



Appendix A-1

Natural Environment Report

Natural Environment Report

Conversion of Scarborough Rapid Transit Right-of-Way to Busway –
Transit and Rail Project Assessment Process

Toronto Transit Commission

60729927

August 2024

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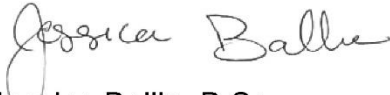


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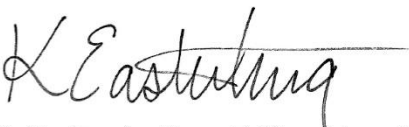


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Natural Environment Report

Conversion of Scarborough Rapid Transit Right-of-Way to Busway – Transit and Rail Project Assessment Process

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Executive Summary

The Toronto Transit Commission is undertaking a Transit and Rail Project Assessment Process for the Conversion of Scarborough Rapid Transit Right-of-Way to Busway project, which aims to convert the north-south portion of the decommissioned Line 3 Scarborough Rapid Transit corridor into a dedicated busway. As part of the Scarborough Rapid Transit decommissioning plan, two phases were developed. Phase 1 would see the Toronto Transit Commission operate an interim bus service on-street, which was planned to go into service by November 2023, however, due to the Scarborough Rapid Transit derailment in July 2023, interim bus service started in August 2023. The Toronto Transit Commission is currently advancing the detailed design of Phase 2, which involves converting the at-grade north-south portion of the Scarborough Rapid Transit right-of-way into a busway, allowing buses to operate in the converted busway between the Ellesmere and Kennedy stations and continuing service on-street along existing transit priority lanes on Ellesmere Road between Ellesmere and Scarborough Centre stations, as implemented in Phase 1.

AECOM Canada Ltd. (AECOM) has been retained by the Toronto Transit Commission to complete the Transit and Rail Project Assessment Process for Phase 2 of the Scarborough Rapid Transit decommissioning plan. This Natural Environment Report provides:

- Background and context for the Project.
- Describes the existing environmental conditions (based on information collected through background information review and ecological field investigations).
- Identifies Natural Heritage Features.
- Describes the proposed work.
- Provides an impact assessment on Natural Heritage Features.
- Recommends mitigation measures and identifies anticipated future permitting needs.

Existing aquatic and terrestrial conditions were identified through a background review of secondary sources and field investigations. A Species at Risk and Significant Wildlife Habitat screening were completed based on the existing conditions data and species records identified. Given the urban setting of the proposed works, few Natural Heritage Features were present within the Study Area. Natural heritage features were limited to:

- Unevaluated wetlands.
- Toronto Ravine and Natural Features Protection Area.

- The Dorset Park Branch of Southwest Highland Creek.
- Candidate Significant Wildlife Habitat:
 - Seasonal Concentration Areas: Bat Maternity Colonies.
 - Specialized Habitat for Wildlife: Turtle Nesting Area and Amphibian Breeding Habitat.
 - Habitat for eight Species of Conservation Concern including Barn Swallow (*Hirundo rustica*), Common Nighthawk (*Chordeiles minor*), Peregrine Falcon (*Falco peregrinus*), Wood Thrush (*Hylocichla mustelina*), Eastern Wood-pewee (*Contopus virens*), Monarch (*Danaus plexippus*), Snapping Turtle (*Chelydra serpentina*) and Meske's Underwing (*Catocala meskei*).
- Candidate habitat for eight Species at Risk including Chimney Swift (*Chaetura pelagica*), Red-headed Woodpecker (*Melanerpes erythrocephalus*), Butternut (*Juglans cinerea*), Black Ash (*Fraxinus nigra*), Eastern Small-footed Myotis (*Myotis leibii*), Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*) and Tri-coloured Bat (*Perimyotis subflavus*).

Potential impacts from the proposed works include damage and disturbance to adjacent natural features, disturbance to potential terrestrial wildlife, including candidate Species at Risk and Species of Conservation Concern habitat, increased sedimentation and erosion potential, and disturbance to fish and their habitat. Avoidance measures, such as the work limit restrictions designed (i.e., work will be mostly limited to the existing right-of-way) for the Project and compliance with restriction of construction activities to outside of sensitive periods for local or significant wildlife species, in addition the incorporation of mitigation measures such as installation of fencing, wildlife exclusion measures, erosion and sediment control measures, machinery and equipment practices, and invasive species control strategies are anticipated to address these potential impacts.

