MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT (MCEA) PROJECT FILE REPORT

Schedule "B" Municipal Class Environmental Assessment Study, Glasgow Road from Chickadee Lane to Deer Valley Drive and Deer Valley Drive to Bambi Trail, Town of Caledon, Ontario

Prepared for:

TOWN OF CALEDON

Town of Caledon
6311 Old Church Road
Caledon, Ontario L7C 1J6

Prepared by:

McINTOSH PERRY

McIntosh Perry Consulting Engineers Ltd.
115 Walgreen Road
Carp, ON K0A 1L0

MCEA PROJECT FILE REPORT
SCHEDULE "B" MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT STUDY, GLASGOW ROAD FROM CHICKADEE LANE TO DEER VALLEY DRIVE AND DEER VALLEY DRIVE TO BAMBI TRAIL, TOWN OF CALEDON, ONTARIO

Prepared for:

TOWN OF CALEDON

Town of Caledon
6311 Old Church Road
Caledon, Ontario L7C 1J6

Prepared by:

McINTOSH PERRY

McIntosh Perry Consulting Engineers Ltd.
115 Walgreen Road
Carp, ON K0A 1L0

November 23, 2023

Prepared by:

Kerry Reed

Kerry Reed
Environmental Planner

Reviewed By:

Lisa Marshall, P.Eng.
Senior Environmental Engineer

Reviewed and Approved by:

Mehemed Delibasic

Mehemed Delibasic, P.Eng., M.Sc.
Project Manager

Reviewed by:

Alex Siciliano
Assistant Project Manager

McINTOSH PERRY

November 23, 2023

Town of Caledon
6311 Old Church Road
Caledon, Ontario L7C 1J6

Attention: Shun H. Cheung, P.Eng., PMP, Project Manager, Engineering Services

RE: Project File Report: Schedule "B" Municipal Class Environmental Assessment Study, Glasgow Road from Chickadee Lane to Deer Valley Drive and Deer Valley Drive to Bambi Trail, Town of Caledon, Ontario.

Dear Mr. Cheung,

McIntosh Perry Consulting Engineers Ltd. (McIntosh Perry) is pleased to submit this Project File Report for the Schedule "B" Municipal Class Environmental Assessment to the Town of Caledon.

This Project File Report provides a comprehensive review of the various solutions, the evaluation criteria, and the final recommendation for the technically preferred solution for Glasgow Road from Chickadee Lane to Deer Valley Drive to Bambi Trail. Our team has conducted an in-depth review of the study area, road conditions, servicing needs, and stakeholder/public requirements. In particular, this report is intended to:

- Provide a background to the study;
- Define the nature and extent of the problem and opportunity, and explain the source of the concern or issue and the need for a solution;
- Outline the existing transportation and environmental (natural, social, cultural) conditions within the study area;
- Provide the alternative solutions/design concepts considered;
- Provide evaluation followed and selection of the technically preferred solution and design concept;
- Summarize the public consultation program employed, and
- Define follow-up commitments.

If you have any questions or require any additional information, please contact the undersigned.

Sincerely,

Mehemed Delibasic, P.Eng., M.Sc.
McIntosh Perry Consulting Engineers Ltd.
Project Manager

EXECUTIVE SUMMARY

The continued growth in the population of Caledon is creating challenges for the Town, including wear and tear on existing infrastructure through increased traffic use, the considerable amount of new infrastructure due to growth, and the increased expectations as to the type and quality of services that the Town provides. In order to manage the wide range of assets needing repair and rehabilitation the Town has undertaken a comprehensive assessment of all asset categories and has formulated an asset management strategy for all Town assets. One of the key asset categories is the Town's inventory of 750 km of roads comprising both gravel and hard surface pavements. The Town of Caledon has identified the need for improvements to Glasgow Road, from Chickadee Lane to Deer Valley Drive. The study area limits have been extended to include 300 m of Deer Valley Drive, from Glasgow Road to Bambi Trail, as well as the Preliminary Design for the addition of a sidewalk along one side of Deer Valley Drive.

The overall objective of this project is to reconstruct/upgrade and improve the existing rural road segments for a total length of 910 m along of Glasgow Road between Chickadee Lane and Deer Valley Drive in accordance with the Town's Development Charges Study which recommends a two-lane roadway with 3.5 m wide lanes and 1.5 m paved shoulders. The proposed cross section is in accordance with the Town's Road Characterization Matrix in the Transportation Master Plan Study (TMP). Through subsequent review of the original study area and discussions, the study area and limits of the preliminary design have been extended to include an additional 300 m of Deer Valley Drive, from Glasgow Road to Bambi Trail, to address a missing link in the Town's active transportation network. The active transportation facility will provide better pedestrian and cyclist connectivity, enhance bicycle and pedestrian travel, and ultimately improves livability in communities.

The project will consist of road reconstruction, resurfacing, widening for paved shoulder and the addition of active transportation facilities (multi-use path) and drainage improvements. Glasgow Road is a low volume, local rural road, servicing residential properties, rural properties and recreational facilities. Typically, for this type of low volume, rural road, several constraints will pose challenges during design and construction. The road has a narrow platform with varied gradient side slopes with some steep profile grades and significant trees along portions of the roadway.

The Town of Caledon (Town) retained McIntosh Perry Consulting Engineers Ltd. (McIntosh Perry) to undertake a Municipal Class Environmental Assessment (MCEA) study in accordance with the MCEA process (October 2000, amended 2011, 2015 and 2017), approved under the Ontario *Environmental Assessment Act*, in order to identify recommendations for design of Glasgow Road, taking into account various municipal engineering, environmental, socio-economic and cultural impacts. The project was initiated as a Schedule A+ Municipal Class Environmental Assessment, however, has since been elevated to a Schedule "B" project.

This Project File Report has been prepared to present the results of the MCEA study and has been prepared to document the consultation program, findings of technical background studies, the evaluation of alternative design solutions and the selected technically preferred alternative design.

This MCEA study considered three (3) alternative design concepts to address the problem opportunity statement:

- **Alternative 1:** Maintain Rural Section (Do nothing).
- **Alternative 2:** Rural Section with Multi-Use Path.
- **Alternative 3:** Urban Section with Multi-Use Path.

Each alternative was reviewed in consideration of the established evaluation criteria, which include the following:

- **Transportation / Technical** – Criteria to evaluate whether the alternative design concept addresses the transportation problems and opportunities identified along the Glasgow Road corridor, as well as evaluate the technical suitability and engineering characteristics of the design concept.
- **Natural Environment** – Criteria used to evaluate effects on the natural heritage systems, natural environment and habitats, air, and water quality.
- **Social and Cultural Environment** – Criteria used to evaluate effects on businesses, community and social features, properties, and archaeological, built and cultural heritage features within the study area.
- **Implementation** – Criteria used to evaluate the financial implications and implementation opportunities.

The preferred alternative was selected based on a combination of results from the evaluation criteria scoring matrix, public feedback, and subsequent design discussions with the Town of Caledon.

The preferred alternative is Alternative 2 – Rural Section with Multi-Use Path. This alternative involves improvements to the existing rural cross-section. Existing 3.3 m wide lanes will be maintained. The cross-section will be modified through the addition of Pedestrian and/or Active Transportation Facilities in the form of a 3.0 m wide Multi-Use Path on one side of the roadway. Roadside ditching and existing drainage patterns will be maintained.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

APPENDICES

1.0 INTRODUCTION

The Town of Caledon (Town) retained McIntosh Perry Consulting Engineers Ltd. (McIntosh Perry) to undertake a Municipal Class Environmental Assessment (MCEA) study in accordance with the MCEA process (October 2000, amended 2023, 2011, 2015 and 2017), approved under the Ontario *Environmental Assessment Act*. The project was initiated as a Schedule A+ Municipal Class Environmental Assessment, however, was elevated to a Schedule "B" as it was concluded that the proposed infrastructure improvements would extend beyond the existing right-of-way, as well as the Town had received extensive expression of interest from the public.

1.1 Study Area

The study area consists of 910 m of Glasgow Road between Chickadee Lane and Deer Valley Drive and 300 m of Deer Valley Drive from Glasgow Road to Bambi Trail (**Figure 1**). The connection to the Emil Kolb Parkway is anticipated to be completed as part of the ongoing Zancor Development west of the study area.

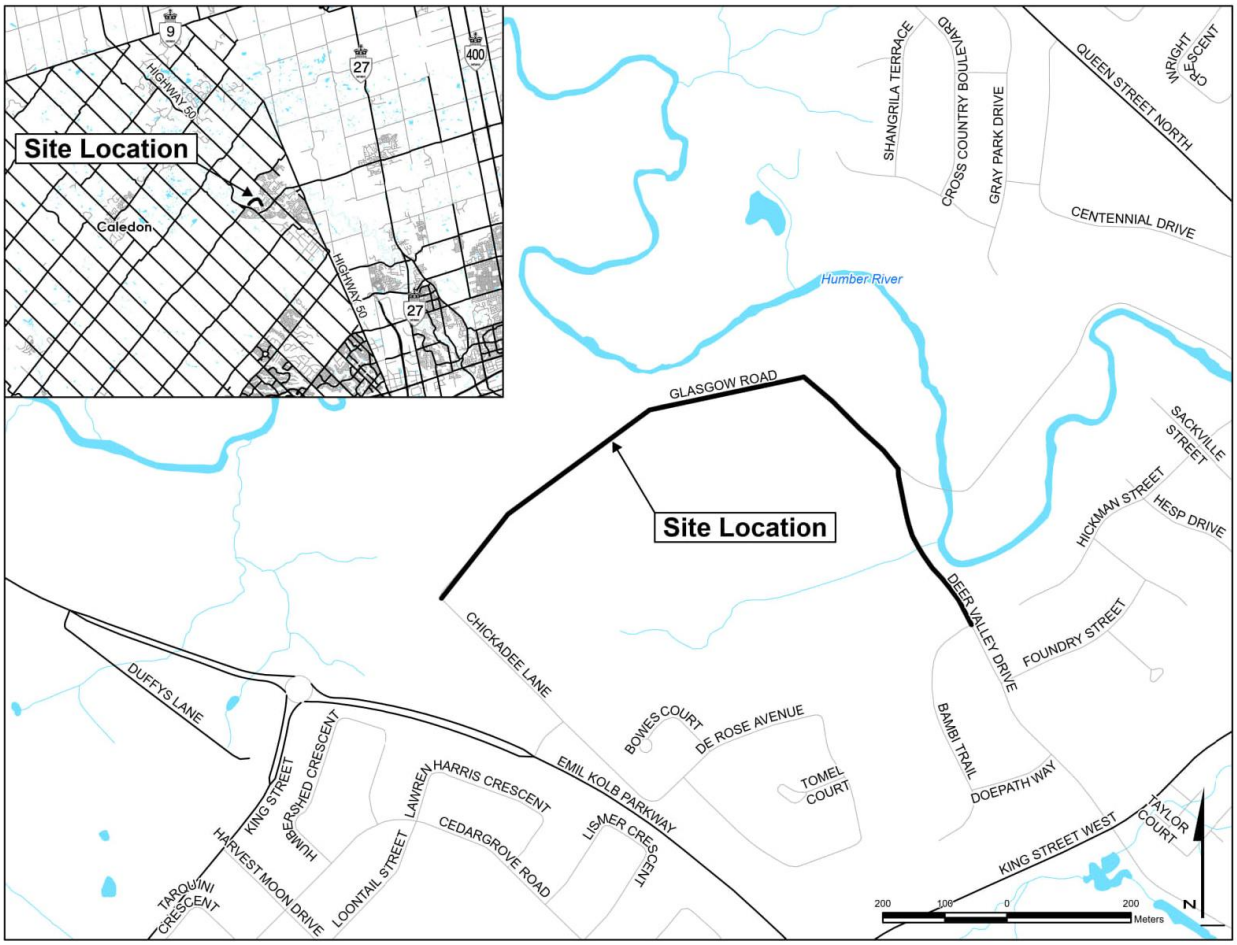


Figure 1: Glasgow Road from Chickadee Lane to Deer Valley Drive and Deer Valley Drive to Bambi Trail Study Area Key Map

2.0 CLASS ENVIRONMENTAL ASSESSMENT PROCESS

2.1 Ontario's Environmental Assessment Act

Ontario's *Environmental Assessment Act* (EAA) was passed in 1975 and was proclaimed in 1976. The EAA requires proponents to examine and document the environmental effects that could result from major projects or activities and their alternatives. Municipal undertakings became subject to the EAA in 1981. The EAA's comprehensive definition of the environment is:

- Air, land or water;
- Plant and animal life, including human life;
- The social, economic and cultural conditions that influence the life of humans or community;
- Any building, structure, machine or other device or thing made by humans;
- Any solid, liquid, gas, odour, heat, sound, vibration, or radiation resulting directly or indirectly from human activities, and
- Any part of a combination of the foregoing and the interrelationships between any two or more of them, in or of Ontario.

The purpose of the EAA is the betterment of the people as a whole, or any part of Ontario, by providing for the protection, conservation and wise management of the environment (RSO 1990, c.18, s.2). It is the objective of the EAA proponents to ensure that decisions result from a rational, objective, transparent, replicable, and impartial planning process.

To meet the requirements of Ontario's EAA, class environmental assessments were approved by the Minister of the Environment in 1987 as a means of obtaining project-specific approval under the Ontario EAA. The Class EA approach streamlines the planning and approvals process for projects that are:

- Recurring;
- Similar in nature;
- Usually limited in scale;
- Predictable in the range of environmental impacts, and
- Responsive to mitigation.

2.2 Municipal Class Environmental Assessment Process

The MCEA, prepared by the Municipal Engineers Association (MEA) (October 2000, amended 2011, 2015, 2017, and 2023) outlines the procedures to be followed to satisfy Class EA requirements for water, wastewater, stormwater management and road projects. The MCEA process provides municipalities with a five-phase planning procedure approved under the EAA for proponents to follow to meet Ontario's EA requirements.

Phase 1: Problem or Opportunity Statement
Phase 2: Identification and Evaluation of Alternative Solutions

Phase 3: Examination of Alternative Methods
Phase 4: Documentation of the Class EA Process
Phase 5: Implementation and Monitoring.

Projects subject to the Class EA process are classified into the following four "Schedules" based on the degree of the expected impacts.

- **Schedule "A":** Projects are limited in scale, have minimal adverse effects and include the majority of municipal maintenance and operational activities. These projects are pre-approved and may proceed directly to Phase 5 for implementation without following the other phases.
- **Schedule "A+":** Projects are limited in scale and have minimal adverse effects. These projects are pre-approved and may proceed directly to Phase 5 for implementation without following the other phases. However, the public is to be advised prior to project implementation, though there is no ability for the public to request a Part II Order.
- **Schedule "B":** Projects have the potential for some adverse environmental effects. The municipality is required to undertake a screening process (Phases 1 and 2) involving mandatory contact with directly affected public and relevant review agencies to ensure that they are aware of the project and that their concerns are being addressed. Schedule "B" project require that a Project File report be prepared and submitted for review by the public and review agencies. If there are no outstanding concerns, then the municipality may proceed to Phase 5 for implementation.
- **Schedule "C":** Projects have the potential for significant environmental effects and must proceed under the full planning and documentation procedures specified in the MCEA Document (Phases 1 to 4). Schedule "C" projects require that an Environmental Study Report be prepared and submitted for review by the public and review agencies. If there are no outstanding concerns, then the municipality may proceed to Phase 5 for implementation.

Figure 2 illustrates the MCEA planning and design process with the phases required for each schedule.

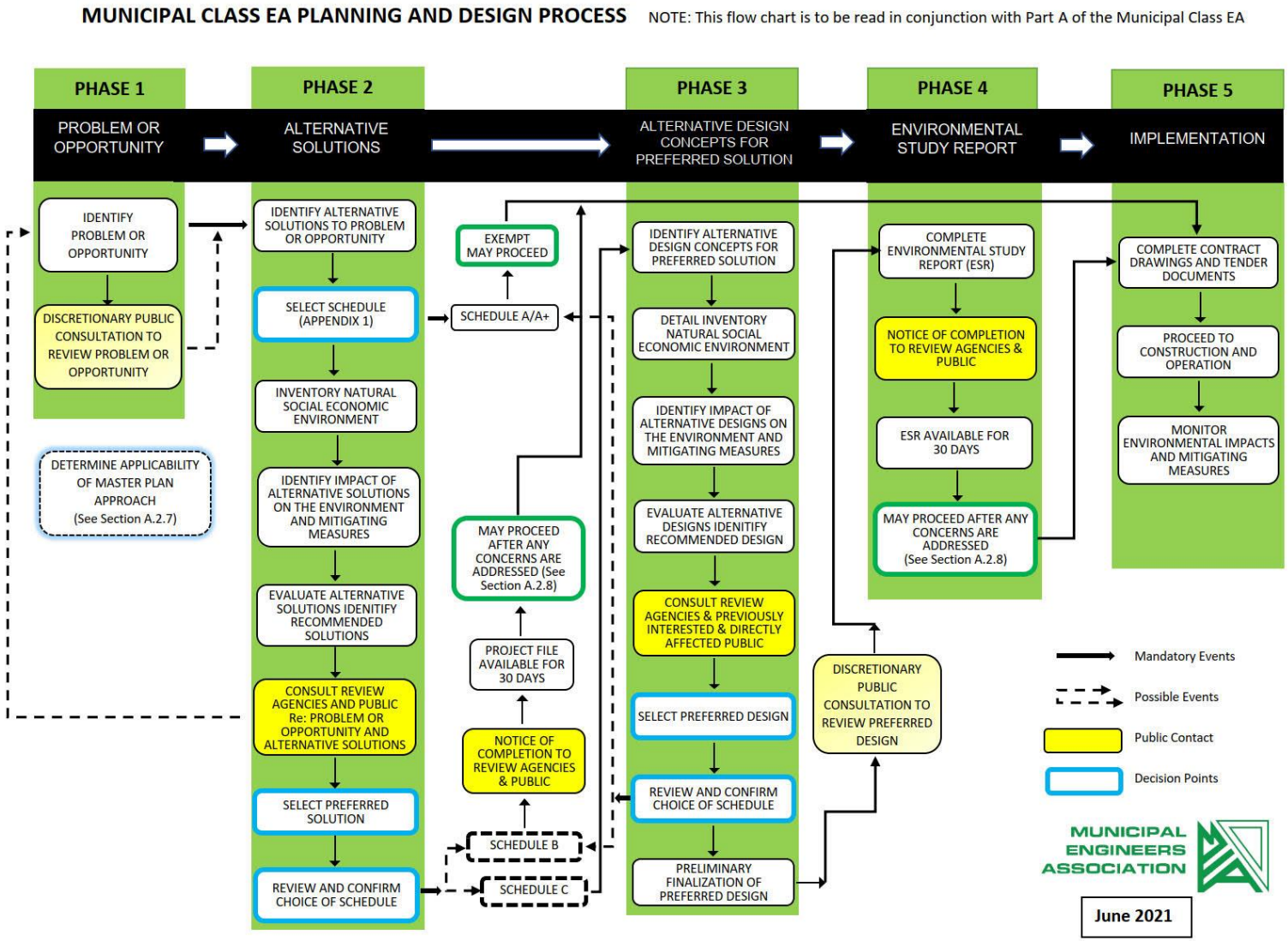


Figure 2: Municipal Class EA Planning and Design Process

2.2.1 Schedule B Classification

The Glasgow Road project was initiated following the requirements of a Schedule "A+" EA. However, McIntosh Perry in collaboration with the Town, reviewed the functional design alternatives and confirmed that an enhanced MCEA (Schedule B) would be appropriate based on the study area extending beyond existing ROW, as well as the past and recent expressions of public interest that had been received by the Town. Therefore, this project will be completed as a Schedule "B" undertaking in accordance with the requirements of the Municipal Engineers Association document "Municipal Class Environmental Assessment, October 2000, as amended in 2007, 2011 and 2015". A Schedule "B" undertaking must fulfill the first two phases of the MCEA process before moving on to the implementation phase. The MCEA planning phases undertaken for this study are listed below.

Phase 1: Identify the Problem / Opportunity
This phase involves identifying the problem/opportunity and describing it in sufficient detail to formulate a clear problem/opportunity statement. It is important that this statement is concise and considers the goals and objectives of the MCEA, as it is used to dictate the scope of the project.

Phase 2: Identify and Evaluate Alternative Solutions to the Problem/Opportunity
This phase involves undertaking the following six steps:

- Identify reasonable alternative solutions to the problem/opportunity statement described in Phase 1;
- Prepare a general inventory of the existing natural, social and economic environments of the study area;
- Identify the net positive and negative effects of each alternative solution including mitigating measures, where possible;
- Evaluate the alternative solutions against a holistic set of criterion;
- Consult with review agencies and the public to solicit comments and input; and
- Select/confirm the technically preferred solution.

