FOD, SWC, SWM, SWD.	ELC surveys and GIS analysis were used to determine whether woodlots that occurred within the Study Area that were >30 ha with interior habitat present (>200 m from edge).	Absent. Absent. Forest and swamp communities were absent from the Study Area.
Species of Conservation Concern			
Marsh Bird Breeding Habitat	All wetland habitats with shallow water and emergent aquatic vegetation. May include any of the following Community Types: Meadow Marsh (MAM), Shallow Aquatic (SA), Open Bog (BOO), Open Fen (FEO), or for Green Heron: Swamp (SW), Marsh (MA) and Meadow (CUM) Community Types.	ELC surveys were used to identify marshes with shallow water and emergent vegetation that may support marsh breeding birds.	Absent. The wetlands in the Study Area were too small to support large aggregations of marsh breeding birds.
Open Country Bird Breeding Habitat	Grassland areas > 30 ha, not Class 1 or Class 2 agricultural lands, with no row-cropping or hay or livestock pasturing in the last 5 years, in the following Community Type: Meadow (CUM).	ELC surveys and GIS analysis were used to identify grassland communities within the Study Area that may support area-sensitive breeding birds.	Absent. There are no meadows in the Study Area > 30 ha in size.

Appendix E: 165001381 Significant Wildlife Habitat Assessment

Candidate SWH	Ecoregion 7E Criteria	Methods	Candidate SWH Present in the Study Area?
Shrub/Early Successional Bird Breeding Habitat	Old field areas succeeding to shrub and thicket habitats >10 ha, not Class 1 or Class 2 agricultural lands, with no row-cropping or intensive hay or livestock pasturing in the last 5 years, in the following Community Types: Thickets (CUT), Savannahs or Woodlands (CUW).	ELC surveys and GIS analysis were used to identify large communities that may support shrub/early successional breeding birds.	Absent. There were no large areas of successional habitat to support early successional bird breeding habitat.
Terrestrial Crayfish	Meadow marshes and edges of shallow marshes (no minimum size). Vegetation communities include MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, MAS1, MAS2, MAS3, SWD, SWT, SWM. Terrestrial Crayfish construct burrows in marshes, mudflats, meadows. Can be found far from water.	ELC surveys and wildlife habitat assessments were used to identify shallow marsh and meadow marsh communities that may support Terrestrial Crayfish within the Study Area.	Absent. Terrestrial Crayfish burrows were not observed during the field investigations.
Special Concern and Rare Wildlife Species	All special concern and provincially rare (S1-S3, SH) plant and animal species (SOCC) with potential to occur in the Study Area.	ELC surveys were used to identify suitable habitat for each potential SOCC listed in Appendix C.2.	<p>Potentially Present.</p> <p>Monarch was observed in the Study Area during the August 7, 2025, botanical site visit. Up to 50 Common Milkweed plants (Monarch's larval host plant) were observed in the MEMM3 section of the THDM4-1/MEMM3 community.</p> <p>Absent.</p> <p>There is potential for Snapping Turtle (special concern) to occur in the stormwater management pond; however, SWM ponds do not qualify as SWH.</p> <p>One Barn Swallow (special concern) was observed as a flyover during the June 2, 2025, breeding bird survey; however, there is low potential for Barn Swallow to nest in the Study Area based on only one occurrence of Barn Swallow recorded in the Study Area during the survey.</p>
Animal Movement Corridors			
Amphibian Movement Corridor	Corridors may be found in all ecosites associated with water. Determined based on identifying significant amphibian breeding habitat (wetland).	Identified after Amphibian Breeding Habitat is confirmed. Movement corridors should be considered when amphibian breeding habitat is confirmed as SWH from Amphibian Breeding Habitat.	Absent. There was no suitable amphibian breeding habitat identified in the Study Area; therefore, amphibian movement corridors are not considered present.