The anticipated permits and approvals include obtaining a permit under Ontario Regulation 41/24 of the Conservation Authorities Act, 1990. Should any of the proposed works occur below the high-water mark of Southwest Highland Creek, it is highly recommended that the impacts to fish habitat be reassessed and a review from Fisheries and Oceans Canada may be deemed necessary.

Table of Contents

1.	Introduction	1
1.1	Purpose	1
1.2	Previous Applicable Studies	2
1.3	Study Area	2
2.	Legislative and Policy Context	5
3.	Methods	8
3.1	Background Information Review	8
3.2	Field Investigations	10
3.2.1	Fish and Fish Habitat Investigations	10
3.2.2	Terrestrial Field Investigations	12
3.2.2.1	Ecological Land Classification	12
3.2.2.1.1	Community Sensitivity	12
3.3	Significant Wildlife Habitat Screening	14
3.4	Species at Risk Habitat Screening	15
4.	Existing Conditions	16
4.1	Natural Heritage Features	16
4.2	Planning Policy Areas	17
4.3	Fish and Fish Habitat	18
4.3.1	Background Information Summary	18
4.3.2	Fish Habitat Assessment	20
4.3.2.1	Southwest Highland Creek Downstream	20
4.3.2.2	Southwest Highland Creek Upstream	23
4.4	Ecological Land Classification and Plant Inventory	24
4.4.1	Background Information Summary	24
4.4.2	Field Investigation Results	25
4.5	Wildlife and Wildlife Habitat	38
4.6	Significant Wildlife Habitat	40
4.7	Species at Risk Habitat Screening	41
5.	Proposed Project Works	43
6.	Potential Effects Assessment	44
6.1	Existing Impacts	44
6.2	Potential Impacts of the Proposed Works	46
6.2.1	Direct Potential Impacts	46
6.2.1.1	Construction Phase	46
6.2.1.2	Operational Phase	49

6.2.2	Indirect Potential Impacts	49
6.2.2.1	Construction Phase	49
6.2.2.2	Operational Phase	51
6.3	Mitigation	52
7.	Anticipated Permits and Approvals	58
8.	Future Opportunities, Constraints and Other Considerations	59
9.	References	61

Figures

Figure 1:	Natural Heritage Features	3
Figure 2:	Aquatic Field Investigations	21
Figure 3:	Terrestrial Field Investigations	33

Tables

Table 2-1:	Relevant Legislation and Policies	6
Table 4-1:	Southwest Highland Creek Fish Community Data	19
Table 4-2:	Vegetation Communities within Study Area	28
Table 4-3:	Incidental Wildlife Observations	39
Table 6-1:	Summary of Impacts to Vegetation Communities within the Study Area	47
Table 6-2:	Potential Impacts, Mitigation Measures and Monitoring Activities for the Proposed Works	54
Table 7-1:	Anticipated Permits and Approvals	58

Appendices

Appendix A. Photologs

Appendix A1. Terrestrial Photolog

Appendix A2. Aquatic Photolog

Appendix B. Vascular Plant List

Appendix C. Species at Risk and Species of Conservation Concern Habitat Screening

1. Introduction

The Toronto Transit Commission is undertaking a Transit and Rail Project Assessment Process for the Conversion of Scarborough Rapid Transit Right-of-Way to Busway project which aims to convert the decommissioned Line 3 Scarborough Rapid Transit corridor into a dedicated busway. As part of the Scarborough Rapid Transit decommissioning plan, two phases were developed. Phase 1 would see the Toronto Transit Commission operate an interim bus service on-street, which was planned to go into service by November 2023, however, due to the Scarborough Rapid Transit derailment in July 2023, interim bus service started in August 2023. The Toronto Transit Commission is currently advancing the detailed design of Phase 2, which involves converting the at-grade north-south portion of the Scarborough Rapid Transit right-of-way into a busway, allowing buses to operate in the converted busway between Ellesmere and Kennedy stations and continuing service on-street along existing transit priority lanes on Ellesmere Road between Ellesmere and Scarborough Centre stations, as implemented in Phase 1.