2.2.1.1 Mandatory Principles

The planning process followed not only adheres to the guidelines outlined by the MCEA document, but reflects the following five mandatory principles of MCEA planning under the EAA:

- Consultation with affected parties early on and throughout the process, such that the planning process is a cooperative venture;
- Consideration of a reasonable range of alternatives, both functionally different alternative to the project (known as alternative solutions) and alternative methods of implementing the preferred solution;
- Identification and consideration of the effects of each alternative on all aspects of the environment;
- Systematic evaluation of alternatives in terms of their advantages and disadvantages, to determine their net environmental effects; and
- Provision of clear and complete documentation of the planning process followed to allow 'traceability' of decision-making with respect to the project.

Following these five principles ensures that the MCEA process is devoted to the prevention of problems and environmental damage through planning and decision-making, recognizing that research and evaluation of possible impacts have been considered prior to implementation of the project.

2.2.2 Impact Assessment Act

On August 28, 2019, the *Impact Assessment Act* (IAA) replaced the former *Canadian Environmental Assessment Act* (CEEA), 2012. The projects and activities that are subject to the IAA are very similar to those that were subject to an environmental assessment under the CEAA, 2012. However, some changes have been made to the "Project List", such as new thresholds or projects have been introduced or increased. Under the IAA, only those projects designated by the Physical Activities Regulations or designated by the Minister of Environment on a discretionary basis may be subject to federal environmental assessment.

It has been determined that this project does not include physical activities identified on the list and is therefore not subject to the IAA process.

3.0 STUDY OVERVIEW

Phase 1 of the MCEA study requires a clear and concise Problem/Opportunity Statement, followed by Phase 2 Alternative Solutions considered to address the identified Problem/Opportunity. At this point in the study, the details of the Alternative Solutions are considered 'preliminary' until a Preferred Solution is adopted by the Town of Caledon to carry forward into detail design.

3.1 Phase 1 – Problem/Opportunity Statement

Phase 1 of the five phased Municipal Class Environmental Assessment (EA) planning process requires the proponent (Town of Caledon) of an undertaking to first document factors leading to the conclusion that road improvements are required, and ultimately, develop a clear statement of the identified problem to be investigated and/or opportunity to be realized.

As such, the Problem/Opportunity Statement is the principle starting point in the undertaking of a Municipal MCEA and becomes the central theme integrating elements of the project. It also assists in setting the scope of the project.

For the purpose of this MCEA, the following Problem/Opportunity Statement has been prepared:

The continued growth within the Town of Caledon is creating challenges for the Town, including wear and tear on existing infrastructure through increased traffic use, the considerable amount of new infrastructure due to growth, and the expectations as to the type and quality of services that the Town provides. The Town is committed to improving existing infrastructure, as well as improving multi-modal connectivity and enhancing active transportation infrastructure to improve pedestrian and cycling travel choices.

The Glasgow Road MCEA study was initiated to review opportunities within the study area to address transportation, traffic operations and safety; active transportation (cycling, walking) needs, and improvement to roadway drainage and stormwater management.

3.2 Phase 2 – Alternative Solutions

To address the Problem/Opportunity Statement the following three (3) Alternative Solutions were developed:

- **Alternative 1:** Maintain Existing Rural Cross-Section (Do nothing)
- **Alternative 2:** Rural Cross-Section with Multi-Use Path
- **Alternative 3:** Urban Cross-Section with Multi-Use Path

3.2.1 Alternative 1

No changes are made to the existing transportation network within the study area (status quo). Under this alternative, no measures to improve the function of the road segment will be considered and therefore the road would remain in its present condition. This means the problems that have been identified (multi-modal connectivity, etc.) will remain unresolved.

3.2.2 Alternative 2

Alternative 2 involves rehabilitation of the road segment including partial depth removal, pavement structure, shoulders, driveway culverts and entrances. This alternative involves improvements to the existing rural cross-section. Existing 3.3 m wide lanes will be maintained. The cross-section will be modified through the addition of pedestrian / active transportation facilities in the form of a +/- 3.0 m wide Multi-Use Path (MUP) on one side of the roadway. Roadside ditching and existing drainage patterns will be maintained.

3.2.3 Alternative 3

Alternative 3 involves full depth removal of the road pavement structure and replacement with new designed pavement structure, culvert replacement, and other items included in the rehabilitation. This alternative involves upgrades to the existing cross-section to an urban section. Existing 3.3 m wide lanes will be maintained. The cross-section will be modified through the addition of concrete curb and gutter, catch basins, along with the addition of pedestrian / active transportation facilities in the form of a +/- 3.0 m wide MUP on one side of the roadway. Stormwater management will be modified through the addition of an underground storm sewer, catch basins and new outlet(s).

4.0 INVENTORY OF EXISTING CONDITIONS

This section presents an overview of the background information (secondary source information) and the results of the field investigations undertaken specifically for this study. The following sections provide a summary of the existing natural, socio-economic, and cultural environments, as well as the existing infrastructure conditions along Glasgow Road from Chickadee Lane to Deer Valley Drive and Deer Valley Drive to Bambi Trail.

4.1 Natural Environmental Conditions

Determining the existing natural environmental conditions of the study area is required to assess the potential impacts of each alternative option considered as part of this MCEA study.

A desktop review was undertaken to collect background data and document all known natural features within the study area, prior to undertaking field investigations. Information was obtained from the following sources during the desktop review:

- Wildlife atlases for birds and herpetofauna, (Bird Studies Canada et al. 2006, Ontario Nature, 2019);
- Ministry of Natural Resources and Forestry (MNRF) Land Information Ontario (LIO) database;
- MNRF Make a Map: Natural Heritage Areas mapping application;
- The Ontario Reptile and Amphibian Atlas (ORAA) (Ontario Nature, 2020);
- The Ontario Geological Survey Earth (OGS Earth) geoscience database (MNDMNRF, 2020);
- Department of Fisheries and Oceans (DFO) Aquatic Species at Risk Mapping Tool;
- Fish ON-Line;
- Toronto and Region Conservation Authority (TRCA);
- Toronto Source Water Protection Area (Toronto SPA);
- Region of Peel Official Plan (2022), and
- Township of Caledon Official Plan (2018).

Field investigations were conducted by Mcintosh Perry Biologists on July 26 and November 10, 2022, to collect current, and site-specific information related to terrestrial and aquatic ecosystems within the study area. Field investigations included identification of the following where applicable:

- Existing vegetation communities;
- Wetland areas;
- Existing fish and aquatic habitat;
- Reptiles, amphibians and associated habitat;
- Species at Risk (SAR) and their habitat;
- Resident or migrant bird and wildlife species;
- Wildlife corridors and Concentration areas;
- Critical habitat areas, and
- Existing socio-economic and land uses surrounding the study area.

For detailed information obtained through McIntosh Perry's desktop review and field investigations for the Glasgow Road study area, please refer to the *Existing Environmental Conditions Report* (**Appendix A**). A summary of Constraints and Opportunities identified within the study area is presented in **Figure 3 & 4**. The following sections summarize the natural environmental conditions of the study area.

4.1.1 Vegetation

The study area is located within the Lake Simcoe-Rideau Ontario Ecoregion (Ecoregion 6E), of the Mixedwood Plains Ecozone within the Great Lakes-St. Lawrence Forest Region (Crins et al., 2009). The region is largely comprised of cropland (57%), pastures (44.4%), and abandoned fields (12.8%). Forested areas of the Lake Simcoe-Rideau Ecoregion are composed primarily of deciduous forest (16%) with some additional coniferous and mixed forests. Typical tree species include green ash (*Fraxinus pennsylvanica*), silver maple (*Acer saccharinum*), red maple (*Acer rubrum*), eastern white cedar (*Thuja occidentalis*), yellow birch (*Betula alleghaniensis*), balsam fir (*Abies balsamea*), black ash (Fraxinus nigra), black spruce (*Picea mariana*), tamarack (*Larix laricina*) and numerous other species (Crins et al., 2009).

A botanical inventory of the study area was conducted, with field staff listing all observed terrestrial plant species. Vegetation communities were mapped consistent with protocols as defined in the MNRF Ecological Land Classification (ELC) guidelines for Southern Ontario (Lee, 2009). The following ecologically distinct areas were mapped including: Cattail Mineral Shallow Marsh Type (MASM1-1), Goldenrod Forb Meadow Type (MEFM1-1), Sumac Deciduous Shrub Thicket Type (THDM2-1), Dry - Fresh Manitoba Maple Deciduous Forest Type (FODM4-5), Fresh – Moist Willow Lowland Deciduous Forest Type (FODM7-3), Dry - Fresh Black Walnut Deciduous Woodland Type (WODM4-4), Fresh – Moist Lowland Deciduous Forest Ecosite- Manitoba Maple and Black Walnut (FODM7), Dry - Fresh Black Locust Deciduous Forest Type (FODM4-11), Dry - Fresh Coniferous Woodland Ecosite (WOCM1), Native Deciduous Regeneration Thicket Type (THDM4-1), and Dry – Fresh Sugar Maple – Hardwood Deciduous Forest Type (FODM5-9). All communities have been mapped, refer to Figure 4 for vegetation mapping.

The study area is dominated by recreational land, forested areas and residential properties. Vegetation species within the study area are representative of roadside corridors in southern Ontario, with a high proportion of non-native species. Two (2) Butternut (*Juglans cinerea*) trees were observed within 50 m of Glasgow Road. No other species at risk (SAR) or rare vegetation was identified during the field investigations.

4.1.1.1 Invasive and Noxious Species

The following species listed as 'restricted' under the Invasive Species Act, 2015 were observed within the study area during the 2022 field investigations:

- Phragmites (*Phragmites australis subsp. australis*).

The following species classified as 'noxious weeds' under the Weed Control Act, 1990 were observed within the study area during the 2022 field investigations:

- Bull thistle (*Cirsium vulgare*),
- Coltsfoot (*Tussilago farfara*), and
- Common Buckthorn (*Rhamnus cathartica*).

4.1.2 Wetland Habitat

The Glasgow Road study area falls within the boundaries of two (2) unevaluated wetlands (**Figures 4**). The first is a marsh wetland located south of Glasgow Road and encircles Edelweiss Park. The second is a swamp wetland located north of Glasgow Road and adjacent to the north side of the Humber River.

The Glasgow Road study area falls within the boundaries of two (2) unevaluated wetlands identified and mapped (**Figure 4)**. The first unevaluated wetland is classified as a marsh and is located south of Glasgow Road and encircles Edelweiss Park. This wetland falls in proximity (within 10 m) of Deer Valley Drive. The second unevaluated wetland is classified as a swamp wetland is located north of Glasgow Road and adjacent to the north side of the Humber River. Three PSW's fall within 2 km of the study area but are not located within the project works limits. They are the Bolton Wetland Complex (swamp/ marsh) located approximately 1 km west of Glasgow Rd, the West Humber River Headwater Wetland Complex (marsh) located 1.2 km southwest of Deer Valley Drive, and the Castlederg Wetland Complex (marsh) located approximately 1.75 km northeast from Glasgow Rd.

4.1.3 Wildlife

Characteristic wildlife of the area includes white-tailed deer (*Odocoileus virginianus*), northern raccoon (*Procyon lotor*), striped skunk (*Mephitis mepthitis*), woodchuck (*Marmota monax*), red-spotted newt (*Notophthalmus viridescens*), snapping turtle (*Chelydra serpentina*), eastern garter snake (*Thamnophis sirtalis irtalis*) and common watersnake (*Nerodia sipedon*). Representative bird species include field sparrow (*Spizella pusilla*), grasshopper sparrow (*Ammodramus savnnarum*), and eastern meadowlark (*Sturnella magna*) (Crins et al., 2009).

During the 2022 field investigations, a total of 12 species were observed within the study area, including one (1) Barn Swallow (*Hirundo rustica*). Based on the habitat observed within the study area, the timing of observation, and details of the observation, the individual was likely a resident or visiting bird.

No migratory or SAR bird nests were observed during the natural science field investigations.

4.1.4 Fisheries and Aquatic Ecosystems

There are no watercourses within the study area, however, the Humber River crosses Glasgow Road just southeast of the study area. Land Information Ontario (LIO) and Aquatic Resource Area (ARA) mapping has defined the Humber River as a cold-water and its tributaries as warm-water watercourse and are known to contain a range of fish species.

4.1.5 Species at Risk

Ontario wildlife atlases were reviewed for SAR Element Occurrence (EO) records within 5 km of the study area. The Ontario Reptile and Amphibian Atlas (Ontario Nature, 2021) identified records of:

- Blanding's Turtle (*Emydoidea* blandingii),
- Eastern Ribbonsnake (*Thamnophis sauritus*),
- Eastern Milksnake (*Lampropeltis triangulum*),
- Midland painted turtle (*Chrysemys picta marginata*), and
- Snapping turtle (*Chelydra serpentina*).

One (1) Blanding's turtle occurrence record is present approximately 250 m south of the study area. No suitable nesting habitat is present within the study area as there is a lack of adequate gravels and sand bars for nesting.

The Ontario Butterfly Atlas (OBA) (Toronto Entomologists' Association, 2022) identified records of the following species at risk butterflies within the vicinity of the study area:

- Monarch (*Danaus plexippus*).

Common milkweed (*Asclepias syriaca*) was observed within the Glasgow Road study area and therefore, it is possible that monarch use this area for various life stages.

The Ontario Breeding Bird Atlas (Bird Studies Canada et al., 2006) identified thirteen (13) SAR birds known to occur within 10 km of the study area:

- Bank swallow (*Riparia riparia)*,
- Barn swallow (*Hirundo rustica)*,
- Bobolink (*Dolichonyx oryzivorus*),
- Canada warbler (*Cardellina canadensis*),
- Chimney swift (Chaetura pelagica),
- Common Nighthawk (*Chordeiles minor*),
- Eastern meadowlark (*Sturnella magna*),
- Eastern Whip-poor-will (*Antrostomus vociferus),*
- Eastern Wood-Pewee (*Contopus virens*),
- Golden-winged Warbler (*Vermivora chrysoptera*),
- Grasshopper sparrow (*Ammodramus savannarum*),
- Red-headed Woodpecker (*Melanerpes erythrocephalus*), and
- Wood thrush (*Hylocichla mustelina)*.

During the field investigation one (1) barn swallow was observed foraging within an adjacent field to the study area, but no structures suitable for nesting were within the study area. Barn swallows are listed as a threatened species both provincially and federally and receive habitat protection under the *Endangered Species Act*. No other SAR were observed during the field investigation.

The adjacent open fields (grassed and agricultural) adjacent to the study area may provide habitat for species such as Bobolink, Common Nighthawk, Eastern Meadowlark, Grasshopper Sparrow, Loggerhead Shrike, and Red-

headed Woodpecker. Additionally, the wooded areas surrounding the study area may provide suitable habitat for Canada Warbler, Eastern Wood Pewee, and Wood Thrush.

MNRF Make a Map: Natural Heritage Areas (Natural Heritage Information Centre) mapping application identified the following SAR within 5 km of the study area:

- American Bumble Bee (*Bombus pensylvanicus*),
- Barn Swallow,
- Black Ash (*Fraxinus nigra*),
- Blanding's Turtle,
- Bobolink,
- Butternut,
- Canada Warbler,
- Eastern Meadowlark,
- Eastern Milksnake,
- Eastern Wood-pewee,
- Golden-winged Warbler,
- Loggerhead Shrike (*Lanius ludovicianus*),
- Louisiana Waterthrush (*Parkesia motacilla)*,
- Midland Painted Turtle,
- Red-headed Woodpecker,
- Snapping Turtle, and
- Wood Thrush.

Suitable habitat for the American Bumble Bee is potentially present in fields and ditches with abundant wildflowers within the study area.

DFO Aquatic SAR mapping tool found no aquatic SAR records within the study area; however, within the Humber River, the following species is listed:

- Redside Dace (*Clinostomus elongatus*), and
- Silver Lamprey (*Ichthyomyzon unicuspis*).

The study area is in the general range of the following SAR species:

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

It should be noted that the adjacent forested areas surrounding the study area, could be potentially used by SAR bats as maternity roosting trees.

Please note that during Detail Design, if it is determined that the proposed activities cannot avoid impacts to protected SAR and their habitat, an application for authorization under the *Endangered Species Act* (ESA) would be required. If impacts are determined, or impacts are unknown, SAROntario@ontario.ca should be contacted to undergo a formal review under the ESA.

4.1.6 Groundwater

A search of the publicly accessible Ministry of the Environment, Conservation and Parks (MECP) well records within 500 m of the study area identified 45 domestic wells, constructed between 1954 and 2016 for a variety of purposes including domestic, municipal, monitoring and not used (MECP, 2019). Static water levels of the water supply wells range from 6.1 to 52.7 m with an average static level of 18.8 m.

4.1.7 Surface Water

The Glasgow Road study area is within the Humber River watershed. The Humber River watershed encompasses 911 m^2 and is the largest within the TRCA jurisdiction. The Humber River is within 50 m of the Glasgow Road study area. The Humber River crosses Glasgow Road just southeast of the study area. The Humber River is a tributary of Lake Ontario. The Humber River begins at Humber Springs Ponds on the Niagara Escarpment in Mono, Dufferin County and empties into Humber Bay on Lake Ontario in the City of Toronto.

4.1.8 Toronto Source Protection Area

The study area is located within the Toronto Source Protection Area (Toronto SPA), which is subject to the Credit Valley, Toronto and Region and Central Lake Ontario (CTC) Source Protection Plan (CTC, 2022). Upon review of the CTC Source Protection Plan, it appears that the Glasgow Road study area is not located within a Well Head Protection Area, Intake Protection Zones, or Highly Vulnerable Aquifers. However, the Ministry of Environment, Conservation, and Parks (MECP) Source Protection Information Atlas indicates that areas along the Glasgow Road corridor, mainly within floodplain limits, are within a Significant Groundwater Recharge Area which can be susceptible to groundwater contamination (i.e., quality).

Best Management Practices (BMPs) to be considered during detail design and construction to minimize impacts and protect source water in the study area include, but are not limited to, the following: locating fuel storage, refueling and maintenance of construction equipment away from watercourses. Stormwater runoff from roadways is also known to create non-point source water pollution that can be detrimental to the water quality of receiving watercourses. Vehicular pollution, such as oil and grease, heavy metals, nutrients, and sediments, is directly related to traffic volume. In addition, the impervious roadway cross-section has the potential to increase peak flows, as well as redirect drainage patterns away from their current source which can potentially reduce groundwater recharge.

4.1.9 Physiography, Soils and Bedrock

The study area is located within the Lake Simcoe-Rideau Ontario Ecoregion (Ecoregion 6E), of the Mixedwood Plains Ecozone within the Great Lakes-St. Lawrence Forest Region (Crins et al., 2009). Located within the Greenbelt Plan Protected Countryside Designation/Greenbelt. Most of the ecozone is underlain by Paleozoic rock, mostly limestone, covered with various deposits of glacial till including moraines, drumlins and old glacial lake bottoms. The project limits for Glasgow Road are within the Till Plains of the South Slope Physiographic Region and consists of clay to silt-textured till, transitioning at the east end of the site to modern alluvial deposits.

4.1.10 Geotechnical Investigation and Pavement Design

A geotechnical investigation and pavement condition survey were completed to obtain the necessary geotechnical and pavement data and develop alternate design and rehabilitation options, including life-cycle costing, material specifications and constriction recommendations for the road segment. Detailed findings of the geotechnical investigations and pavement design are presented in the Pavement Design Report (McIntosh Perry, 2022) submitted under a separate cover.

Pavement strategies for removal of the existing poorly performing asphalt and augment the poor quality granular base materials were reviewed, including options for pavement rehabilitation and reconstruction. The preferred option considers pavement rehabilitation in accordance with Town of Caledon standards for rural roadways, as follows:

- Mainline Pavement Rehabilitation
    - Full depth removal of asphalt and partial depth removal of granular base to a combined depth of 255 mm,
    - Place 150 mm new Granular ‘A’ Base,
    - Pave 40 mm of HL-3 over 65 mm of HL-8 asphalt.

In conjunction with the proposed pavement rehabilitation asphalt multi-use path construction on Glasgow Road and Deer Valley Drive is anticipated to consist of the following pavement structure:

- Asphalt Multi-Use Pathway
    - Place 300 mm new Granular ‘B’ Subbase,
    - Place 150 mm new Granular ‘A’ Base,
    - Pave 50 mm of HL-3 asphalt.

4.1.11 Designated Areas

There are no Provincially Significant Wetlands (PSW) located within the study area, however three (3) PSW exist within a 2.0 km radius of Glasgow Road:

- Castlederg Wetland Complex: 1.8 km north of the study area,
- Bolton Wetland Complex: 685 m west of the study area, and

- West Humber River Headwater Wetland Complex: 930 m south of the study area.