AECOM Canada Ltd. (AECOM) has been retained by the Toronto Transit Commission to complete the Transit and Rail Project Assessment Process for Phase 2 of the Scarborough Rapid Transit decommissioning plan. This Natural Environment Report assesses the existing environmental conditions and potential impacts within the busway corridor and surrounding area as well as recommends mitigation.

1.1 Purpose

The Transit Project Assessment Process has been updated as of February 2024 to the Transit and Rail Project Assessment Process. The Transit and Rail Project Assessment Process is a proponent driven, self-assessment process that provides a stream-lined approach to completing an assessment of a project. It involves a pre-planning phase which includes consultation, assessment of impacts, development of measures to mitigate negative impacts, and documentation, and is followed by a regulated (up to 120 days) consultation and documentation period.

This purpose of the Natural Environment Report is to provide:

- Background and context for the Project.
- Describes the existing environmental conditions (based on information collected through background information review and ecological field investigations).
- Identifies Natural Heritage Features.

- Describes the proposed work; provides an impact assessment on Natural Heritage Features.
- Recommends mitigation measures and identifies anticipated future permitting needs.

1.2 Previous Applicable Studies

AECOM previously completed an Environmental Project Report (AECOM, 2017; hereafter “2017 Environment Project Report”) and Environmental Project Report Addendum Report (AECOM, 2020a; hereafter “2020 Addendum”) for the Scarborough Subway Extension project. Natural heritage reports produced as part of the 2017 Environment Project Report and 2020 Addendum were used in this Natural Environment Report as they identified and assessed Natural Heritage Features that occurred in proximity to the Study Area for this Project.

1.3 Study Area

The Project is located along the existing Line 3 track between Ellesmere Road and Eglinton Avenue East in Scarborough, Ontario. The proposed works include converting the existing track and right-of-way into a busway and creating three stops at Ellesmere Road, Lawrence Avenue East, and Tara Avenue. The Construction Disturbance Area includes the outermost limit of construction activities required for the proposed works and is shown on **Figure 1**. For this Natural Environment Report, a 120 metre area has been added around the Construction Disturbance Area to allow for the identification of Natural Heritage Features on adjacent Lands as defined by the *Natural Heritage Reference Manual* (Ministry of Natural Resources and Forestry, 2010). The 120 metre buffer is originated from the Natural Heritage policies of the *Provincial Policy Statement* (Ministry of Municipal Affairs and Housing, 2020). The Study Area is shown in **Figure 1**.

Figure 1: Natural Heritage Features

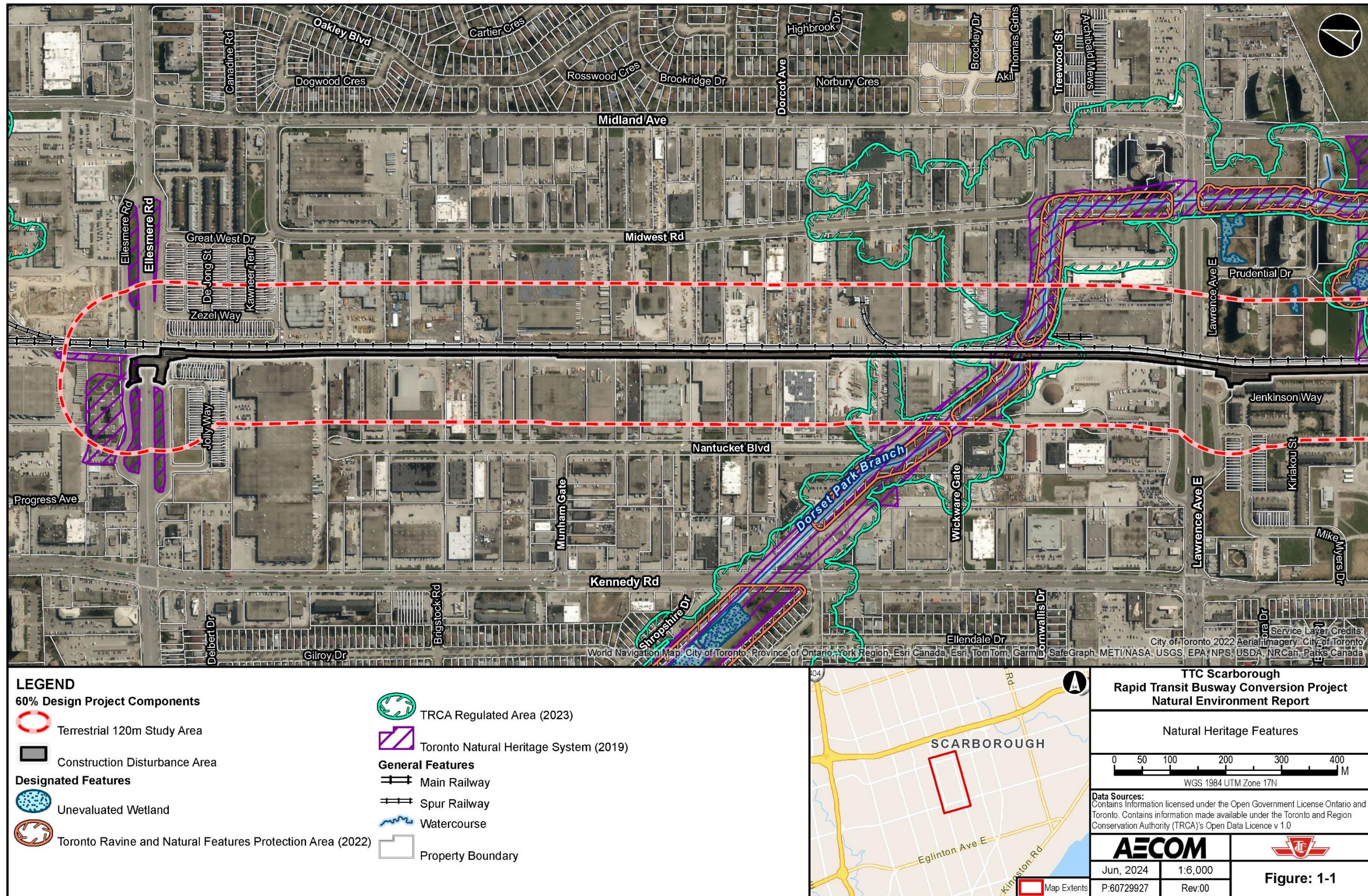