No other ANSI or PSW features occur within the Glasgow study area. A Great Blue Heron Nesting Site/Colony (ANSI) is located in proximity to the study area approximately 900 m to the east.

4.1.11.1 Toronto and Region Conservation Authority Lands

The Toronto and Region Conservation Authority (TRCA) maintains vital infrastructure and provides programs and services that promote public health and safety, protecting people and property (TRCA, 2023). TRCA owns various parcels of land within the study area.

The study area is located within the TRCA regulated area, which includes regulated floodplain unstable slope/soils and wetlands. Any development in the study area is subject to Ontario Regulation 166/06, Development, Interference with Wetlands and Alterations to Shorelines and Watercourses.

The Bolton Resource Management Tract (BRMT) is a 973-hectare property owned by the Toronto and Region Conservation Authority (TRCA, 2022). The BRMT is located within the study area north of Glasgow Road, east of Deer Valley Drive and includes Jack Garratt Soccer Park and Edelweiss Park. The property includes two Environmentally Significant Areas and one Provincially Significant Wetland.

TRCA also owns Dick's Dam Park on the south-east side of Glasgow Road and Deer Valley Drive, as well as the north side of Glasgow Road in the valley area of the Humber River adjacent to the road ROW.

4.1.12 Greenbelt Designation

The Glasgow Road study area falls within the Protected Countryside designation under the Greenbelt.

The Protected Countryside lands identified in the Greenbelt Plan are intended to enhance the spatial extent of agriculturally and environmentally protected lands covered by the Niagara Escarpment Plan (NEP) and the Oak Ridges Moraine Conservation Plan (ORMCP) while at the same time improving linkages between these areas and the surrounding major lake systems and watersheds (MMAH, 2017). The Protected Countryside is made up of an Agricultural System and a Natural System, together with a series of settlement areas (MMAH, 2017).

4.1.13 Air Quality and Noise

Air quality and dust generation may be a by-product of construction in the study area. Generation of dust, fumes, and odours may be created during construction, by machinery working within the study area. These fumes may degrade air quality in the immediate vicinity of the work area.

The Town of Caledon has a noise bylaw (By-law No. 86-110) in effect. Nosie sensitive receptors within the study area that could be impacted by the construction works include nearby residences as well as park users.

4.1.14 Climate Change

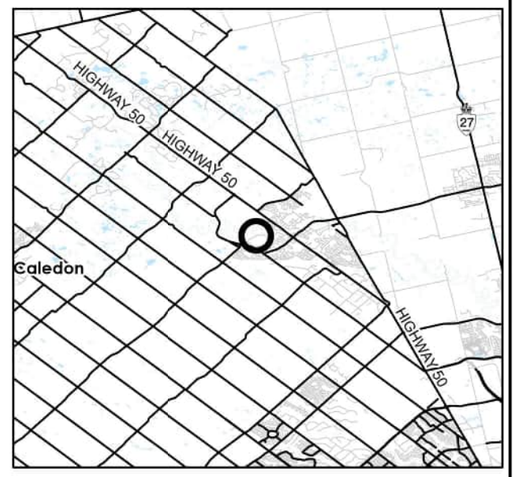
The MECP finalized a 'guide,' *Consideration of Climate Change in Environmental Assessment in Ontario* (November 21, 2017), which, together with their code of practices, sets out the MECP's expectations for considering climate change in the preparation, execution, and documentation of environmental assessment studies and processes.

The proposed improvements along Glasgow Road and Deer Valley Drive provide the opportunity to reduce the project's impact on climate change through the identification of an efficient transportation network and through the provision of facilities that encourage active forms of transportation. The local traffic will increase regardless of the project implementation due to significant growth and development in the Town of Caledon. However, the proposed multi-use pathway will encourage users to shift to active transportation such as walking and cycling.

BMPs identified in the MECP's guide that supports Climate Change will be further reviewed and incorporated into detailed design, as well as implemented during construction.

LEGEND

- Snag Trees
- ButternutTrees
- Right-of-way
- Glasgow Road Study Area
- Blanding's Turtle (NHIC Grid)
- Wetlands (Not Evaluated)
- Aquatic Resource Area
- Aquatic Resource Area
- Regulated Area 2021 (large scale)



REFERENCE

GIS data provided by the Ontario Ministry of Northern Development, Mines, Natural Resources and Forestry, 2022.

100 50 0 100 Meters

Scale 1:3,500

CLIENT: TOWN OF CALEDON

PROJECT: EXISTING ENVIRONMENTAL CONDITIONS REPORT

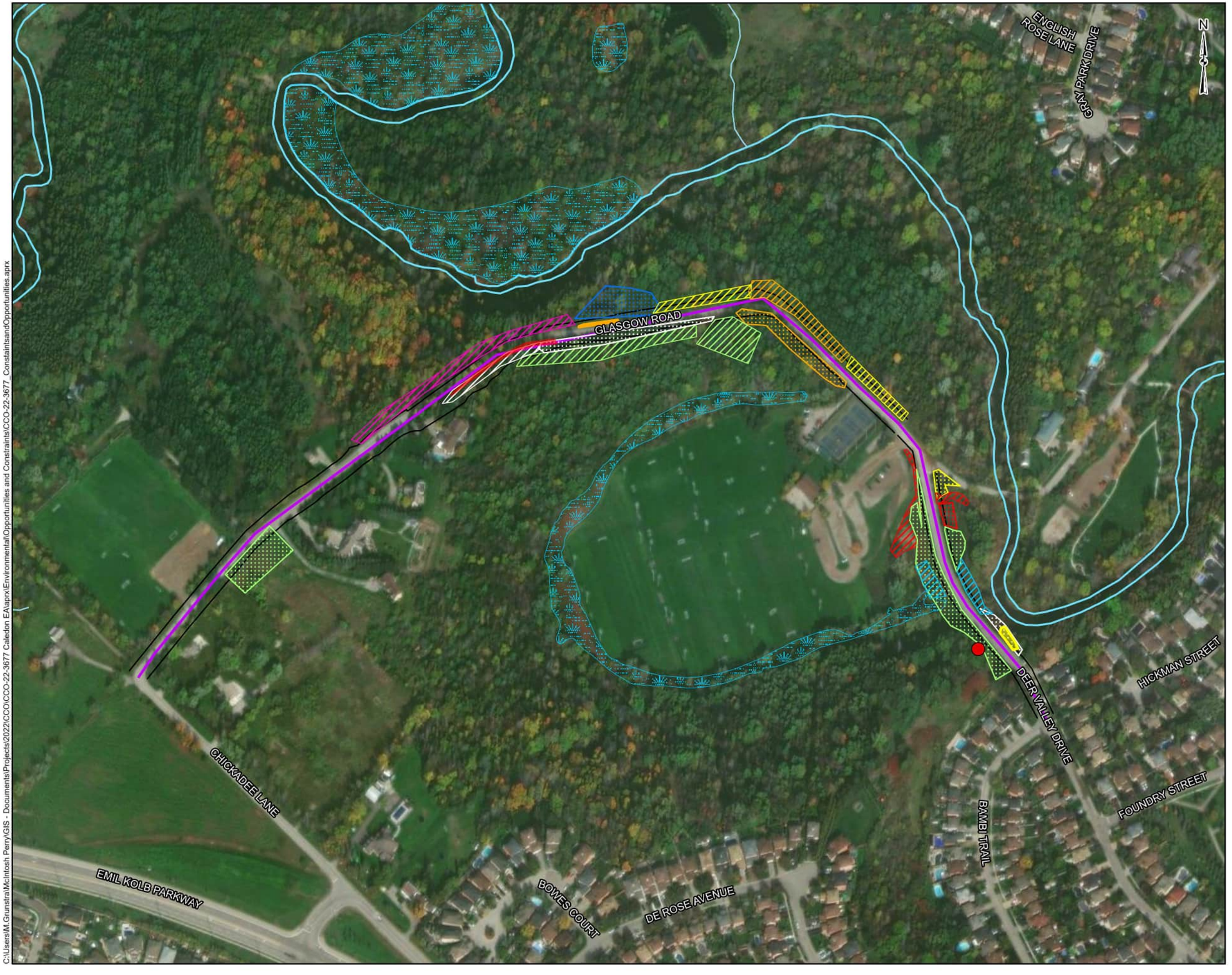
TITLE: NATURAL HERITAGE FEATURES

McINTOSH PERRY
115 Walgreen Road, RR3, Carp, ON K0A1L0
Tel: 613-836-2184 Fax: 613-836-3742
www.mcintoshperry.com

PROJECT NO:	CCO-22-3677
Date	Dec., 07, 2022
GIS	AH
Checked By	PG

FIGURE: 3

C:\Users\M.Grunstra\McIntosh Perry\GIS - Documents\Projects\2022\CCO\CCO-22-3677 Caledon EA\aprx\Environmental\Opportunities and Constraints\CCO-22-3677_ConstaintsandOpportunities.aprx

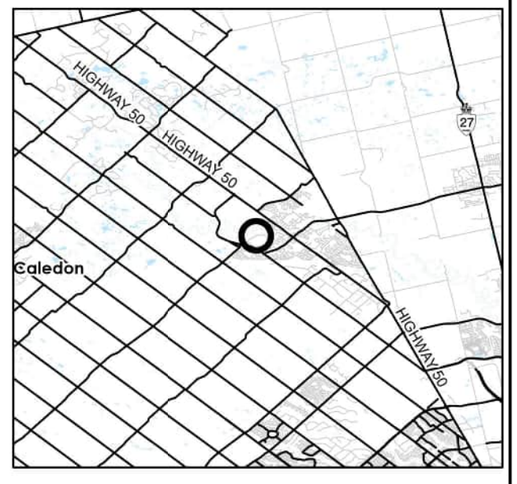


C:\Users\M.Grunstra\McIntosh Perry\GIS - Documents\Projects\2022\CCO\CCO-22-3677 Caledon EA\aprx\EnvironmentalOpportunities and Constraints\CCO-22-3677_ConstaintsandOpportunities.aprx

LEGEND

Invasive Species
- Coltsfoot
- Garlic Mustard
- Phragmites
- European Buckthorn

ELC Communities
- Cattail Mineral Shallow Marsh Type (MASM1-1)
- Dry - Fresh Black Locust Deciduous Forest Type (FODM4-11)
- Dry - Fresh Black Walnut Deciduous Woodland Type (WODM4-4)
- Dry - Fresh Coniferous Woodland Ecosite (WOCM1)
- Dry - Fresh Manitoba Maple Deciduous Forest Type (FODM4-5)
- Dry – Fresh Sugar Maple – Hardwood Deciduous Forest Type (FODM5-9)
- Dry – Fresh Sugar Maple – Hardwood Deciduous Forest Type(FODM5-9)
- Fresh - Moist Manitoba Maple Lowland Deciduous Forest Type (FODM7-7)
- Fresh – Moist Lowland Deciduous Forest Ecosite- Manitoba Maple and Black Walnut (FODM7)
- Fresh – Moist Willow Lowland Deciduous Forest Type (FODM7-3)
- Goldenrod Forb Meadow Type (MEFM1-1)
- Native Deciduous Regeneration Thicket Type (THDM4-1)
- Sumac Deciduous Shrub Thicket Type (THDM2-1)
- Right-of-way
- Glasgow Road Study Area
- Wetlands (Not Evaluated)
- Aquatic Resource Area
- Aquatic Resource Area



REFERENCE

GIS data provided by the Ontario Ministry of Northern Development, Mines, Natural Resources and Forestry, 2022.

100 50 0 100 Meters
Scale 1:3,500

CLIENT: TOWN OF CALEDON

PROJECT: EXISTING ENVIRONMENTAL CONDITIONS REPORT

TITLE: CONSTRAINTS AND OPPORTUNITIES

McINTOSH PERRY
115 Walgreen Road, RR3, Carp, ON K0A1L0
Tel: 613-836-2184 Fax: 613-836-3742
www.mcintoshperry.com

PROJECT NO: CCO-22-3677		FIGURE:
Date	Dec., 07, 2022	4
GIS	MG	
Checked By	JA	

4.2 Cultural Heritage Environment

Cultural heritage resources include archaeological resources, built heritage resources and cultural heritage landscapes.

4.2.1 Archaeological Resources

A Stage 1 Archaeological Assessment was conducted by Archaeological Research Associates (ARA) in June and November 2022. The objective of the Stage 1 Archaeological Assessment was to compile available information and potential cultural heritage resources within the study area in order to provide direction for the protection, management and/or recovery of these resources, consistent with the Ministry of Tourism, Culture and Sport (MTCS) Guidelines. For detailed information, please refer to the *Stage 1 Archaeological Assessment Report* (**Appendix B**).

The Stage 1 Archaeological Assessment determined that the study area comprises a mixture of areas of:

1. Areas of archaeological potential, and
2. Areas of no archaeological potential.

It was recommended that all areas of archaeological potential be subject to a Stage 2 Archaeological Assessment. The areas of archaeological potential include a variety of grassed, overgrown and wooded areas along the sides of the roadway platform. The grassed areas fronting the Jack Garratt Soccer Park have been categorized as areas of archaeological potential and subject to a Stage 2 to confirm that archaeological potential has been removed.

The areas of no archaeological potential and the previously assessed lands of no further concern do not require any additional assessment.

There are design/construction related disturbances proposed on TRCA lands and property access will be required. The Town will obtain the necessary approvals and permission to complete the work.

4.2.2 Built Heritage Resources and Cultural Heritage Landscapes

A Cultural Heritage Assessment Report (CHAR) was conducted by ARA in August 2022 and updated in December 2022 to include the additional study area. The purpose of this assessment is to identify and evaluate the cultural heritage resources within and adjacent to the study area that may be impacted by the proposed road improvement project. The Cultural Heritage Assessment Report approach included:

- Background research concerning the project and historical context of the study area,
- Consultation with Town of Caledon staff regarding heritage matters in the study area,
- Identification of any designated or recognized properties within and adjacent to the study area,
- On-site inspection and creation of an inventory of all properties with potential Built Heritage Resources and Cultural Heritage Landscapes within and adjacent to the study area,
- A description of the location and nature of potential cultural heritage resources,

- High-level evaluation of each potential cultural heritage resource against the criteria set out in Ontario Regulation 9/06 for determining cultural heritage value or interest,
- Evaluation of potential project impacts, and
- Provision of suggested strategies for the future conservation of identified cultural heritage resources.

As a result of consultation and field survey, three (3) Built Heritage Resources were identified within and adjacent to the study area: Steel Truss Bridge Over the Humber River on Glasgow Road, 611 Glasgow Road, and 561 Glasgow Road. In addition, three (3) Cultural Heritage Landscapes were identified within the study area: Humber Valley Heritage Trail, Humber River Corridor, and Glasgow Road Corridor.

It is unlikely that the heritage attributes of the Built Heritage Resources will be directly impacted by any road improvements, however, this will be confirmed during the detail design. A portion of the Humber Valley Heritage Trail and Glasgow Road Corridor may be impacted by the proposed roadway improvements. Further assessment will be required during the detailed design phase.

For detailed information and proposed mitigation measures, please refer to the Cultural Heritage Assessment Report (**Appendix C**).

4.3 Property and Jurisdiction

The Town of Caledon owns the Glasgow Road and Deer Valley Drive Right-of-Way (ROW). The lands directly adjacent to the Glasgow Road and Deer Valley Drive ROW are owned by private residents, developers and TRCA.

4.3.1 Toronto and Region Conservation Authority Lands

The TRCA maintains vital infrastructure and provides programs and services that promote public health and safety, protecting people and property (TRCA, 2023). TRCA owns various parcels of land within the study area.

As stated in Section 4.1.10.1, the Bolton Resource Management Tract (BRMT) is a 973-hectare property owned by the Toronto and Region Conservation Authority (TRCA, 2022). The BRMT is located within the study area north of Glasgow Road, east of Deer Valley Drive and includes Jack Garratt Soccer Park and Edelweiss Park.

TRCA also owns Dick's Dam Park on the south-east side of Glasgow Road and Deer Valley Drive, as well as the north side of Glasgow Road in the valley area of the Humber River adjacent to the road ROW. The majority of the study area is located within the TRCA regulated area, which includes regulated floodplains, unstable slope/soils natural features and wetlands. Any development in the study area is subject to *Ontario Regulation 166/06, Development, Interference with Wetlands and Alterations to Shorelines and Watercourses*.

4.4 Existing Road Condition

Glasgow Road is an east-west minor collector roadway with a typical 7.6 m roadway cross section, consisting of two paved lanes (one in each direction) and gravel / earth shoulders. Glasgow Road frames the northern edge of the residential neighbourhood and has an AADT of approximately 200 vehicles per day. The current Pavement Condition Index (PCI) rating for this roadway is 27, which is classified as "Very-Poor" under the Town's Asset

Management Plan. The west limit of the project area is characterized by a 90-degree corner where Glasgow Road turns into Chickadee Lane. The east end of the study area is bounded by the Y-intersection with Deer Valley Drive, where Deer Valley Drive is stop controlled.

Chickadee Lane is a minor two-lane collector road with a posted speed limit of 40 km/h. The road is oriented north south and connects De Rose Avenue in the south to Glasgow Road to the north.

Deer Valley Drive is a minor two-lane collector road with a posted speed limit of 40 km/h.

As the main internal transportation corridors, these linkages are essential in facilitating the safe and efficient movement of people, including cycling, pedestrian and vehicular connections throughout the neighbourhood (Humphries Planning Group, 2021).

Within the study area, Glasgow Road is a low volume local rural road servicing residential properties, rural properties and recreational facilities. The surrounding lands within and surrounding the study area consist of prime agricultural, recreational, and special residential dwellings, open space and are located within the Greenbelt Plan Protected Countryside Designation/Greenbelt.

4.5 Traffic Assessment

A traffic assessment was completed as part of the MCEA study. Within the project limits, Glasgow Road is functionally classified as a local road. The section of Glasgow Road within the project limits is 0.9 km in length and has a posted speed limit of 40 km/h.

Users of Glasgow Road within the project limits are perceived to be residents living in the area who travel to local communities or commute to work in the urban areas to the south. Additional traffic is associated with residents travelling to the local parks and fields that are located on Glasgow Road.

The Average Annual Daily Traffic (AADT) is estimated to be approximately 200 vehicles per day based on available historic traffic data. Applying a 2.0% growth rate suggests horizon year traffic volumes of 790 veh/day for 2027 and 810 veh/day for 2031, which accounts for the expected increase in traffic due to future developments in the area. The percent of commercial vehicles was not available for this study. However, based on McIntosh Perry's design experience with roadways that have similar conditions, a conservative estimate of 5% percent of commercial vehicles by traffic volume has been used for the Glasgow Road design.

For further detailed information, please refer to the Transportation Background Review Memorandum (**Appendix D**).

4.6 Pavement Design

A pavement condition survey was undertaken to supplement the pavement condition index that was provided by the Town. The existing significant pavement distresses observed included: severe wheel track rutting, severe distortions, severe alligator centreline cracking, severe alligator pavement edge cracking, severe multiple

transverse cracking, longitudinal wheel path alligator cracking, severe longitudinal, meander and random cracking.

These types of distresses are typically related to oxidization and freeze-thaw cycles rendering the asphalt stiff or brittle, poor drainage of the base (and subbase) aggregates, and a weak bearing capacity of the underlying subgrade. The advanced apparent age of the pavement surface and resulting oxidation of the asphalt lends to the deterioration of the pavement surface.

The urban reconstruction of Glasgow Road includes full depth removal of the existing asphalt:

- Glasgow Road, from Chickadee Lane to Deer Valley Drive (approximately 900 m section length), and
- Concrete sidewalk construction along the project limits of Glasgow Road and immediately adjacent to the west curb of Deer Valley Road from Glasgow Road to Bambi Trail.

The road section will be constructed to follow the Town's Development Charges standard cross-section, which recommends a 9.8 m pavement section width, which includes 3.5 m lanes and 1.5 m paved shoulders, and upgrades to improve road features, mixed traffic use, street, pedestrian and cycling route. The anticipated construction year for the road section is 2024.

4.7 Active Transportation & TRCA Trail Strategy

TRCA's Trail Strategy is a high-level masterplan that serves as a reference for TRCA and municipal partners to identify conceptual opportunities to connect gaps in existing regional level trails. TRCA's Trail Strategy outlines TRCA's plan to work with partners to complete, expand, manage, and celebrate a regionally connected trail network across their jurisdiction.

The TRCA Trail Strategy indicates that Glasgow Road from Emil Kolb Parkway to Edelweiss Park as a good opportunity to develop pedestrian/cycling infrastructure to connect the Emil Kolb Bikeway with the Humber Valley Heritage Trail. Glasgow Road and the trails in the area are heavily used by residents/pedestrians (TRCA, 2021). Conceptual alignments shown in the TRCA Trail Strategy are subject to factors including, but not limited to, feasibility, constructability, technical studies, planning, evaluation, permitting and approvals.

Within the Bolton Resource Management Tract (BRMT), is the Humber Valley Heritage Trail, a 30 km trail system. The trail head is located off Glasgow Road.

The Town of Caledon is interested in undertaking the connection of an existing trail / sidewalk on Deer Valley Drive through Glasgow Road via Chickadee Lane to Emil Kolb Parkway. The Town has identified the need for consideration of pedestrian traffic and cycling space requirements for connectivity to the active transportation network proposed in the Town of Caledon's TMP and the TRCA's Trail Strategy for the Greater Toronto Region. Given that Glasgow Road is a narrow roadway and is a relatively busy stretch of road used by both vehicular traffic and pedestrians, a separate pedestrian/cycling facility is proposed as part of the technically preferred alternative for the corridor improvements. TRCA's Trail Strategy criteria was considered as part of the evaluation of options

for the corridor improvements and options for enhanced trail connectivity within the study area were reviewed. The Town is anticipating connecting an existing sidewalk on Deer Valley Drive at Bambi Trail on the east side and continue on the east side of the roadway to Glasgow Road, crossing to the west-south side of the roadway on Glasgow Road and continue to Chickadee Lane and Emil Kolb Parkway.

A connection to the Emil Kolb Parkway is anticipated to be completed as part of the ongoing Zancor Development west of the study area.

TRCA's Trail Strategy network shows a conceptual connection along Glasgow Road from King Street to Deer Valley Drive and supports this trail / sidewalk connection in principle (TRCA, 2021). However, the trail connection to King Street West to Chickadee Lane is not part of this Glasgow Road EA.

4.8 Zancor Homes Development

The northwest, southwest and southeast corners of Glasgow Road and Chickadee Lane east of Emil Kolb Parkway are the subject of a 10.08 ha future subdivision development. The development will create 25 blocks consisting of 151 Street Townhouses. In addition, the development will also contain additional blocks required to service the development including a road widening along Glasgow Road, an 18-metre public road network and stormwater management facility block required to service the proposed development, open spaces blocks, tree planting/restoration areas, and a public parkette (Humphries Planning Group Inc., 2021). The future development will also create four (4) new roadways that will intersect with Glasgow Road and Chickadee Lane.

Sidewalks are proposed on both sides of all internal roads with the exception of Street C which contains a sidewalk on the east side only. The proposed sidewalks will provide residents with direct connections to the existing Multi-use Trail on Emil Kolb Parkway.

A potential trail system is also proposed that will travel along Glasgow Road, around the stormwater management pond (SWMP) and down Chickadee Lane and De Rose Avenue connecting to the Multi-use Trail on Emil Kolb Parkway.

The development review is ongoing and therefore an approved plan of subdivision was not available at the time of publishing. However, the draft plan considered during preliminary design, which shows anticipated layout of the subject lands, is appended. It is anticipated that the development will continue the proposed pathway from the study area limits west of Street 'A' as part of the final plan of subdivision.

5.0 CONSULTATION PROGRAM

Consultation is a key component of the MCEA process for Schedule "B" projects. It is important for members of the community and stakeholders to provide balanced and objective information and consulting them to obtain feedback on the study process, alternatives, and preliminary technically preferred solution.

A consultation program was developed specific to this study under the following basis:

- Present clear and concise information at key stages of the study process;
- Solicit community, regulatory and municipal staff input;
- Identify concerns related to the undertaking;
- Consider stakeholder comments when developing the technically preferred solution; and
- Meet MCEA consultation requirements.

Consultation early and throughout the MCEA process attempts to meet the growing expectation on the part of the public that they will be consulted regarding decisions made by public decision-making bodies.

5.1 Project Contact List

A Project Contact List was developed at the initiation of this study and regularly updated throughout the course of the project to add, remove or revise information as necessary. The Project Contact list includes government ministries/agencies, municipal staff, municipal elected officials, emergency services, school boards, student transportation, businesses, potentially affected pubic, member of provincial parliament, Indigenous Communities and key interest groups. The Project Contact List can be found in **Appendix E**.

All notices were sent out via email and/or mailout through Canada Post, as required. The notice was also published in the Caledon Enterprise, as well as the Town of Caledon's website.

5.2 Project Team

The following Project Team was involved in carrying out this MCEA:

Proponent:	Town of Caledon
Contact Information:	Shun H. Cheung, P.Eng., PMP Project Manager, Engineering Services Tel: 905.584.2272 ext. 4040 E-mail: shun.cheung@caledon.ca
Prime Consulting Engineer:	McIntosh Perry Consulting Engineers Ltd.
Contact Information:	Mehemed Delibasic, P.Eng., M.Sc. Consultant Project Manager Tel: 647.463.7993 E-mail: m.delibasic@mcintoshperry.com

5.3 Study Commencement

Notice of Study Commencement letters were distributed by McIntosh Perry on April 4th, 2021, to the project Contact List. The Notice of Study Commencement was posted to the Town of Caledon's website. The Notice of Study Commencement materials can be found in **Appendix E.**

Responses received by various stakeholders as a result of the Notice of Study Commencement and consultation responses, including emails received and sent by the project team and summary table, are enclosed in **Appendix E.**

5.4 Indigenous Community Involvement

Engaging Indigenous Communities is an important way of acknowledging interest in the stewardship of their heritage.

The following Indigenous Communities were engaged during the consultation process for this MCEA study: Mississaugas of the New Credit First Nation, Six Nations of the Grand River, Haudenosaunee Confederacy Chiefs Council, and Huron-Wendat Nation. The Métis Nation of Ontario (MNO) was also included on the project notification list. No responses were received from the Indigenous Communities during consultation.

Through the Stage 1 Archaeological Assessment process, ARA consulted with Mississaugas of the New Credit First Nation, Six Nations of the Grand River, Haudenosaunee Confederacy Chiefs Council, and Huron-Wendat Nation and provide them with an opportunity to review the Stage 1 Archaeological Assessment. Mississaugas of the New Credit First Nation, Six Nations of the Grand River, and Huron-Wendat Nation had no comments pertaining to the report or study. Haudenosaunee Confederacy Chiefs Council never provided a response.

Following the 30-day public review period of the Project File Report, McIntosh Perry and the Town of Caledon will follow up with the Indigenous Communities to ensure they received the MCEA documentation and that the Indigenous Communities have no further concerns pertaining to this assignment. Indigenous Communities will be further consulted during the detail design process, as well as the Stage 2 Archaeological Assessment.

Consultation with Indigenous Communities and corresponding responses, including letters and emails received and sent, are enclosed in **Appendix G.**

5.5 Public Information Centres

5.5.1 Public Information Centre #1

In compliance with the MCEA process, the Town hosted a Public Information Centre (PIC) #1 to elicit input on the study process and the design alternatives on January 30, 2023. Notice of Public Information Centre (PIC) letters were distributed on January 12, 2023, to the project contact list and properties on the Town of Caledon. The Notice of PIC was posted on the Town of Caledon's website on January 10, 2023, and advertised in the Caledon Enterprise newspaper on January 12th and 19th, 2023. The Notice of PIC can be found in **Appendix E**.

Several responses to PIC #1 were directed to the project team, which have been summarized in **Appendix F,** as well as comments/responses received during the PIC. The PIC boards can be found in **Appendix H.**

5.5.2 Public Information Centre #2

The Town hosted Public Information Centre (PIC) #2 to elicit input on the study process and the technically preferred alternative on September 21st, 2023. Notice of Public Information Centre (PIC) #2 letters were distributed on September 7th, 2023, to the project contact list and adjacent property owners. The Notice of PIC was posted on the Town of Caledon's website on September 7th, 2023, and advertised in the Caledon Enterprise newspaper on September 7th and 20th, 2023. The Notice of PIC #2 can be found in **Appendix E**.

Responses to PIC #2 that are directed to the project team are summarized in **Appendix F**, as well as copies of comments/responses received during PIC. The PIC boards can be found in **Appendix H.**

5.6 Notice of Completion

A Notice of Completion will be distributed on November 23, 2023, to the project contact list (**Appendix E**). The Notice of Completion will be posted on the Town of Caledon's website and advertised in the Caledon Enterprise. The Notice of Completion can be found in **Appendix E** with the Consultation Plan.

The purpose of the Notice of Completion is to advise of the commencement of the 30-day public review period for the Project File Report prepared as part of this MCEA. The Notice of Completion advises that Interested persons may provide comment to the project team within 30 calendar days from the start of the public review period. In addition, the letter advises that a request may be made to the Ministry of the Environment, Conservation and Parks for an order requiring a higher level of study (i.e., requiring an individual/comprehensive EA approval before being able to proceed), or that conditions be imposed (e.g., require further studies), only on the grounds that the request order may prevent, mitigate or remedy adverse impacts to constitutionally protected Aboriginal and treaty rights. Requests on other grounds will not be considered.

During the 30-day public review period for the Project File Report, responses received by the project team will be summarized within the Project File Report. Comments/responses received, will be appended in **Appendix F.**

6.0 EVALUATION OF ALTERNATIVE SOLUTIONS

The main objective of Phase 2 of a Class EA is to identify and evaluate possible alternative solutions to address the Problem/Opportunity Statement identified in Phase 1. The following sections describe the evaluation methodology for reviewing each alternative solutions, the identification and review of alternative solutions, and the identification of the r***ecommended Technically Preferred Alternative.***

6.1 Evaluation Methodology

An evaluation of Alternative Solutions was undertaken to address the problem and opportunity statement identified for this project (**Section 3.1**), considering all aspects of the MCEA study. All reasonable potential solutions to the problem(s), including the 'Do Nothing' option, are considered. The overall assessment and evaluation process followed two basic concepts: The overall assessment and evaluation process followed two basic concepts:

1. **Assessment of Alternatives:** the potential benefits of each alternative are assessed against a comprehensive set of criteria for Structural Integrity/Public Safety, Natural Environment, Socio-economic and Implementation factor groups.

    - **Transportation/Technical** – Evaluates whether the alternative Solution addresses the transportation problems and opportunities identified along the Glasgow Road corridor; as well as evaluate the technical suitability and engineering characteristics of the design concept.
    - **Natural Environment** – Evaluates the alternative design concept's effects on the natural heritage systems, natural environment and habitats (i.e., fisheries, wildlife, etc.), air and water quality.
    - **Social/Cultural Environment** – Evaluates the alternative design concept's effects on businesses, community and social features, properties, and archaeological, built and cultural heritage resources within the study area.
    - **Implementation** – The financial implications and implementation opportunities of the alternative design concept.

2. **Evaluation of Alternatives:** A comparative evaluation of alternatives to identify a preliminary technically preferred design alternative.

An evaluation framework was developed by the Project Team, including technical considerations that address the broad definition of the environment as described in the EAA and those based on comments received from stakeholders. The evaluation of alternatives was carried out using the Reasoned Argument method of comparing differences in impacts and providing a clear rationale for the selection of the technically preferred alternative. **Table 1** identifies the evaluation criteria and rationale, as well as the criteria measures and corresponding descriptions.

The evaluation of Alternative Solutions considers the positive and negative potential impacts associated with each of the design alternatives in consideration of the criteria listed in **Table 1**. This evaluation is a relative comparison to be used to determine which alternative is technically preferred.

As illustrated in **Figure 5**, each criterion was given a score on a scale from least preferred (empty circle) to most preferred (solid circle).

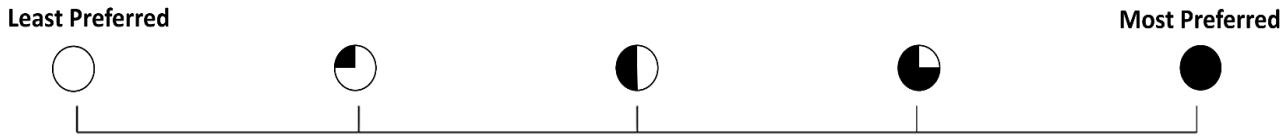


Figure 5: Evaluation of Alternative Solutions Scale of Preference

Table 1: Evaluation Criteria and Measures

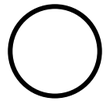
Evaluation Criteria	Description of Criteria	Criteria Measures	Alternative 1 (Do Nothing)	Alternative 2 (Rural Section with Multi-Use Path)	Alternative 3 (Urban Section with Multi-use Path)
Transportation / Technical	Criteria to evaluate whether the alternative design concept addresses the transportation problems and opportunities identified along the Glasgow Rd. corridor; as well as evaluate the technical suitability and engineering characteristics of the design concept.	Transportation / Infrastructure Plans and Policies			
			Does not conform to Town of Caledon's Transportation Master Plan. Does not conform to Town of Caledon's Asset Management Strategy. Does not conform to the Town of Caledon's 2019 Development Charge (DC)Background Study.	Meets or exceeds recommendations of the Town of Caledon's Transportation Master Plan. Meets the objectives of the Town of Caledon's Asset Management Plan. Conforms to the Town of Caledon's 2019 Development Charge (DC) Background Study.	Meets or exceeds recommendations of the Town of Caledon's Transportation Master Plan. Meets the objectives of the Town of Caledon's Asset Management Plan. Conforms to the Town of Caledon's 2019 Development Charge (DC) Background Study.
		Vehicular Capacity / Traffic Operations	Low potential to improve vehicular capacity and traffic operations. Maintains existing conditions.	Moderate potential to improve vehicular capacity. Improves traffic operations via enhanced driver comfort through separation of vehicles and pedestrians. Operational improvements may provide better potential to accommodate future multi-modal travel demands and multi-modal connectivity in the study area. No opportunity to correct existing alignment deficiences.	Moderate potential to improve vehicular capacity. Improves traffic operations via enhanced driver comfort through separation of vehicles and pedestrians. Operational improvements may provide better potential to accommodate future multi-modal travel demands and multi-modal connectivity in the study area. No opportunity to correct existing alignment deficiencies.
		Safety	Low potential to improve traffic safety. Maintains existing conditions.	Improves safety for road users. Increased separation prevents potential conflicts associated with pedestrians / active transportation users on the travelled portion of the roadway. No opportunity to correct deficient roadway geometry.	Improves safety for road users. Increased separation prevents potential conflicts associated with pedestrians / active transportation users on the travelled portion of the roadway. Addition of curb and gutter will improve surface drainage, reduced accumulation of precipitation, ice and snow in winter months and reduce the potential for collisions. No opportunity to correct deficient roadway geometry.
		Active Transportation	Low potential for improvements to Active Transportation. Existing roadway does not provide accommodation for pedestrians/cyclists. AT users are forced to share travelled portion of the roadway with vehicles.	Provides opportunity to incorporate improvements for pedestrians and/or cyclists in the form of sidewalk or two-way multi-use path. Provides opportunity to improve connectivity between Town / Regional cycling and trail networks.	Provides opportunity to incorporate improvements for cyclists in the form of enhanced on-road facilities (paved shoulders). Potential for increased separation between cyclists and vehicular traffic through platform widening. Provides opportunity to improve connectivity between Town / Regional cycling networks.

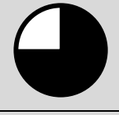
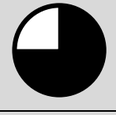
Table 1: Evaluation Criteria and Measures					
Evaluation Criteria	**Description of Criteria**	**Criteria Measures**	**Alternative 1** (Do Nothing)	**Alternative 2** (Rural Section with Multi-Use Path)	**Alternative 3** (Urban Section with Multi-use Path)
		Transit	Not on transit route.	Not on transit route.	Not on transit route.
		Emergency Services	Low potential for improvements to emergency response times.	Potential reduction to emergency service response times with improved driving surface, improved Level of Service (LOS) when compared to Do Nothing alternative. Paved shoulder provides additional hard surface for vehicles pulling over to allow emergency vehicles to pass.	Potential reduction to emergency service response times with improved driving surface, improved Level of Service (LOS) when compared to Do Nothing alternative. Paved shoulder and potential for increased platform width provides additional area for vehicles pulling over to allow emergency vehicles to pass.
		Access Considerations	No impact to adjacent property access within the study area.	Potential for minor impacts to adjacent property access with resurfacing and possible grade raise.	Potential for impacts to adjacent property access with resurfacing and possible grade raise and possible widening.
		Utilities	Does not impact existing utilities within the study area. No opportunity for utility upgrades.	Low potential for impacts to utilities within the study area. Provides opportunity for localized utility / servicing upgrades.	Potential for impacts to utilities, possible accommodation/relocation of above and below ground utilities. Potential for utility pole relocations to facilitate modified road platform. Provides opportunity for utility / servicing upgrades.
		Stormwater/Drainage	No impact to existing stormwater management / drainage.	Opportunity for limited improvements to overall stormwater management within study area through enhanced roadside ditching and culvert replacement/upsizing. Low potential to impact runoff volumes through increased hard surface area (sidewalk or MUP).	Opportunity for improved stormwater management and surface drainage within study area through addition of curb and gutter, catchbasins and additional outlet(s). Low potential to impact overall runoff volumes through increased hard surface area (sidewalk / MUP), high potential for changes to overall drainage pattern, and concentrated outflows at stormwater outlet(s).
Natural Environment	Criteria to evaluate the alternative design concept's effects on the natural heritage systems, natural environment and habitats, air and water quality.	Environmentally Sensitive Areas	 No impacts to environmentally sensitive areas.	 Moderate temporary impacts on environmental sensitive areas due to the necessary ditching, disturbances to vegetation (tree removal), noise, dust and human presence associated with this option.	 Minor impacts on environmentally sensitive areas due to the necessary due to the necessary ditching, disturbances to vegetation (tree removal), noise, dust and human presence associated with this option.

Table 1: Evaluation Criteria and Measures					
Evaluation Criteria	**Description of Criteria**	**Criteria Measures**	**Alternative 1** (Do Nothing)	**Alternative 2** (Rural Section with Multi-Use Path)	**Alternative 3** (Urban Section with Multi-use Path)
		Wildlife Habitats (Terrestrial)	No impacts to wildlife habitats (terrestrial).	Minor temporary impacts to wildlife habitats due to the necessary ditching, disturbances to vegetation (tree removal), noise, dust and human presence associated with this option.	Minor, temporary impacts on wildlife habitats ditching, disturbances to vegetation (tree removal), noise, dust and human presence associated with this option.
		Fisheries/Aquatic Impacts	No impacts to fisheries/aquatic habitat.	Minor, temporary impacts on fish and aquatic habitats due to ditchline regrading.	Minor, temporary impacts on fish and aquatic habitats due to the addition of an underground storm sewer and/or new outlet(s).
		Species at Risk	No impacts to SAR or SAR habitat. No impacts to Butternut trees.	Moderate impacts to Butternut trees and habitat.	Minor impacts to Butternut trees and habitat.
		Existing Watercourses	No impacts to existing watercourses.	Minor, temporary impacts on existing watercourses as a result of ditchline regrading.	Minor, temporary impacts on existing watercourses as a result of the addition of an underground storm sewer and/or new outlet(s).
		Ground and Surface Water Quality/Quantity	No impacts on ground and surface water quality/quantity.	Minor, temporary impacts to surface water quality during construction (sediment). No impacts to groundwater quality/quantity.	Minor, temporary impacts to surface water quality during construction (sediment). No impacts to groundwater quality/quantity.
		Air Quality	No impacts on air quality.	No impacts on air quality.	No impacts on air quality.

Table 1: Evaluation Criteria and Measures

Evaluation Criteria	Description of Criteria	Criteria Measures	Alternative 1 (Do Nothing)	Alternative 2 (Rural Section with Multi-Use Path)	Alternative 3 (Urban Section with Multi-use Path)
Social and Cultural Environment	Criteria to evaluate the alternative design concept's effects on businesses, community and social features, properties, and archaeological, built and cultural heritage features within the study area.	Land Use / Socio-Economic Conditions			
			No change to existing land use/socio-economic conditions, however with the roadway deteriorating over time there may be long-term impacts.	Land Use / Socio-Economic Conditions are expected to improve due to a safer roadway platform as a result of a 1.5 m wide sidewalk or 3.0 m wide Multi-Use Path on one side of the roadway.	Land Use / Socio-Economic Conditions are expected to improve due to a safer roadway platform as a result of a 1.5 m wide sidewalk or 3.0 m wide Multi-Use Path on one side of the roadway.
		Property Impacts	No impacts to property.	Potential for property acquisition associated with grading required to accommodate the new sidewalk or Multi-Use Path and ditching.	Potential for property acquisition associated with grading required to accommodate the new sidewalk or Multi-Use Path and the addition of an underground stormsewer and/or new outlet(s).
		Archaeological, Built Heritage and Cultural Heritage Resources	No impacts on archaeology, built heritage or cultural heritage resources.	Potential archaeological and heritage impacts associated with work in previously undisturbed areas outside existing ROW.	Potential archaeological and heritage impacts associated with work in previously undisturbed areas outside existing ROW.
		Noise Levels	No impacts on noise levels.	No impacts on noise levels.	No impacts on noise levels.
		Construction Impacts	No construction impacts.	Construction impacts expected to be minor, single lane closures for one construction season. Temporary impacts to residential driveway access and park access.	Construction impacts expected to be moderate, requiring localized detours for one construction season. Open cut installation of storm sewer and outlets likely to limit staging opportunities. Construction may impact residential driveway access and park access.
Implementation	Criteria to evaluate the financial implications and implementation opportunities of the alternative design concept.	Capital Costs			
			Lowest capital cost of alternatives. Maintains status quo.	Moderate to high capital cost.	Highest anticipated capital cost.