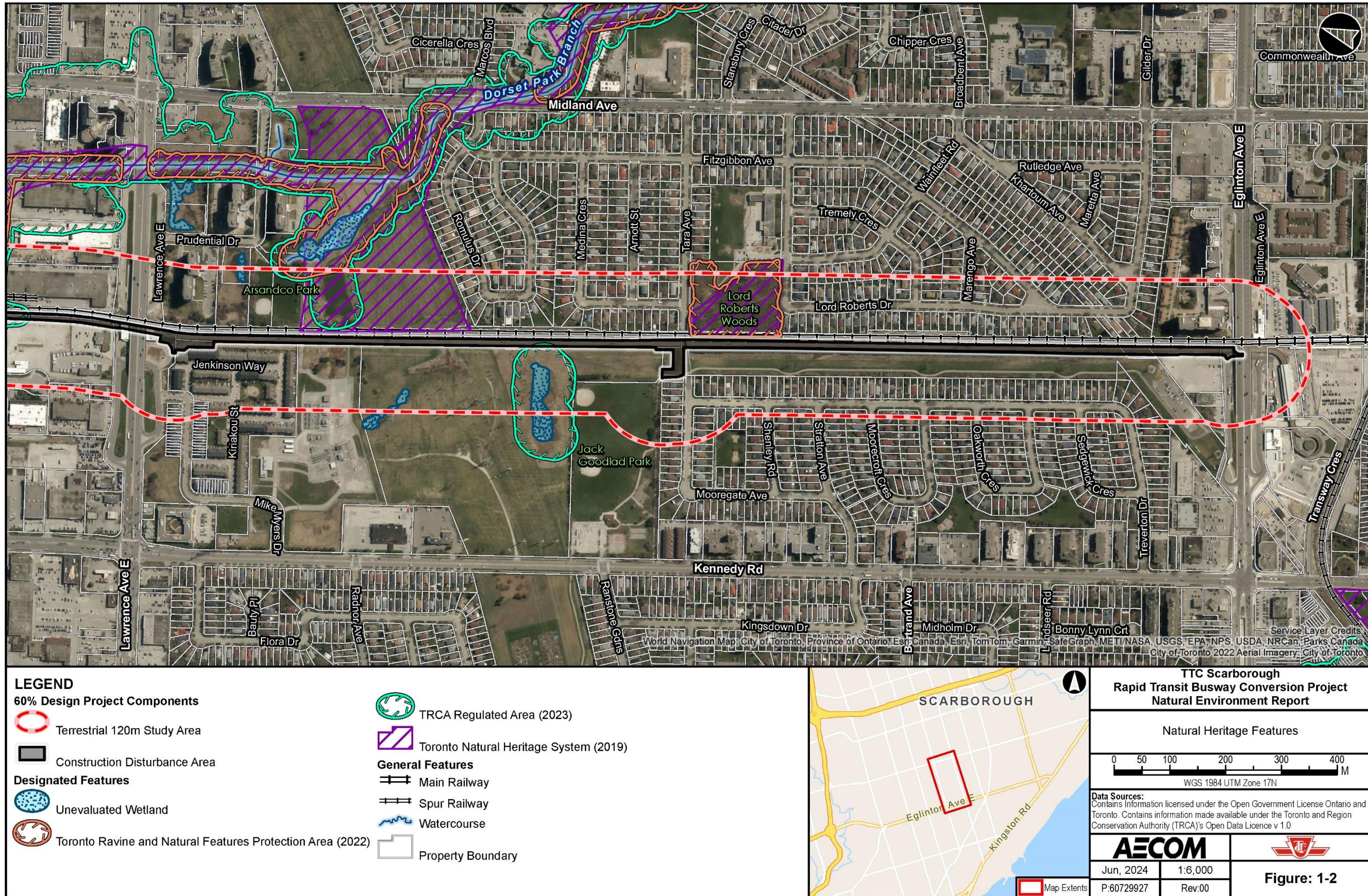