Table 1: Evaluation Criteria and Measures					
Evaluation Criteria	**Description of Criteria**	**Criteria Measures**	**Alternative 1** (Do Nothing)	**Alternative 2** (Rural Section with Multi-Use Path)	**Alternative 3** (Urban Section with Multi-use Path)
		Operational and Maintenance Costs	No impact on operational and maintenance cost.	Moderate impacts to operational and maintenance costs. Additional winter maintenance for clearing proposed AT facility. Regular lifecycle maintenance of additional hard-surface infrastructure. Oppertunuty to improve existing infrastructure (cross-culverts, driveway culverts, entrances) reduces future maintenance requirements.	High impact to operational and maintenance costs. Additional winter maintenance for clearing proposed sidewalk/MUP. Catchbasin and storm sewer cleanout.
		Phasing Opportunities	Does not present any phasing opportunities.	Presents opportunities for phasing with adjacent development.	Presents opportunities for phasing with adjacent development.
Overall					

7.0 TECHNICALLY PREFERRED ALTERNATIVE SOLUTION

The alternatives were assessed against the evaluation criteria as appropriate. The overall comparative evaluation of alternatives was based on a qualitative methodology and did not include the assignment of factor significance weightings, however transportation/operational, technical/structural, and implementation considerations were considered to be the three most important criteria groupings.

The selection of the recommended alternative solution involved identifying and making trade-offs among the advantages and disadvantages of the alternatives. The alternative that had the most overall advantages was recommended as the technically preferred alternative.

Based on the above evaluation the Technically Preferred Alternative Solution (TPA) is **Alternative 2: Rural Section with Multi-Use Path.**

The recommended TPA allows the Town to improve driver safety and provides an opportunity to incorporate improvements for pedestrians and cyclists on Glasgow Road. This option was determined to have the best balance of benefits for transportation/technical while having minimal impacts to the socio-economic and natural environment. Benefits of this option include minimizing impacts to the existing regulated area and Humber River embankment north of the existing right-of-way. This option has moderate capital costs, however this alternative can be considered an economical solution based on the anticipated extension of service life. The anticipated lifecycle for this alternative is 20+ years.

The preferred alternative selected for implementation consists of maintaining the existing 3.3 m wide lanes. The cross-section will be modified through the addition of Active Transportation Facilities in the form of a 2.4-3.0 m wide Multi-Use Path on one side of the roadway. Roadside ditching and existing drainage patterns will be maintained / enhanced. This alternative will also provide the opportunity to improve connectivity between Town/Regional cycling and trail networks.

8.0 SUMMARY AND CONCLUSIONS

Based on the comprehensive review of three (3) different alternative solutions against a multiple bottom line evaluation process that takes into consideration environmental, social, constructability, financial, and operational factors, **Alternative Solution 2 - Rural section with Multi-Use Path**, has been identified as the TP as it addresses the problem statement for this study.

The TPA offers the best asset value to the Town of Caledon from an operations, maintenance and lifecycle perspective, whilst having minimal overall impact to the natural environment.

8.1 Public Review Period

This Project File Report meets the requirements of a Schedule "B" Municipal Class EA study. The Project File Report has been filed for 30-days, from November 23, 2023 to December 22, 2023, for public reviewing and comment.

During the Public Review Period, a request may be made to the Ministry of Environment, Conservation and Parks for an order requiring a higher level of study, or that conditions may be imposed, only on the grounds that the requested order may prevent, mitigate or remedy adverse impacts on constitutionally protected Aboriginal and treaty rights. Request on other grounds will not be considered.

Requests should specify what kind of order is being requested, how an order may prevent, mitigate or remedy those potential adverse impacts, and any information in support of the statements in the request. The request should be sent in writing or by email to the proponent and the following:

Minister of the Environment, Conservation and Parks
Ministry of Environment, Conservation and Parks
77 Bay Street, 5th Floor
Toronto, ON M7A 2J3
Minister.mecp@ontario.ca

Director, Environmental Assessment Branch
Ministry of Environment, Conservation and Parks
135 St. Clair Ave. W, 1st Floor
Toronto, ON M4V 1P5
EABDirector@ontario.ca

Provided no comments or Section 16 requests are received during the 30-day review process, it is recommended that the Town of Caledon proceed with detail design and implementation.

8.2 Permitting and Approvals

Following permitting and approvals will be required during the detail design stage:

Toronto and Region Conservation Authority (TRCA): Ontario Regulation 166/06 Development, Interference with Wetlands and Alternations to Shorelines and Watercourses – Administers a regulation made under Section 28 of the Conservation Authorities Act known as Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (O.Reg. 166/06). A permit is required from TRCA prior to any development if, in the opinion of TRCA, the control of flooding, erosion, dynamic beaches or pollution or the conservation of land may be affected. Any development within the Regulation Limit must comply with the applicable sections of The Living City Policies (2014) specifically Section 8.

If TRCA property land transfer or easement is required for the implementation of the preferred alternative, further consultation and approval will be required from TRCA. The design must demonstrate that TRCA program and policy objectives are met.

If TRCA property access is required for the purpose of completing technical studies associated with this project, a Permission to Enter (PTE) must be obtained from TRCA Property Staff prior to entry.

Ministry of the Environment, Conservation and Parks (MECP): A Permit to Take Water (PTTW) or Environmental Activity Sector Registry (EASR) will be required if dewatering activities will be greater than 50,000 + litres of water a day from the environment. During the detail design, a review of water-taking activities will need to be completed to determine if there are any significant concerns with respect to short-term pumping of shallow groundwater.

The EASR regulation prescribes the takings of ground water and stormwater for the purpose of dewatering construction projects that require dewatering between 50,000 and 400,000 L/day. Activities required to be registered in the EASR do not require a PTTW for the water taking. An environmental compliance approval (ECA) under section 53 of the *Ontario Water Resources Act* (OWRA) is also not required for the discharge of stormwater.

A Permit-to-Take-Water regulation prescribes the takings of ground water and stormwater for the purpose of dewatering construction projects that require dewatering greater than 400,000 L/day. Applying for the permit involves the submission of an application and appropriate scientific evaluation/studies. MECP will review the permit application, measuring it against a number of requirements. Designated PTTW applications will be posted on the Environmental Registry in accordance with the Environmental Bill of Rights and consider public comments in its decision. The permit authorizes you to withdraw water from a water source(s) according to the terms and conditions on the permit.

8.3 Commitments During Detail Design

During this study, the following were identified for consideration during the Detail Design phase of this MCEA study:

- Toronto and Region Conservation Authority (TRCA)
    - TRCA Living Cities Policy Sections 7 & 8 will be furthered considered for implementation during the detailed design stage of the project, as well as fulfill the requirements of O.Reg. 166/06.
    - If TRCA property land transfer or easement is required for the implementation of the preferred alternative/detail design, further consultation and approval will be required from TRCA. The detail design must demonstrate that TRCA program and policy objectives are met.
    - Property access will be required on TRCA lands and therefore, the Town will obtain Permission to Enter prior to entry onto TRCA owned lands.
- Stormwater Management
    - The current and planned drainage features of the site will be assessed. Any detrimental effects of the planned reconstruction on downstream receiving systems will be assessed and mitigation measures will be recommended as required.
    - Relevant quality control measures will be examined and applied in consideration of the site's specific requirements, extent of changes in land use and cover, and its proximity to the Humber River.
    - Proposed storm sewer infrastructure will be assessed along with design for proposed outfall(s) to ensure adequate capacity and proper distribution of flow.
    - Considering available drainage data, the hydraulic capacity of centerline culverts located within the study area will be evaluated for hydraulic capacity, such that recommendations for replacements can be made if they are found to be necessary.
    - TRCA will be engaged and consulted to facilitate communication and establish project boundaries within the site's limitations, noting that the project limits are situated within the Humber River floodplain, as indicated by floodplain mapping from which identifies potential spill-over at the intersection of Glasgow Road and Deer Valley Drive. The reconstruction project will strictly adhere to the current site limitations to avoid any modifications to the floodplain. In the event that TRCA deems it necessary, additional flood impact studies will be carried out as a separate service.

- Ministry of Environment Conservation and Parks (MECP):
    - Noise control measures should be addressed and included in the construction plans to ensure that nearby residents and sensitive land uses within the study area are not adversely affected during construction.
    - All waste generated during construction must be disposed of in accordance with ministry requirements and under the Environmental Protection Act, all excess materials must be managed in accordance with O.Reg. 406/19 (Excess Soils).
    - Consultation should be continued with Indigenous Communities during Detail Design.
- Species at Risk:
    - Butternut is listed as endangered on the Species at Risk in Ontario List (SARO List) in O. Reg. 230/08. Butternut and its habitat are protected under the ESA. Due to the presence of Butternut, a Butternut Health Assessment should be completed to assess the health of the trees that will be impacted in order to satisfy one of the prerequisite conditions of ss. 25(2) of O.Reg. 830/21.
    - The MECP advised that if the proponent believes that the proposed activities will have an impact on SAR or are unsure of the impacts, they should contact SAROntario@ontario.ca to undergo a formal review under the ESA, and ensure that if the proposed activities cannot avoid impacts to species and/or their habitat, then authorization under the Endangered Species Act (ESA) is required.
- Migratory Birds and Wildlife:
    - Due to the presence of several migratory birds, vegetation clearing must occur outside the bird nesting window to avoid contravention of the MBCA and FWCA. If vegetation removal must occur within the nesting window, the Contractor must retain a qualified avian biologist to conduct a nesting survey prior to clearing. If actively nesting migratory birds are encountered at any time of year, works should not continue in the location of the nest until:
        - After it has been determined by a qualified avian biologist that the young have fledged and vacated the nest and work area; or
        - A qualified avian biologist determines a suitable buffer distance at which work may continue to prevent disturbance of the bird(s);
        - Where a buffer distance has been implemented, a qualified avian biologist must undertake monitoring during construction to ensure migratory birds and their eggs are not disturbed, destroyed or taken.
- Environmental Impact Assessment//Mitigation Measures
    - An Environmental Impact Assessment will be prepared in accordance with TRCA Environmental Impact Statement Guidelines (Oct 2014) for the detail design. The EIS will assess the potential adverse impacts as a result of the project design details, proposed construction methodology,

location (including staging areas), scheduling and operations, and identify applicable mitigation measures to be incorporated in the Contract Drawings and package.

- Archaeological Resources
    - Based on the findings of the Stage 1 Archaeological Assessment, ARA recommends that all areas of archaeological potential be subject to a Stage 2 assessment prior to any ground disturbing activities.
    - All archaeological assessments will be undertaken by a licenced archaeologist. MHSTCI recommends that any required further assessments (e.g., Stage 2-4) be completed as early as possible in the Detail Design phase and prior to any ground disturbing activities. The following approaches will be used to mitigate potential negative impacts of the project:
        - Compliance with the recommendations from the Stage 1 archaeological assessment report.
        - If archaeological resources are impacted by EA project work, notify MHSTCI at archaeology@ontario.ca. All activities impacting archaeological resources must cease immediately, and a licenced archaeologist is required to carry out an archaeological assessment in accordance with the *Ontario Heritage Act* and the *Standards and Guidelines for Consultant Archaeologists*.
        - If human remains are encountered, all activities must cease immediately, and the local police and coroner must be contacted. In situations where human remains are associated with archaeological resources, MHSTCI should also be notified (archaeology@ontario.ca) to ensure that the site is not subject to unlicensed alterations which would be a contravention of the *Ontario Heritage Act*.
- Built Heritage Resources and Cultural Heritage Landscapes
    - Compliance with the recommendations from the Cultural Heritage Assessment Report.
    - Further consultation the Town of Caledon Heritage Planner during detail design.

9.0 REFERENCES

Archaeological Research Associates. 2022. *Stage 1 Archaeological Assessment*. November 2022.

Archaeological Research Associates. 2022. *Cultural Heritage Assessment Report*. December 2022.

Bird Studies Canada, 2006. *Atlas of the Breeding Birds of Ontario*. http://www.birdsontario.org/atlas/index.jsp. Accessed June 2022.

Crins, W.J., P.A. Gray, P.W.C. Uhlig, and M.C. Wester. 2009. *The Ecosystems of Ontario, Part 1: Ecozones and Ecoregions*. Inventory, Monitoring and Assessment Section. Science and Information Branch. Ontario Ministry of Natural Resources. Ontario, Canada: Queen's Printer for Ontario. 87p.

CTC Source Protection Committee. 2019. *Approved Source Protection Plan: CTC Source Protection Region*. https://ctcswp.ca/app/uploads/2022/05/RPT_20220520_Amended_CTCSPP_v5_clean.pdf. Accessed June 2022.

Department Fisheries and Oceans Canada. 2018. *Aquatic species at risk mapping tool*. https://open.canada.ca/data/en/dataset/e0fabad5-9379-4077-87b9-5705f28c490bj. Accessed June 2022.

Endangered Species Act. 2007. S.O. 2007, c. 6. Current version October 19, 2021.

Environmental Assessment Act. 1990. R.S.O. 1990, c. E-18. Current version January 1, 2022.

Fish and Wildlife Conservation Act. 1997. S.O. 1997, c. 41. December 2020 – June 2021 version.

Impact Assessment Act. 2019. S.C. 2019, c. 28, s.1. Current version April 4, 2023.

Humphries Planning Group Inc. 2021. *Community Design Plan and Urban Design Brief.*

Migratory Birds Convention Act. 1994. S.C. 1994, c. 22. December 2017 version.

Ministry of the Environment, Conservation and Parks (MECP). 2021. *Map: Well Records*. https://www.ontario.ca/environment-and-energy/map-well-records. Accessed June 2022.

Ministry of Natural Resources and Forestry (MNRF). 2015. *Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E*. https://dr6j45jk9xcmk.cloudfront.net/documents/4775/schedule-6e-jan-2015-access-ver-final-s.pdf. Accessed June 2022.

Ministry of Natural Resources and Forestry (MNRF). 2018. *Land Information Ontario metadata tool*. https://www.ontario.ca/page/land-information-ontario. Queen's Printer of Ontario. Accessed June 2022.

Ministry of Natural Resources and Forestry (MNRF). 2021. *Make A Map: Natural Heritage Areas*. Ministry of Natural Resources and Forestry. http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US. Queen's Printer for Ontario. Accessed June 2022.

Ministry of Natural Resources and Forestry (MNRF). 2021. *Fish ON-Line*. Queen's Printer of Ontario. https://www.gisapplication.lrc.gov.on.ca/FishONLine/Index.html?site=FishONLine&viewer=FishONLine&locale=en-US. Accessed June 2022.

Ministry of Municipal Affairs and Housing. 2017. *Greenbelt Maps.* https://www.ontario.ca/page/ministry-municipal-affairs-housing. Accessed June 2022.

Ontario Nature. 2020. *Ontario Reptile and Amphibian Atlas: A citizen science project to map the distribution of Ontario's reptiles and amphibians*. Ontario Nature. http://www.ontarionature.org/atlas. Accessed June 2022.

Paradigm Transportation Solutions Limited. 2009. Caledon Transportation Needs Study Update.

Region of Peel. 2022. *Region of Peel Official Plan*. https://www.peelregion.ca/officialplan/download/. Accessed June 2022.

Species at Risk Act. 2002. S.C. 2002, c. 29. Current version April 4, 2023.

Toronto Entomologist' Association. 2020. *Ontario Butterfly Atlas*. https://www.ontarioinsects.org/atlas/. Accessed June 2022.

Toronto and Region Conservation Authority. 2021. *Trail Strategy*. https://trca.ca/conservation/lands/trail-strategy/. Accessed June 2022.

Toronto and Region Conservation Authority. 2014. *The Living City Policies*. https://trcaca.s3.ca-central-1.amazonaws.com/app/uploads/2021/10/20155211/2329_TheLivingCityPolicies_rev19_forWeb.pdf. Accessed June 2022.

Town of Caledon. 2018. *Town of Caledon Official Plan*. https://www.caledon.ca/en/town-services/official-plan.aspx. Accessed June 2022.

Town of Caledon. 2020. Asset Management Plan. https://www.caledon.ca/en/town-services/resources/Finance/Asset-Management/2020-Asset-Management-Plan.pdf. Accessed June 2022.

Town of Caledon. 1986. Noise By-Law. https://www.caledon.ca/uploads/14/Doc_637203060367699724.pdf?ts=638330496476278369. Access June 2022.

Town of Caledon. 2017. Transportation Masterplan.

Watson and Associates Economists Ltd. 2021. Town of Caledon Development Charges Update Study.

Watson and Associates Economists Ltd. 2021. Town of Caledon Addendum to Development Charges Update Study.

Weed Control Act. 1990. R.S.O, 1990, c. W.5. December 2019-2021 version.

APPENDIX A – SUMMARY OF EXISTING ENVIRONMENTAL CONDITIONS

EXISTING ENVIRONMENTAL CONDITIONS REPORT

Municipal Class Environmental Assessment Study, Glasgow Road, Caledon, Ontario

MP Project No.: CCO-22-3677

Prepared for:

TOWN OF CALEDON

Town of Caledon
6311 Old Church Rd
Caledon ON L7C 1J61

Prepared by:

McINTOSH PERRY

McIntosh Perry Consulting Engineers Ltd.
115 Walgreen Road
R.R. 3 Carp, ON K0A 1L0

EXISTING ENVIRONMENTAL CONDITIONS REPORT

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT STUDY, GLASGOW ROAD, CALEDON, ONTARIO

Prepared for:

TOWN OF CALEDON

Town of Caledon
6311 Old Church Rd
Caledon ON L7C 1J61

Prepared by:

McINTOSH PERRY

McIntosh Perry Consulting Engineers Ltd.
115 Walgreen Road, R.R. 3
Carp, Ontario, K0A 1L0

December 19, 2022

Prepared by:

Patrick Gilhooly
Biologist
McIntosh Perry Consulting Engineers Ltd.

Reviewed by:

Kenneth Jobitty
Manager, Natural Sciences
McIntosh Perry Consulting Engineers Ltd.

Table of Contents

FIGURES

TABLES

APPENDICES

1.0 INTRODUCTION

To address challenges associated with infrastructure and population growth, the Town of Caledon (referred to as "the Town") has established a Growth-Related Roads program, which includes the following segment of Glasgow Road, and an additional segment including Deer Valley Drive (**Figure 1)**:

- Glasgow Road from Chickadee Lane to Deer Valley Drive located in Ward 5 (910 m)
- Deer Valley Drive from Glasgow Road to Bambi Trail (287 m)

The intent of the project is to reconstruct/upgrade the existing rural road segments in accordance with the Town's Development Charges Study which recommends improvements to Glasgow Road including a two-lane roadway with 3.5 m wide lanes and 1.5 m paved shoulders, for a total length of 910 m of reconstruction. For Deer Valley Drive, the works proposed include the design of a sidewalk along the west side of Deer Valley Drive. Specifically, the project will consist of road reconstruction, resurfacing, widening for a paved shoulder, and drainage improvements. Typically, for this type of rural road improvement, several constraints will pose challenges during design and construction. The roadway in both segments has a narrow platform with varied gradient side slopes with some steep profile grades and significant trees along portions of the road corridor.

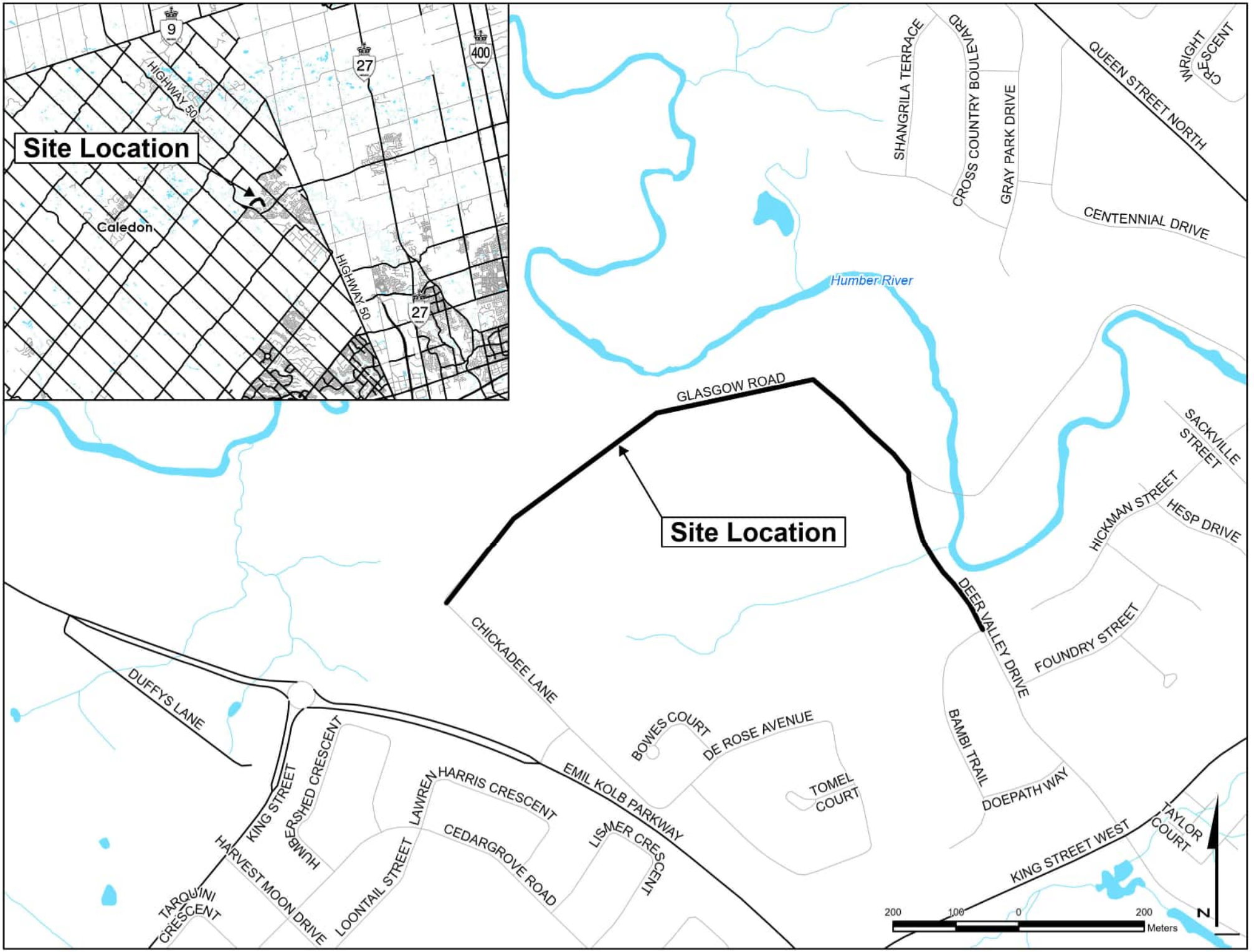
The Town of Caledon has retained the services of McIntosh Perry Consulting Engineers Ltd. (McIntosh Perry) to complete a Municipal Class B Environmental Assessment Study (Class EA) for the project that will include addressing the environmental concerns that the proposed road reconstruction will have on the surrounding natural heritage features. The Glasgow Road project was initiated as a Schedule A+ Municipal Class Environmental Assessment, however, has since been elevated to a Schedule "B" project in accordance with the Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011 & 2015), approved under the *Ontario Environmental Assessment Act.*

1.1 Purpose

This *Existing Environmental Conditions Report* has been prepared to provide an overview of the existing environmental conditions of the study area. Environmental information used in the production of this report has been assembled from existing background data for the general study area in addition to data generated from a field survey completed by McIntosh Perry.

1.2 Study Area

The study area is located within the Ministry of Environment Conservation and Parks (MECP) – Central Region, the Toronto Regional Conservation Authority area, the Halton - Peel District, the Ministry of Natural Resources and Forestry (MNRF) - Aurora District, and within the Ministry of Transportation (MTO) – Central Region.


Site Location
Caledon
9
27
400
HIGHWAY 50
HIGHWAY 50
27
Site Location
Humber River
GLASGOW ROAD
SHANGRILA TERRACE
CROSS COUNTRY BOULEVARD
GRAY PARK DRIVE
QUEEN STREET NORTH
WRIGHT CRESCENT
CENTENNIAL DRIVE
SACKVILLE STREET
HICKMAN STREET
HESP DRIVE
DEER VALLEY DRIVE
FOUNDRY STREET
CHICKADEE LANE
DUFFYS LANE
BOWES COURT
DE ROSE AVENUE
BAMBI TRAIL
TOMEL COURT
DOEPATH WAY
EMIL KOLB PARKWAY
KING STREET
HUMBERSHED CRESCENT
LAWREN HARRIS CRESCENT
CEDARGROVE ROAD
LISMER CRESCENT
HARVEST MOON DRIVE
LOONTAIL STREET
TARQUINI CRESCENT
KING STREET WEST
TAYLOR COURT
200
100
0
200
Meters
N

2.0 POLICY AND REGULATORY OVERVIEW

The following sections provide an overview of applicable policy and legislation relating to the proposed works.

2.1 Federal Context

The following federal legislation, regulations, and policy are applicable to the proposed project works.

2.1.1 Species at Risk Act, 2002

The *Species at Risk Act*, 2002 (SARA) is a federal Act that strives to "prevent wildlife species from being extirpated or becoming extinct, to provide for the recovery of wildlife species that are extirpated, endangered or threatened as a result of human activity, and to manage species of special concern to prevent them from becoming endangered or threatened." SAR that are classified as 'Endangered' or 'Threatened' are provided species and habitat protection if there is a critical habitat definition (SARA, 2002).

2.1.2 Migratory Birds Convention Act, 1994

The *Migratory Birds Convention Act*, 1994 (MBCA) prohibits the inadvertent harm, killing, disturbance or destruction (known as incidental take) of migratory birds, their nests, and eggs and provides protection for migratory birds and their nests wherever they occur in Canada.

2.2 Provincial Context

The following provincial legislation, regulations, and policy are applicable to the proposed project works.

2.2.1 Provincial Policy Statement, 2020

The *Provincial Policy Statement,* 2020 (PPS), establishes clear direction on the adoption of an ecosystem approach and the protection of resources that have been identified as significant. The Natural Heritage Reference Manual (NHRM, MNRF, 2010) and the Significant Wildlife Habitat Technical Guide (SWHTG, MNRF, 2000) provide guidance on identifying natural features and interpreting the Natural Heritage sections of the PPS.

2.2.2 Endangered Species Act, 2007

The *Endangered Species Act*, 2007 (ESA), affords protection to 'Threatened' and 'Endangered' SAR and their habitat. Due to the sensitivity of SAR habitat and the protection afforded to this habitat by the ESA, there are certain obligations that must be met in order to ensure the protection of SAR and their associated habitat. In addition, Section 9 of the ESA states that "*no person shall kill, harm, harass, capture or take a living member of a species that is listed on the Species at Risk in Ontario List as an extirpated, endangered or threatened species*".

2.2.3 Fish and Wildlife Conservation Act, 1997

The *Fish and Wildlife Conservation Act*, 1997 (FWCA), administered by the MNRF, governs the lawful hunting and trapping of fish and wildlife (mammals, birds, reptiles, and amphibians) to facilitate the conservation and protection of wildlife and their environment (FWCA, 1997).

2.2.4 Invasive Species Act, 2015

The *Invasive Species Act*, 2015 https://www.ontario.ca/laws/statute/s15022 is a provincial act which contains a comprehensive array of inspection powers, minister powers and other provisions that are intended to prevent invasive species from entering Ontario, to control the spread of invasive species in Ontario and to remove and eradicate the invasive species from Ontario. The regulations associated with this Act, define which species are considered "*prohibited invasive species*" and which species are considered "*restricted invasive species*" as well as prohibitions surrounding these species.

2.2.5 Weed Control Act, 1990

The *Weed Control Act*, 1990 https://www.ontario.ca/laws/statute/90w05 is a provincial act that specifies under Section 3 that *"every person in possession of land shall destroy all noxious weeds on it"."* The definition of "*noxious weed*" as per the act means a plant that is deemed to be a noxious weed under subsection 10 (2) or designated as a noxious weed under clause 24 (a) (i.e., under the Regulations). The act also specifies that "*For the purposes of section 3, every road authority within the meaning of the Public Transportation and Highway Improvement Act shall be deemed to be the person in possession of the land under its jurisdictio*n

2.2.6 Conservation Authorities Act, 1990

The *Conservation Authorities Act* (1990) provides for the organization and delivery of programs and services that further the conservation, restoration, development, and management of natural resources in watersheds within Ontario. The study area falls under the jurisdiction of the Toronto and Region Conservation Authority (TRCA). Through the *Conservation Authorities Act*, the TRCA has the responsibility to regulate activities in natural and hazardous areas (i.e., areas in and near rivers, streams, floodplains, wetlands, and slopes). The TRCA regulates Ontario Regulation 153/06, which prohibits or restricts development and site alterations near water and wetlands in order to protect from flooding, erosion, and other hazards. Lands that fall within 120 m of a wetland or watercourse requires that an EIS be completed to ensure that there are no negative impacts on these natural features. Two (2) unevaluated wetland features and one (1) regulatory floodplain identified by the TRCA, is present within the study area. There are also three (3) Provincially Significant Wetlands (PSW) identified within approximately 2 km of the study area.

2.3 Municipal Context

The following municipal legislation, regulations, and policy are applicable to the proposed project works.

2.3.1 Region of Peel Official Plan, 2022

Under The Region of Peel Official Plan (2022) The Greenlands System is identified that comprises natural heritage features. Some of these natural heritage features have been identified within and surrounding the study area as Natural Area Sites, including:

- PSW's and Other Wetlands
- Greenbelt Plan: Natural Heritage System.

2.3.2 Town of Caledon Official Plan, 2018

The Town of Caledon Official Plan (2018) identifies the significance of Natural Core Areas and Natural Corridors as well as significant woodlands, habitat for threatened and endangered species, wetlands, and Areas of Natural and Scientific Interest (ANSI). These areas are designated as Environmental Policy Areas and where development is proposed within 120 m require an Environmental Impact Assessment to be completed to assess impacts. Some of the features, have been identified within and surrounding the study area including:

- Greenbelt Plan: Natural Heritage System

3.0 METHODOLOGY

3.1 Background Data Collection

In order to acquire current information on habitat present within the study area, a comprehensive desktop review was completed. The desktop review of the available information sources listed below, provided data on the following: Vegetation characteristic of the area, Species at Risk (SAR) that have been found or have the potential to be found in the vicinity of the study area, local habitat conditions in the vicinity of the subject property, the location of any Natural Heritage features inclusive of Provincially Significant Wetlands (PSW), ANSI, Significant Woodlands in vicinity of the study area and any significant wildlife habitat and fish habitat.

In addition to the above, local agencies were consulted to confirm desktop study findings and to provide any additional information with respect to the presence of SAR, related habitats, or fish habitat within the study area as defined herein. The review was conducted using the sources provided below:

- Wildlife atlases for birds and herpetofauna, (Bird Studies Canada et al. 2006, Ontario Nature, 2019);
- Ontario Ministry of Natural Resources and Forestry (MNRF) Land Information Ontario (LIO) database;
- The Ontario Reptile and Amphibian Atlas (ORAA) (Ontario Nature, 2020);
- The Ontario Geological Survey Earth (OGS Earth) geoscience database (MNRF, 2020);
- MNRF Make a Map: Natural Heritage Areas mapping application;
- DFO Aquatic Species at Risk Mapping Tool;
- Fish Online;
- Region of Peel Official Plan (2022);
- Township of Caledon Official Plan (2018); and
- Correspondence with the Ministry of Environment Conservation and Parks (MECP) and the Toronto Region Conservation Authority (TRCA) (**Appendix B**).

3.2 Field Investigations

A field survey was conducted first on July 26th, 2022, by Jessica Abernethy, and Patrick Gilhooly of MP, and again on November 10, 2022, by J. Abernethy in order to gather information on existing conditions, inventories, and habitats present within the study area as detailed in **Table 1** below inclusive of site conditions. Fieldwork was conducted 120 metres (m) from, as well as including the proposed project footprint (**Figure 1**). A photographic record of the study area can be found in **Appendix A**.

Table 1: Summary of Field Investigation Activities				
Date	**Personnel Involved**	**Time of Survey**	**Weather Conditions**	**Purpose of Visit**
July 26, 2022	J. Abernethy and P. Gilhooly	7:15 a.m. to 11:00 a.m.	17 °C, sunny, calm	Existing terrestrial conditions within the study area (Glasgow Road)
November 10, 2022	J. Abernethy	2:00 p.m to 3:00 p.m	21 °C, partially cloudy, calm	Existing terrestrial conditions within the study area (Deer Valley Drive)

The field investigations included identification of the following, where applicable:

- Existing vegetation communities;
- Wetland areas;
- Reptiles, amphibians and associated habitat;
- SAR and their habitat;
- Resident or migrant bird and wildlife species;
- Wildlife corridors and Concentration areas;
- Critical habitat areas;
- Existing land uses surrounding the study area; and
- Fish Habitat and aquatic environment.

Relevant Protocols utilized to collect field data are provided in the following Sections **3.2.1 – 3.2.5.**

3.2.1 Vegetation Community Field Surveys

A botanical inventory of the study area was conducted, with field staff listing all observed terrestrial plant species. Vegetation communities were mapped consistent with protocols as defined in the MNRF Ecological Land Classification (ELC) guidelines for Southern Ontario (Lee, 2009).

3.2.2 Wildlife and Wildlife Habitat Field Survey Methods (Including Reptiles / Amphibians)

Wildlife habitat assessments were conducted simultaneously with vegetation surveys, based on procedures provided in the *Significant Wildlife Habitat Technical Guide* (SWHTG, MNRF 2000), the *Ecoregion Criteria Schedules* (MNRF, 2015), and the *Natural Heritage Reference Manual* (NHRM, MNRF 2010).

Wildlife species (e.g., mammals, birds and nests on structures, and herpetofauna) noted during the investigations were identified by signs, visual observations, and vocalizations. The extent of the study area used for wildlife species observations was within the existing Township right-of-way (ROW) and adjacent lands for 120 m unless a sensitive receptor greater than 120 m was likely to be adversely affected. For the purpose of this assessment, any species observed within and adjacent to the study area were identified and considered to be residents of, or visitors to, the study area.

3.2.3 Aquatic Environment Field Survey Methods

Aquatic field investigations were conducted, to an extent practical, to identify and map any aquatic habitat features and values present within or adjacent to, the study area.

3.2.4 Species At Risk Targeted Field Survey Protocols

Butternut Tree Survey

As part of the vegetation assessment prepared for this site, MP field staff surveyed the study area for Butternut trees, as the location is within the species general range.

Bat Leaf-on Survey

The subject area was assessed for presence of suitable bat habitat and snags consistent with bat survey protocols (MNRF, 2017) for treed habitats, inclusive of deciduous or mixed wooded ecosites, and trees at least 10cm diameter-at-breast height (DBH) for suitability as maternity roost sites.

3.2.5 Wetlands

An assessment of the presence of wetlands within or adjacent to the study area was conducted to a degree practical as a part of the field investigations utilizing accepted field protocols, and in order to verify desktop information and map any identified features.

4.0 EXISTING CONDITIONS

The following sections summarize the existing physical and biological conditions within the study area and surrounding lands.

4.1 Ecozone / Ecoregion Physiography

4.1.1 Mixed Wood Plains Ecozone

Ecozones are described as areas of the earths surface which are representative of large generalized ecological units and are characterized by interactive abiotic and biotic factors.

The study area is located within the Mixedwood Plains Ecozone which accounts for roughly over 8% of Ontario. This ecozone encompasses southern portions of Ontario and extends into the southern sections of Quebec bordering the St Lawrence lowlands. Lake Huron, Lake Erie, Lake Ontario, and the St Lawrence River bound the ecozone to the south and to the west.

4.1.2 Lake Simcoe-Rideau Ecoregion

Ecoregions are defined as parts of a province which are characterized by distinctive regional ecological factors including climatic, fauna, physiography, vegetation, soil, water, and land use.

The study area is located in the Lake Simcoe-Rideau Ecoregion (6E). This area extends from Lake Huron in the west to the Ottawa River in the east. It includes various shores on Lake Ontario and continues through to the Ontario portion of the St. Lawrence River Valley (Crins et al., 2009).

4.1.3 Ecoregion Physiography

The study area consists of three main geological deposits of Older Alluvium, Modern Alluvium, and Halton Till. These deposits are made up of sand and gravel including areas of brown loam to silt loam till as well as elevated terrace remnants. The bedrock underlying the Glasgow Road study area consists of shale, siltstone, dolostone, and limestone from the Georgian Bay formation of the Ordovician with thick drift (Ontario Geological Survey, 2011).

4.2 Terrestrial Ecosystems

4.2.1 Vegetation Communities and Flora

4.2.1.1 Ecoregion Vegetation

The Lake Simcoe-Rideau Ecoregion (6E) is dominated by croplands (57%), followed by pasture lands (44.4%), and abandoned fields (12.8%). Forested areas of the ecoregion are composed primarily of deciduous forest (16.0%) with some addition of coniferous and mixed forests. Forest stands within the ecoregion typically contain green ash (*Fraxinus pennsylvanica*), silver maple (*Acer saccharinum*), red maple (*Acer rubrum*), Eastern white cedar (*Thuja occidentalis*), yellow birch (*Betula alleghaniensis*), balsam fir (*Abies balsamea*), black ash (*Fraxinus nigra*), black spruce (*Picea mariana*), and tamarack (*Larix laricina*) (Crins et al., 2009).

4.2.1.2 Vegetation Survey

The vegetation survey for the project area was completed on July 26th, and November 10, 2022. **Table 2** lists the vegetation species identified during the 2022 field investigation along Glasgow Rd and Deer Valley Drive. Vegetation species found within the study area are representative of roadside corridors in southern Ontario, with some non-native species. One (1) species at risk vegetation species (i.e., Butternut) was documented by McIntosh Perry staff (**Figure 2**).

A botanical inventory of the study area was conducted, with field staff listing all observed terrestrial plant species. Vegetation communities were mapped consistent with protocols as defined in the MNRF Ecological Land Classification (ELC) guidelines for Southern Ontario (Lee, 2009). The following ecologically distinct areas were mapped including; Cattail Mineral Shallow Marsh Type (MASM1-1), Goldenrod Forb Meadow Type (MEFM1-1), Sumac Deciduous Shrub Thicket Type (THDM2-1), Dry - Fresh Manitoba Maple Deciduous Forest Type (FODM4-5), Fresh – Moist Willow Lowland Deciduous Forest Type (FODM7-3), Dry - Fresh Black Walnut Deciduous Woodland Type (WODM4-4), Fresh – Moist Lowland Deciduous Forest Ecosite- Manitoba Maple and Black Walnut (FODM7), Dry - Fresh Black Locust Deciduous Forest Type (FODM4-11), Dry - Fresh Coniferous Woodland Ecosite (WOCM1), Native Deciduous Regeneration Thicket Type (THDM4-1), and Dry – Fresh Sugar Maple – Hardwood Deciduous Forest Type (FODM5-9). All communities have been mapped, see **Figure 3** for vegetation mapping.

4.2.1.3 Invasive Species

The following species listed as '*restricted*' under the *Invasive Species Act, 2015* were observed within the study area during the 2022 field investigations:

- Phragmites (*Phragmites australis subsp. australis*).

The following species classified as '*noxious weeds*' under the *Weed Control Act*, 1990 were observed within the study area during the 2022 field investigations:

- bull thistle (*Cirsium vulgare*);
- coltsfoot (*Tussilago farfara*), and
- European Buckthorn (*Rhamnus cathartica*).

An additional species, garlic mustard (*Alliaria petiolata*) is listed under the Ontario Invasive Plant Council (OIPC, 2022) as an invasive species. Although no legal action is required for this species, it has been known to colonize quickly and outcompete native plants. As a result, this species is important to take into consideration during project works and implement a management plan to prevent its continued spread.

4.2.1.4 Endangered Species

The following species classified as "Endangered" under the Ontario *Endangered Species Act* (2007) were observed within the study area during the 2022 field investigations:

- Butternut (*Juglans cinerea*).

The individuals observed within the study area have been identified and mapped on **Figure 2.** Two butternut trees to be in fair/ poor health were observed to be within the potential impact area of the project works (6-8m from the roads edge). Additional butternut trees were observed further down the ravine feature (approximately 4 individuals) located outside the impact area. A Butternut Health assessment (BHA) was not completed as part of this project.

Table 2: Vegetation Identified within the Glasgow Road Study Area			
Tree Species			
Common Name	**Scientific Name**	**Common Name**	**Scientific Name**
American elm	*Ulmus americana*	Scots pine	*Pinus sylvestris*
American basswood	*Tilia americana*	Trembling aspen	*Populus tremuloides*
Black walnut	*Juglans nigra*	Tamarack	*Larix laricina*
Black cherry	*Prunus serotina*	White spruce	*Picea glauca*
Butternut ***	***Juglans cinerea***	White ash	*Fraxinus americana*
Eastern white cedar	*Thuja occidentalis*	White birch	*Betula papyrifera*
Honey locust	*Gleditsia triacanthos*	Willow *spp.*	*Salix*
Large-toothed aspen	*Populus grandidentata*	White popular	*Populus alba*
Manitoba maple	*Acer negundo*	White pine	*Pinus strobus*
Sugar maple	*Acer saccharum*		
Shrub Species			
Common Name	**Scientific Name**	**Common Name**	**Scientific Name**
European buckthorn*	*Rhamnus cathartica*	Red Osier dogwood	*Cornus sericea*
Blackberry	*Rubus ursinus*	Riverbank grape	*Vitis riparia*
Hawthorn sp.	*Crataegus sp.*	Staghorn sumac	*Rhus typhina*
Honeysuckle *sp.*	*Caprifoliaceae sp.*	Virginia creeper	*Parthenocissus quinquefolia*
Herb Species			
Common Name	**Scientific Name**	**Common Name**	**Scientific Name**
Asparagus	*Asparagus officinalis*	Garlic mustard	*Alliaria petiolata*
Bull thistle*	*Cirsium vulgare*	Goldenrod sp.	*Solidago sp.*
Blackberry	*Rubus ursinus*	Orchardgrass	*Dactylis glomerata*
Blue-bead lily	*Clintonia borealis*	Phragmites**	*Phragmites australis subsp. australis*
Cattail	*Typha latifolia*	Queen Anne's lace	*Daucus carota*
Coltsfoot*	*Tussilago farfara*	Smooth brome grass	*Bromus inermis*
Common burdock	*Arctium minus*	Teasel	*Dipsacus sp.*
Common milkweed	*Asclepias syriaca*	Woodland sunflower	*Helianthus divaricatus*
Common mullein	*Verbascum thapsus*	Woodland horsetail	*Equisetum sylvaticum*
Common soapwort	*Saponaria officinalis*	Zigzag goldenrod	*Solidago flexicaulis*

False Salomon's-seal	*Maianthemum racemosum*		

*Listed under the *Weed Control Act,* 1990

**Listed as Restricted under the *Invasive Species Act,* 2015

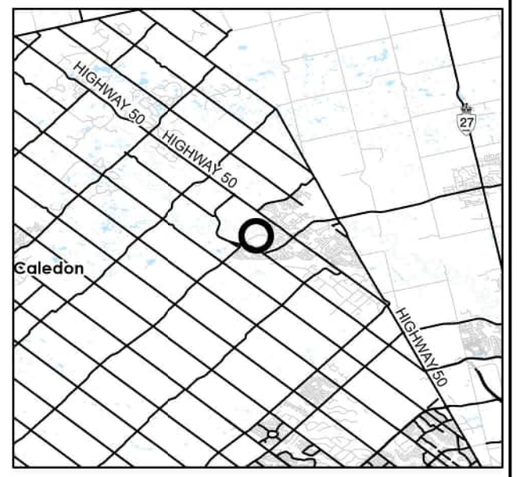
*** Listed as an endangered vascular plant under the Ontario *Endangered Species Act*, 2007

4.2.2 Wetland Habitat

The Glasgow Road study area falls within the boundaries of two (2) unevaluated wetlands identified and mapped (**Figure 2**). The first unevaluated wetland is classified as a marsh and is located south of Glasgow Road and encircles Edelweiss Park. This wetland falls in proximity (within 10 m) of Deer Valley Drive. The second unevaluated wetland is classified as a swamp wetland is located north of Glasgow Road and adjacent to the north side of the Humber River. Three PSW's fall within 2 km of the study area but are not located within the project works limits. They are the Bolton Wetland Complex (swamp/ marsh) located approximately 1 km west of Glasgow Rd, the West Humber River Headwater Wetland Complex (marsh) located 1.2 km southwest of Deer Valley Drive, and the Castlederg Wetland Complex (marsh) located approximately 1.75 km northeast from Glasgow Rd.

LEGEND

- Snag Trees
- ButternutTrees
- Right-of-way
- Glasgow Road Study Area
- Blanding's Turtle (NHIC Grid)
- Wetlands (Not Evaluated)
- Aquatic Resource Area
- Aquatic Resource Area
- Regulated Area 2021 (large scale)



REFERENCE

GIS data provided by the Ontario Ministry of Northern Development, Mines, Natural Resources and Forestry, 2022.

100 50 0 100 Meters

Scale 1:3,500

CLIENT: TOWN OF CALEDON

PROJECT: EXISTING ENVIRONMENTAL CONDITIONS REPORT

TITLE: NATURAL HERITAGE FEATURES

McINTOSH PERRY
115 Walgreen Road, RR3, Carp, ON K0A1L0
Tel: 613-836-2184 Fax: 613-836-3742
www.mcintoshperry.com

PROJECT NO:	CCO-22-3677
Date	Dec., 07, 2022
GIS	AH
Checked By	PG

FIGURE: 2

C:\Users\M.Grunstra\McIntosh Perry\GIS - Documents\Projects\2022\CCO\CCO-22-3677 Caledon EA\aprx\Environmental\Opportunities and Constraints\CCO-22-3677_ConstaintsandOpportunities.aprx

4.2.3 Wildlife

4.2.3.1 Ecoregion Wildlife

Characteristic wildlife of the Lake Simcoe Rideau Ecoregion area includes white-tailed deer (*Odocoileus virginianus*), northern raccoon (*Procyon lotor)*, striped skunk (*Mephitis mepthitis)*, woodchuck (*Marmota monax*), red-spotted newt (*Notophthalmus viridescens)*, Snapping Turtle (*Chelydra serpentina)*, Eastern garter snake (*Thamnophis sirtalis sirtalis*), and common watersnake (*Nerodia sipedon*). Representative bird species include field sparrow (*Spizella pusilla)*, Grasshopper Sparrow (*Ammodramus savnnarum)*, and Eastern Meadowlark (*Sturnella magna)* (Crins et al., 2009).

4.2.3.2 Wildlife Survey

Table 3 lists the wildlife species observed in the study area during the 2022 field investigation. Species identified consisted primarily of birds, with a total of 12 species observed within the study area, including one (1) bird SAR: Barn Swallow (*Hirundo rustica*). Based on the habitat observed within the study area, the timing of observation, and details of the observation, the individual was likely a resident or visiting bird.

An assessment of significant wildlife habitat to an extent possible due to the existing timing window was carried out based on a review of available resources inclusive of the *Significant Wildlife Habitat Technical Guide* (SWHTG, MNRF 2000), the *Ecoregion Criteria Schedules* (MNRF 2015), and the *Natural Heritage Reference Manual* (NHRM, MNRF 2010). Significant wildlife habitat is described under four main categories provided below.

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

A Blanding's Turtle (*Emydoidea blandingii*) grid was identified outside 120 m from the project area boundaries but within 2 kms of the study area. No Blanding's turtles were identified during the field investigation. It is likely this species is present within the study area due to the proximity of the Humber River and may cross Deer Valley Drive and Glasgow Road during migration to the surrounding wetlands or in search of nesting grounds.

Two Great Blue Heron Nesting Site/Colonies (ANSI) are located in proximity to the study area approximately 900 m to the west within the Bolton Wetland Complex.

Table 3: Wildlife Observed at the Glasgow Road Study Area			
Birds			
Common Name	**Scientific Name**	**Common Name**	**Scientific Name**
American Crow	*Corvus brachyrhynchos*	Eastern Kingbird	*Tyrannus tyrannus*
American Goldfinch	*Spinus tristis*	Gray Catbird	*Dumetella carolinensis*
American Robin	*Turdus migratorius*	Northern Cardinal	*Cardinalis cardinalis*
Barn Swallow*	*Hirundo rustica*	Northern Flicker	*Colaptes auratus*
Blue Jay	*Cyanocitta cristata*	Red-winged Blackbird	*Agelaius phoeniceus*
Common Yellowthroat	*Geothlypis trichas*	Song Sparrow	*Melospiza melodia*
Wildlife			
American Toad	*Anaxyrus americanus*	Red Squirrel	*Tamiasciurus hudsonicus*

*Identified as a Species at Risk (SARA, 2002)

4.2.4 Fisheries and Aquatic Ecosystems

The watercourses associated with the Glasgow Road study area include the Humber River and five (5) unnamed tributaries. Glasgow Road falls within 50 m whereas Deer Valley Drive falls within 20 m of the Humber River. Land Information Ontario (LIO) and Aquatic Resource Area (ARA) mapping has identified the Humber River as cold-water and its tributaries as warm-water watercourses and are known to contain fish species listed in **Table 4**.

The Humber River within the study area does not occur within the identified project works limits. However, the proximity of this watercourse to Deer Valley Drive, as well as presence of the work limits occurring within floodplain regulatory area warrants consideration for the protection of this feature. Watercourse observations within the study area were restricted to terrestrial observations, due to the presence of abundant available data on this watercourse. Therefore, no in-water aquatic investigations such as electrofishing were conducted at this site. The aquatic environment surrounding the Humber River was observed to be comprised of floodplain, with abundant aquatic and riparian vegetation surrounding the channel banks. The vegetation included golden rod, cattails, Joe-Pye weed, staghorn sumac, and riverbank grape. Riparian trees were primarily willow and Manitoba Maples. The channel morphology was characterised as a wide flat and riffle fast-moving watercourse, with abundant gravels, cobbles and boulders. The banks of the Humber River closest to Deer Valley Drive appear to have been stabilized with rip rap reinforcements.

Table 4: Existing Fish Conditions		
Waterbody	**Thermal Regime**	**Fish Species**
Humber River	Cold	Species observed: Not fished Fish species know to occur in river: Alewife, Banded Killifish, Black Crappie, Blackchin Shiner, Blacknose Dace, Blackside Darter, Bluegill, Bluntnose Minnow, Bowfin, Brassy Minnow, Brook Stickleback, Brown Bullhead, Brown Trout, Central Stoneroller, Chinook Salmon, Common Carp, Common Shiner, Creek Chub, Emerald Shiner, Fantail Darter, Fathead Minnow, Freshwater Drum, Gizzard Shad, Golden Shiner, Goldfish, Green Sunfish, Hornyhead Chub, Iowa Darter, Johnny Darter, Largemouth Bass, Logperch, Longnose Dace, Longnose Gar, Mimic Shiner, Mottled Sculpin, Northern Hog Sucker, Northern Pike, Northern Redbelly Dace, Pumpkinseed, Rainbow Darter, Rainbow Smelt, Rainbow Trout, Redfin Shiner, River Chub, Rock Bass, Rosyface Shiner, Round Goby, Sand Shiner, Sea Lamprey, Smallmouth Bass, Spotfin Shiner, Spottail Shiner, Stonecat, Threespine Stickleback, Walleye, White Bass, White Crappie, White Perch, White Sucker, Yellow Bullhead, and Yellow Perch.
Five (5) Unnamed Watercourses – Tributary to Humber River	Warm	Species observed: Not fished Fish species know to occur in tributaries: Blacknose Dace, Bluntnose Minnow, Brook Trout, Brown Trout, Common Shiner, Creek Chub, Fantail Darter, Fathead Minnow, Longnose Dace, Northern Hog Sucker, Rainbow Darter, Rock Bass, Stonecat, and White Sucker.

4.3 Species at Risk

Ontario wildlife atlases were reviewed for species at risk (SAR) Element Occurrence (EO) records within 5 km of the study area. The Ontario Reptile and Amphibian Atlas (Ontario Nature, 2021) identified records of:

- Eastern Ribbonsnake (*Thamnophis sauritus*);
- Eastern Milksnake (*Lampropeltis Triangulum*);
- Blanding's Turtle;
- Midland Painted Turtle (*Chrysemys picta marginata*); and
- Snapping Turtle *(Chelydra serpentina)*.

One (1) Blanding's Turtle occurrence record (1 km grid) is present approximately 250 m south of the subject property (square ID: 17PJ0058; Atlas Nad83 ID; **Figure 2**).

The Ontario Breeding Bird Atlas (Bird Studies Canada et al., 2006) identified 13 SAR birds known to occur within 10 km of the study area:

- Bank Swallow (*Riparia riparia)*;
- Barn Swallow (*Hirundo rustica)*;
- Bobolink (*Dolichonyx oryzivorus*);
- Canada Warbler (*Cardellina canadensis*);
- Chimney Swift (*Chaetura pelagica*);
- Common Nighthawk (*Chordeiles minor*);
- Eastern Meadowlark (*Sturnella magna*);
- Eastern Whip-poor-will (*Antrostomus vociferus*);
- Eastern Wood-Pewee (*Contopus virens*);
- Grasshopper Sparrow (*Ammodramus savannarum*); and
- Golden-winged Warbler (*Vermivora chrysoptera*);
- Red-headed Woodpecker (*Melanerpes erythrocephalus*); and
- Wood Thrush (*Hylocichla mustelina)*.

MNRF Make a Map: Natural Heritage Areas (Natural Heritage Information Centre) mapping application identified the following SAR within 5 km of the study area:

- American Bumble Bee (*Bombus pensylvanicus*);
- Barn Swallow;
- Black Ash (*Fraxinus nigra*);
- Blanding's Turtle;
- Bobolink;
- Butternut;
- Canada Warbler;
- Eastern Meadowlark;
- Eastern Milksnake;
- Eastern Wood-pewee;
- Golden-winged Warbler;
- Loggerhead Shrike (*Lanius ludovicianus*);
- Louisiana Waterthrush (*Parkesia motacilla*),
- Midland Painted Turtle;
- Red-headed Woodpecker;
- Redside Dace (*Clinostomus elongatus*);
- Snapping Turtle; and
- Wood Thrush.

The study area is in the general range of the following SAR species:

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

Background research identified the potential for various SAR to be present within the study area. **Table 5** outlines potential SAR to exist within the study area based on habitat suitability and the possibility of using the study area as a migratory corridor.

Table 5: Potential SAR within the Vicinity of Glasgow Road Study Area					
Common Name	**Scientific Name**	**Provincial Status**	**Provincial Habitat Protection**	**Federal Status**	**Suitable Habitat Present within Study Area**
Fish					
Redside Dace [1]	*Clinostomus elongatus*	Endangered	Yes	Endangered	No.
Silver Lamprey [1, 6]	*Ichthyomyzon unicuspis*	Special Concern	No	Special Concern	No.
Birds					
Bank Swallow [1, 2, 5]	*Riparia riparia*	Threatened	Yes	Threatened	No. Suitable habitat is not present within the study area.
Barn Swallow [1, 2, 5]	*Hirundo rustica*	Threatened	Yes	Threatened	Yes. Potential suitable habitat is found in meadows/agricultural fields adjacent to study area. A single individual was observed flying over the study area, however, based on the date and lack of nests within the study area, suitable nesting habitat is not present.
Bobolink [1, 2, 5]	*Dolichonyx oryzivorus*	Threatened	Yes	Threatened	Yes, Potential suitable habitat is found in meadows/agricultural fields adjacent to study area.
Canada Warbler [1, 2, 5]	*Cardellina canadensis*	Special Concern	Yes	Threatened (under consideration)	Yes, suitable habitat is found in a variety of forest types, such as wet, mixed deciduous-coniferous forest with a well-developed shrub layer, some of which may be found within the study area.
Chimney Swift [2]	*Chaetura pelagica*	Threatened	Yes	Threatened	No. Suitable habitat is not present within the study area.

Table 5: Potential SAR within the Vicinity of Glasgow Road Study Area					
Common Name	**Scientific Name**	**Provincial Status**	**Provincial Habitat Protection**	**Federal Status**	**Suitable Habitat Present within Study Area**
Common Nighthawk [2]	*Chordeiles minor*	Special Concern	No	Threatened	Yes. Potential suitable habitat is present in surrounding areas adjacent to the study area (e.g., pastures, grasslands, river banks).
Eastern Meadowlark [2, 5]	*Sturnella magna*	Threatened	Yes	Threatened	Yes, Potential suitable habitat is found in meadows/agricultural fields adjacent to study area.
Eastern Wood-Pewee [1,2]	*Contopus virens*	Special Concern	No	Special Concern	Yes, found in the mid-canopy layer of forest clearings and edges of deciduous and mixed forests, some of this habitat occurs within the study area.
Eastern Whip-poor-will [2]	*Antrostomus vociferus*	Threatened	Yes	Threatened	No. Suitable habitat not present
Golden-winged Warbler [2, 5]	*Vermivora chrysoptera*	Special Concern	No	Threatened	No. Suitable habitat not present
Grasshopper sparrow [2, 5]	*Ammodramus savannarum*	Special Concern	No	Special Concern	Yes, potential suitable habitat is found in meadows/agricultural fields adjacent to study area.
Louisiana Waterthrush[1, 2]	*Parkesia motacilla*	Threatened	Yes	Threatened	No. Suitable habitat not present
Loggerhead Shrike [1]	*Lanius ludovicianus*	Endangered	Yes	Endangered	Yes, potential suitable habitat is found in meadows/agricultural fields adjacent to study area.
Red-headed Woodpecker [1, 2]	*Melanerpes erythrocephalus*	Endangered	Yes	Endangered	Yes. Suitable habitat is present in surrounding woodlands, grasslands, forest edges, pastures, roadsides, and urban parks adjacent to the study area.

Table 5: Potential SAR within the Vicinity of Glasgow Road Study Area					
Common Name	**Scientific Name**	**Provincial Status**	**Provincial Habitat Protection**	**Federal Status**	**Suitable Habitat Present within Study Area**
Wood Thrush [1, 2, 5]	*Hylocichla mustelina*	Special Concern	No	No Status	Yes. Suitable habitat is present in surrounding woodlands adjacent to the study area.
Insects					
American Bumble Bee[1]	*Bombus pensylvanicus*	No Listing	No	Special Concern	Yes. Suitable habitat is potentially present in fields and ditches with abundant wildflowers within the study area.
Monarch [4, 5]	*Danaus plexippus*	Special Concern	No	Special Concern	Yes. Suitable habitat is present within the study area in open habitats, where milkweed was identified.
Mammals					
Eastern Small-footed Myotis [5]	*Myotis leibii*	Endangered	Yes	Special Concern	Potential in adjacent forests.
Little Brown Myotis[5]	*Myotis lucifugus*	Endangered	Yes	Endangered	Potential in adjacent forests.
Northern Myotis[5]	*Myotis septentrionalis*	Endangered	Yes	Endangered	Potential in adjacent forests.
Tri-colored Bat[5]	*Perimyotis subflavus*	Endangered	Yes	Endangered	Potential in adjacent forests.
Reptiles and Amphibians					
Blanding's Turtle [1, 3, 5]	*Emydoidea blandingii*	Threatened	Yes	Endangered	Yes, species is known to occur in the general vicinity of the study area. No individuals observed during field investigations.
Eastern Milksnake [1, 3]	*Lampropeltis triangulum*	No Status	No	Special Concern	Yes, may be found throughout the study area as they can live in a variety of habitats.
Eastern Ribbonsnake[1, 3]	*Thamnophis sauritus*	Special concern	No	Special Concern	Yes, may be found in wetland habitats within the study area.

Table 5: Potential SAR within the Vicinity of Glasgow Road Study Area					
Common Name	**Scientific Name**	**Provincial Status**	**Provincial Habitat Protection**	**Federal Status**	**Suitable Habitat Present within Study Area**
Midland Painted Turtle [1, 3]	*Chrysemys picta marginata*	No Status	No	Special Concern	No, lack of adequate gravels and sand bars for nesting are present within the study area. May use study area as migratory corridor.
Snapping Turtle [1, 3, 5]	*Chelydra serpentina*	Special Concern	No	Special Concern	No, lack of adequate gravels and sand bars for nesting are present within the study area. May use study area as migratory corridor.
Plants					
Black Ash [1, 3]	*Fraxinus nigra*	Endangered	Yes	No Status	Yes, species is known to occur in the general vicinity of the study area. No individuals observed during field investigations.
Butternut [1, 5]	*Juglans cinerea*	Endangered	Yes	Endangered	Yes, species is known to occur in the general vicinity of the study area. Individuals were found within the study area.

This table was assembled from various sources of background information. The following information sources were consulted to compile background information.

1. Land Information Ontario – NHIC database (NHIC) (MNRF, 2020)
2. Ontario Breeding Bird Atlas (OBBA) (Bird Studies Canada, 2006)
3. Ontario Reptile and Amphibian Atlas (ORAA) (Ontario Nature, 2020)
4. Ontario Butterfly Atlas (OBA) (Toronto Entomologists' Association, 2020)
5. Within Species General Range (GR)
6. Department of Fisheries and Oceans (DFO) Aquatic Species at Risk Mapping Tool

4.3.1 Habitat for Species at Risk

SAR Birds

The Barn Swallow is listed as 'Threatened' under the *Endangered Species Act* (ESA, 2007) and is therefore afforded Habitat protection. An individual Barn Swallow was observed foraging within the meadow area adjacent to Edelweiss Park. No suitable nesting structures for this species were observed within the study area. Therefore, the study area likely only supports contributing habitat for this species.

The Canada Warbler is listed as 'Special Concern' under the ESA (2007) and is not afforded habitat protection. Suitable habitat for this species may be found within a variety of forest types, such as wet, mixed deciduous-coniferous forest with a well-developed shrub layer, some of which may be found within the study area. No individuals however were observed in the study area.

The Common Nighthawk is listed as 'Special Concern' under the ESA (2007) and is therefore not afforded habitat protection. This species prefers to nest on exposed gravels and bare earth, most of which do not exist within the zone of impact for project works. Potential suitable habitat is present in surrounding habitats adjacent to the study area (e.g., pastures, grasslands, river banks).

The Eastern Wood-pewee is listed as 'Special Concern' under the ESA and *Species At Risk Act* (SARA). The habitat for this species is not afforded protection under the ESA or SARA. However, individuals of this species, their eggs, nest and fledglings are protected under the *Migratory Birds Convention Act* (MBCA) (1994). The Eastern Wood-pewee is a habitat generalist which will utilize a variety of habitats for nesting and foraging, however it prefers edge habitat near water. The study area contains such habitats within the forest (FOD) communities adjacent to the Humber River.

The Eastern Meadowlark is listed as 'Threatened' under the ESA and is therefore afforded habitat protection. Numerous habitats exist within the study area that may be suitable for Eastern Meadowlarks, such as the meadows occurring in proximity to Deer Valley Drive and the western most section of Glasgow Road. These habitats may also be suitable for additional grassland bird species such as the Bobolink, Grasshopper Sparrow and Loggerhead Shrike that may occur within the study area. The Bobolink is listed as 'Threatened' under the ESA (2007) and is afforded habitat protection. The Grasshopper Sparrow is listed as 'Special Concern' under the ESA (2007) and is therefore not afforded habitat protection. The Loggerhead Shrike is listed as 'Endangered' under the ESA (2007) and is afforded habitat protection. This species has specialized habitat preferences including open meadows with low shrub cover including hawthorn and buckthorn species. This species may have potential suitable habitat within in regeneration area as well as meadows/agricultural fields adjacent to study area. None of the above species were observed during field surveys.

Red-headed Woodpecker is listed as 'Endangered' on the ESA (2007) and is afforded habitat protection. Suitable habitat is present in surrounding woodlands, grasslands, forest edges, pastures, roadsides, and urban parks adjacent to the study area. Snag trees showing woodpecker evidence were identified within the study area.

The Wood Thrush is listed as 'Special Concern' under the ESA (2007) and is not afforded habitat protection. This species prefers mature deciduous and mixed forest communities with well developed undergrowth and tall trees. Due to the presence of multiple forest communities within the study area fitting this description, this species may be present within the forest (FOD) communities.

SAR Insects

The American Bumble Bee is not listed under the ESA (2007) and is therefore not afforded habitat protection. As a habitat generalist, this species may be encountered within the study area due to the diversity of habitats present that may be able to support this individual. Found in habitats such as mixed woodlands, and farmlands with abundant wildflowers all of which occur within the study area. No species observations were made.

Monarchs may be encountered throughout the study area along the Glasgow Road and Deer Valley Drive ROW in association with milkweed species which serve as host plants for this species. Monarchs are listed as 'Special Concern' under the *Endangered Species Act* (ESA) (2007) and the *Species at Risk Act* (SARA) (2002) and do not receive habitat protection. The host species Milkweed has been observed within the study area, and therefore provides habitat for all life stages of the species.

SAR Mammals

The potential to encounter SAR Bats exists within the study area, as surrounding forests may provide adequate habitats. Suitable snags for roosting were observed in proximity to Glasgow Road (see **Figure 2**), but no snags adequate for supporting maternity roosts were observed. No visible features suitable as hibernacula sites appear to be associated with the study area limits.

Reptiles and Amphibians

Migratory habitat for Blanding's Turtle, Midland painted turtle, and Common Snapping Turtle is available within the study area within the watercourse features. The Midland Painted Turtle is listed as 'No Status', and the Common Snapping Turtle is listed as 'Special Concern' under the ESA (2007) and do not receive habitat protection under the ESA but do receive protection under the *Fish and Wildlife Conservation Act* (FWCA). The Blanding's Turtle is listed as 'Threatened' under the ESA and SARA and receives habitat protection. Based on the *General Habitat Description for the Blanding's Turtle (Emydoidea blandingii)* by MNRF (2013a), Category 2 Habitat for Blanding's Turtle is available in any connected wetland and waterbody complex extending up to 2 km from the Blanding's Turtle occurrences as well as 30 m around these suitable wetlands/waterbodies. Category 3 Blanding's Turtle Habitat is any area from 30 m to 250 m around Category 2 Habitat. These habitats are present within study area (**Figure 3**), as a Blanding's turtle occurrence square (ORAA, 2020) is located approximately 200 m south of the Humber River, making it likely this species could be encountered within the study area. The majority of habitat within the study area provides the function of a migration corridor to more suitable habitat. However, gravel shoulders adjacent to Edelweiss Park at the corner of Glasgow Road and Deer Valley may provide suitable nesting conditions for these species of turtles, given the proximity of the Humber River.

The Eastern Milksnake may be present within the study area for foraging, breeding, and/or overwintering. This species is considered a habitat generalist and may utilize a variety of habitats within the study area. This species

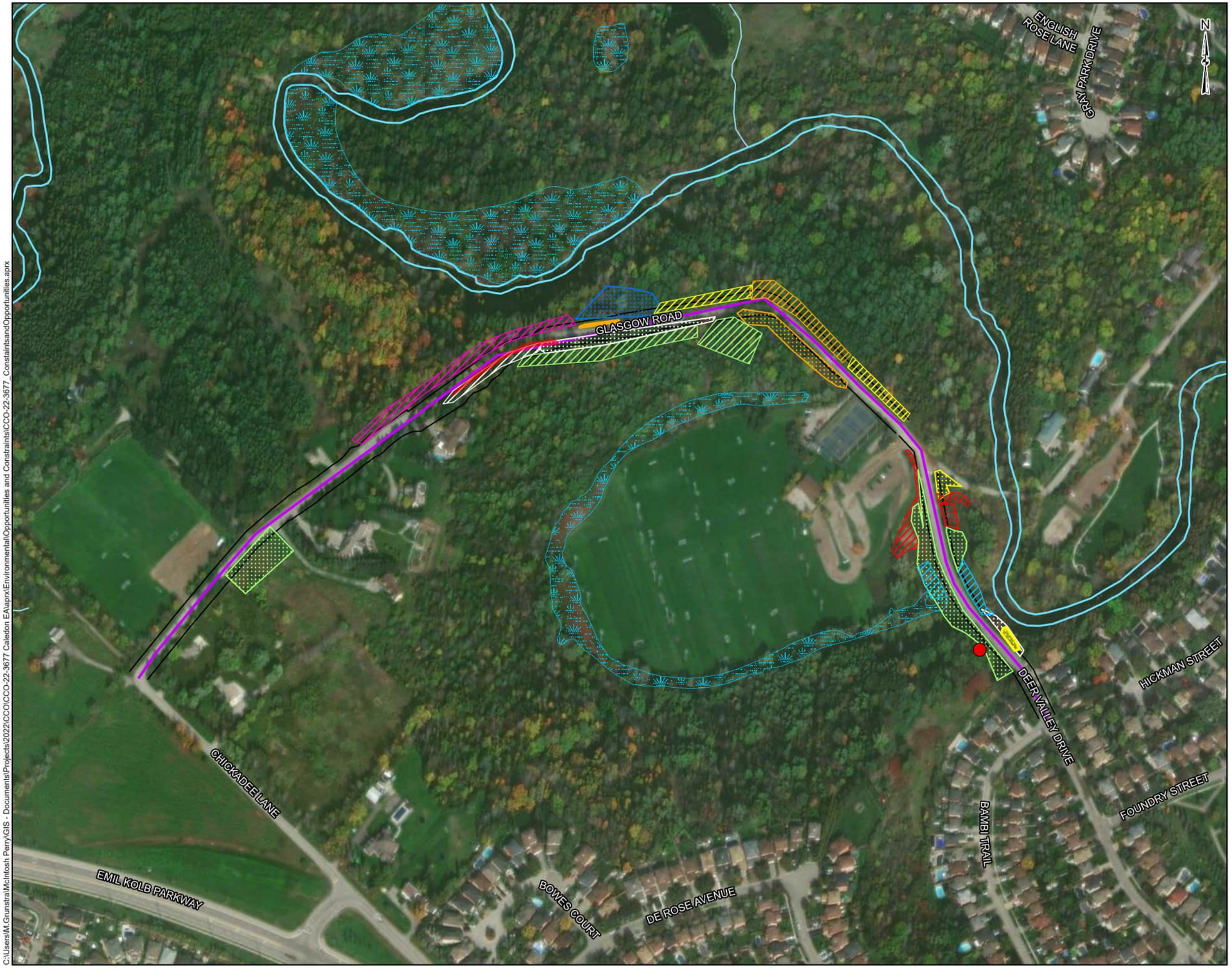
is listed as 'Special Concern' under the SARA and does not receive habitat protection. No individuals of this species were observed during the field investigations.

The Eastern Ribbonsnake is listed as 'Special Concern' under the ESA (2007) and is therefore not afforded habitat protection. The species may be encountered within the study area, as this species prefers wet meadows and wetlands, some of which may be identified within the study area.

SAR Plants

The Black Ash is listed as 'Endangered' under the ESA (2007) and is therefore afforded habitat protections. A temporary suspension on the protection of this species exists for two (2) years after it's addition to the ESA (2007). This species is primarily found in swamps, floodplains and fens. No individuals of this species were observed during the 2022 field investigations.

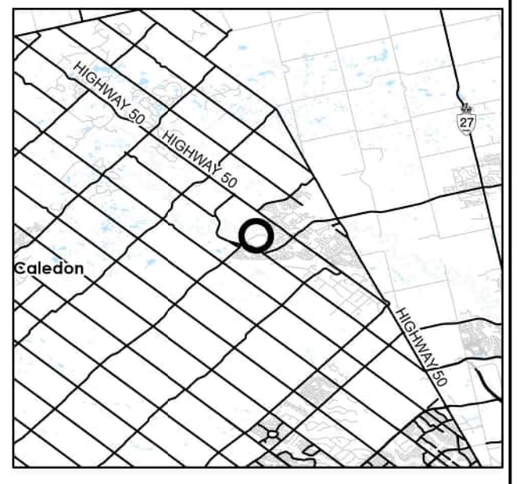
The Butternut is listed as 'Endangered' under the ESA (2007) and SARA (2002). Habitat for this species and individuals of this species are afforded protection. Habitat is available within the study area due to the wide range of habitat preferences for Butternuts. Butternuts are shade intolerant and prefer open areas but often become crowded out by other pioneer species (i.e. regenerating areas). Two Butternut trees were observed within the study area, as well as multiple other individuals observed beyond the project footprint.



LEGEND

Invasive Species
- Coltsfoot
- Garlic Mustard
- Phragmites
- European Buckthorn

ELC Communities
- Cattail Mineral Shallow Marsh Type (MASM1-1)
- Dry - Fresh Black Locust Deciduous Forest Type (FODM4-11)
- Dry - Fresh Black Walnut Deciduous Woodland Type (WODM4-4)
- Dry - Fresh Coniferous Woodland Ecosite (WOCM1)
- Dry - Fresh Manitoba Maple Deciduous Forest Type (FODM4-5)
- Dry – Fresh Sugar Maple – Hardwood Deciduous Forest Type (FODM5-9)
- Dry – Fresh Sugar Maple – Hardwood Deciduous Forest Type(FODM5-9)
- Fresh - Moist Manitoba Maple Lowland Deciduous Forest Type (FODM7-7)
- Fresh – Moist Lowland Deciduous Forest Ecosite- Manitoba Maple and Black Walnut (FODM7)
- Fresh – Moist Willow Lowland Deciduous Forest Type (FODM7-3)
- Goldenrod Forb Meadow Type (MEFM1-1)
- Native Deciduous Regeneration Thicket Type (THDM4-1)
- Sumac Deciduous Shrub Thicket Type (THDM2-1)
- Right-of-way
- Glasgow Road Study Area
- Wetlands (Not Evaluated)
- Aquatic Resource Area
- Aquatic Resource Area



REFERENCE

GIS data provided by the Ontario Ministry of Northern Development, Mines, Natural Resources and Forestry, 2022.

100 50 0 100 Meters
Scale 1:3,500

CLIENT: TOWN OF CALEDON

PROJECT: EXISTING ENVIRONMENTAL CONDITIONS REPORT

TITLE: CONSTRAINTS AND OPPORTUNITIES

McINTOSH PERRY
115 Walgreen Road, RR3, Carp, ON K0A1L0
Tel: 613-836-2184 Fax: 613-836-3742
www.mcintoshperry.com

PROJECT NO: CCO-22-3677		FIGURE: 3
Date	Dec., 07, 2022	
GIS	MG	
Checked By	JA	

C:\Users\M.Grunstra\McIntosh Perry\GIS - Documents\Projects\2022\CCO\CCO-22-3677 Caledon EA\aprx\Environmental\Opportunities and Constraints\CCO-22-3677_ConstaintsandOpportunities.aprx

4.4 Groundwater

Forty-five (45) MECP wells, were identified within 500 m of the study area. The wells were constructed between 1954 and 2018 for a variety of purposes including domestic, monitoring, and municipal use (MECP, 2019).

4.5 Designated Areas

The Glasgow Road study area falls within the boundaries (i.e., 2 km), but are outside of the study area, of the following:

- Provincially Significant Wetlands (PSW):
    - Castlederg Wetland Complex;
    - Bolton Wetland Complex; and
    - West Humber River Headwater Wetland Complex.

No other ANSI or PSW features occur within the Glasgow study area (i.e., 120 m) that may be affected by works. A Great Blue Heron Nesting Site/Colony (ANSI) is located in proximity to the study area approximately 900 m to the west within the Bolton Wetland Complex.

The study area is located within the Toronto Region Conservation Authority regulated area, which includes the following regulated areas:

- Meander Belt;
- Flood Hazard (Engineered);
- Wetlands (Area of Interference);
- Regulated Area 2020; and
- TRCA Unevaluated Wetlands.

The Study area was identified to be a part of the TRCA's Bolton Resource Management Tract. A study of this area was conducted in 2008 the *Bolton Resource Management Tract Study Area - Terrestrial and Biological Assessment* (TRCA, 2008).

5.0 CONCLUSION

This *Existing Environmental Conditions Report* has been prepared to provide an overview of the existing environmental conditions of the study area on behalf of the Town of Caledon. The segments of road proposed to be reconstructed and widened at Glasgow Rd from Chickadee Lane to Deer Valley Drive, as well as Deer Valley Drive from Glasgow Rd to Bambi Trail were assessed and found to contain the following natural features:

- Habitat for resident or migrant bird and wildlife species;
- SAR and SAR Habitat;
- Wetlands;
- ANSI, and PSW features;
- Reptiles, amphibians and associated habitat;

- Wildlife corridors and Concentration areas, and fish habitat.

The proposed project works have not yet been confirmed and therefore an impact assessment and mitigation measures will be completed, following design details. Once the project details have been determined an accurate assessment of potential impacts and effects will be evaluated and assessed.

6.0 REFERENCES

Bird Studies Canada, 2006. Atlas of the Breeding Birds of Ontario. http://www.birdsontario.org/atlas/index.jsp. Accessed August 2, 2022.

Credit Valley Conservation (CVC). 2021. *Regulation Mapping.* Interactive mapping tool. https://cvc.ca/regulation-mapping/. Accessed September 2, 2022.

Crins, W.J., P.A. Gray, P.W.C. Uhlig, and M.C. Wester. 2009. *The Ecosystems of Ontario, Part 1: Ecozones and Ecoregions*. Inventory, Monitoring and Assessment Section. Science and Information Branch. Ontario Ministry of Natural Resources. Ontario, Canada: Queen's Printer for Ontario. 87p.

Endangered Species Act. 2007. S.O. 2007, c. 6. Current version June 30, 2008.

Environmental Assessment Act. 1990. R.S.O. 1990, c. E.18. Current version October 25, 2010.

Fish and Wildlife Conservation Act. 1997. S.O. 1997, c. 41. Current version of March 22, 2017.

Government of Canada. 2017. *Species at Risk Public Registry*. Government of Canada.

Government of Canada, Fisheries and Oceans Canada. 2018. Aquatic species at risk mapping tool. https://open.canada.ca/data/en/dataset/e0fabad5-9379-4077-87b9-5705f28c490bj. Accessed August 2, 2022.

Government of Ontario. 2019. Make a natural heritage area map. https://www.ontario.ca/page/make-natural-heritage-area-map. Accessed August 2, 2022.

Government of Ontario, 2018. Species at Risk in Ontario. https://www.ontario.ca/page/species-risk-ontario#section-1. Accessed August 2, 2022.

Migratory Birds Convention Act. 1994. S.C. 1994, c. 22. Current version 25 August 2020.

Ministry of Municipal Affairs and Housing. 2020. *Provincial Policy Statement*. Queen's Printer of Ontario. 50 p.

Ministry of Natural Resources and Forestry (MNRF). 2021a. *Make A Map: Natural Heritage Areas*. Ministry of Natural Resources and Forestry. http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US. Queen's Printer for Ontario. Accessed August 2, 2022.

Ministry of Natural Resources and Forestry (MNRF). 2021c. *Fish ON-Line*. Queen's Printer of Ontario. https://www.gisapplication.lrc.gov.on.ca/FishONLine/Index.html?site=FishONLine&viewer=FishONLine&locale=en-US. Accessed August 2, 2022.

Ministry of Natural Resources and Forestry (MNRF). 2000. Significant Wildlife Habitat Technical Guide. Fish and Wildlife Branch. Science Development and Transfer Branch Southcentral Sciences Section. Peterborough, ON. 151 p.

Ministry of Natural Resources and Forestry (MNRF). 2015. Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E. Regional Operations Division. Peterborough, ON. 38 p.

Ministry of Natural Resources and Forestry (MNRF). 2010. Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005. Second Edition. Toronto: Queen's Printer for Ontario. 248 p.

Ministry of the Environment, Conservation, and Parks (MECP). 2009. *Map: Well Records*. https://www.ontario.ca/environment-and-energy/map-well-records. Accessed August 2, 2022.

Ministry of the Environment, Conservation, and Parks (MECP). 2021. *Source Protection Information Atlas.* Interactive web-tool. https://www.lioapplications.lrc.gov.on.ca/SourceWaterProtection/index.html?viewer=SourceWaterProtection.SWPViewer&locale=en-CA. Accessed August 2, 2022.

Ministry of Transportation (MTO). 2013. *Environmental for Fish and Fish Habitat*. Ontario Ministry of Transportation. 581 p. June 2009.

Northern Development, Mines, Natural Resources and Forestry (NDMNRF). 2021b. *Land Information Ontario metadata tool*. https://www.ontario.ca/page/land-information-ontario. Queen's Printer of Ontario. Accessed August 2, 2022

Ontario Geological Survey. 2011. 1:250 000 scale bedrock geology of Ontario; Ontario Geological Survey, Miscellaneous Release–Data 126 - Revision 1.

Ontario Nature. 2021. *Ontario Reptile and Amphibian Atlas.* Ontario Nature. http://www.ontarionature.org/atlas. Accessed January 10, 2022.

Region of Peel. 2022. *Official Plan.* https://www.peelregion.ca/officialplan/review/pdf/official-plan-review-consolidation-clean.pdf. Accessed September 09, 2022.

Species at Risk Act. 2002. S.C. 2002, c. 29. Current version June 06, 2019.

Toronto Entomologists' Association. 2020. *Ontario Butterfly Atlas*. Toronto Entomologists' Association. https://www.ontarioinsects.org/atlas/. Accessed August 2, 2022.

Town of Caledon. 2018. *Official Plan*. https://www.caledon.ca/en/town-services/resources/Documents/business-planning-development/Official_Plan_Master_Copy.pdf. Accessed September 2, 2022.

Toronto and Region Conservation Authority (TRCA). 2008. *Bolton Resource Management Tract Study- Terrestrial Biological Inventory and Assessment.* Biological Inventories. Retrieved from: https://trca.ca/conservation/environmental-monitoring/terrestrial-habitat-species/biological-inventories/. Retrieved on December 19, 2022.