Figure 1: Natural Heritage Features (continued)



LEGEND

60% Design Project Components

- Terrestrial 120m Study Area
- Construction Disturbance Area

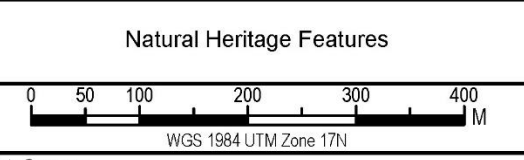
Designated Features

- Unevaluated Wetland
- Toronto Ravine and Natural Features Protection Area (2022)

- TRCA Regulated Area (2023)
- Toronto Natural Heritage System (2019)
- General Features**
- Main Railway
- Spur Railway
- Watercourse
- Property Boundary



**TTC Scarborough
 Rapid Transit Busway Conversion Project
 Natural Environment Report**



Data Sources:
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2. Legislative and Policy Context

The Project triggers requirements under, and consideration for, legislation at municipal, provincial and federal jurisdictions. The requirements and considerations for each level of government are outlined in **Table 2-1**.

Table 2-1: Relevant Legislation and Policies

Level of Government	Legislation	Governing Authority	Relevant Information
Federal	<ul style="list-style-type: none"> ■ Fisheries Act, 1985 (amended 2019). 	<ul style="list-style-type: none"> ■ Fisheries and Oceans Canada. 	<ul style="list-style-type: none"> ■ On August 28, 2019, the updated Fish and Fish Habitat Protection Provisions of the Amended Fisheries Act came into force. Changes to the Act include a return to the policies that were enforced prior to the 2012 amendments, focusing on the following key concepts: <ul style="list-style-type: none"> – Protecting all fish and fish habitat (i.e., the focus is no longer on only protecting Commercial, Recreational and Aboriginal fisheries). – Restoring the previous prohibition against ‘harmful alteration, disruption or destruction of fish habitat’. – Restoring a prohibition against causing ‘the death of a fish by any other means than fishing’. ■ The Fish and Fish Habitat Protection Program ensures compliance with relevant provisions under the Fisheries Act and Species at Risk Act. If project proponents are unable to reduce the risk of a harmful alteration, disruption, or destruction to fish habitat or death of fish through the implementation of Fisheries and Oceans Canada Measures to Protect Fish and Fish Habitat, including the use of applicable Standards and Codes of Practice, or if a project does not fall under the exclusion criteria presented on the Fisheries and Oceans Canada Projects Near Water website, those projects may be subject to a Request for Review by Fisheries and Oceans Canada. ■ If death of a fish, or harmful alteration, disruption, or destruction is likely to result from a project, the proponent will be required to obtain Authorization from Fisheries and Oceans Canada. An Authorization includes terms and conditions the proponent must follow to avoid, mitigate, offset, and monitor the impacts to fish and fish habitat resulting from the Project.
Federal	<ul style="list-style-type: none"> ■ Migratory Birds Convention Act, 1994. ■ Migratory Bird Regulations, 2022. 	<ul style="list-style-type: none"> ■ Environment and Climate Change Canada. 	<ul style="list-style-type: none"> ■ The Migratory Birds Convention Act is intended to protect migratory birds, their eggs, and their active nests. The Act includes protections for more than 700 species of birds. The Migratory Birds Convention Act prohibits the possession, destruction, and harm of migratory birds and/or their nests while there is a live bird or a viable egg in it for most migratory birds except for 18 species that have site fidelity and reuse their nests from year to year and receive year-round nest protection whether there are eggs or live birds in there or not. The <i>Migratory Bird Regulations, 2022</i> provide year-round protection to migratory bird nests when they are considered to have a high conservation value for migratory birds. Nests of species that are protected year-round are listed in Schedule 1 of the Migratory Birds Convention Act.
Federal	<ul style="list-style-type: none"> ■ Species At Risk Act, 2002. 	<ul style="list-style-type: none"> ■ Environment and Climate Change Canada - Canadian Wildlife Services, Fisheries and Oceans Canada. 	<ul style="list-style-type: none"> ■ The Species at Risk Act and its associated regulations afford protection to terrestrial species listed in Schedule 1 of the Act when they occur on federal land, land subject to federal approvals, or are also regulated under the Migratory Birds Convention Act. ■ The federal government has the authority to regulate in relation to fisheries, shipping, and navigation, and jurisdiction over these subject areas applies to all parts of the oceans, lakes, rivers, and streams within the Canadian provinces and territories. As such, Species at Risk Act regulates any activity that affects a Species at Risk Act-protected aquatic species, such as fish, shellfish, crustaceans, marine animals, or marine plants. ■ The Species at Risk Act contains several prohibitions to species listed on Schedule 1 as Endangered or Threatened, including prohibitions on harming an individual Species at Risk, their residence, or the Critical Habitat of the listed aquatic species and Migratory Birds Convention Act-protected migratory birds.
Provincial	<ul style="list-style-type: none"> ■ Endangered Species Act, 2007. 	<ul style="list-style-type: none"> ■ Ontario Ministry of Environment, Conservation, and Parks. 	<ul style="list-style-type: none"> ■ Under the Endangered Species Act, species are listed as Extirpated, Endangered, Threatened, and Special Concern. <ul style="list-style-type: none"> – The Endangered Species Act prohibits the killing, harming, or harassment of Endangered or Threatened species and the damage or destruction of their habitat. – For the purposes of this report, Special Concern species are considered Species of Conservation Concern. ■ The Ministry of Environment, Conservation, and Parks may grant a permit or other authorization for activities that would otherwise not be allowable under the Endangered Species Act.
Provincial	<ul style="list-style-type: none"> ■ Fish and Wildlife Conservation Act, 1997. 	<ul style="list-style-type: none"> ■ Ontario Ministry of Natural Resources and Forestry. 	<ul style="list-style-type: none"> ■ The Fish and Wildlife Conservation Act affords protection for some species of birds, amphibians, reptiles, and mammals in Ontario. Some bird species which are not afforded protection under the Migratory Birds Convention Act are afforded protection under the Fish and Wildlife Conservation Act, such as raptors. Nests of these bird species can only be removed if a permit is obtained from the Ministry of Natural Resources and Forestry.

Level of Government	Legislation	Governing Authority	Relevant Information
<p>Provincial</p>	<ul style="list-style-type: none"> ■ Planning Act, 1990 and Provincial Policy Statement, 2020. 	<ul style="list-style-type: none"> ■ Ministry of Municipal Affairs and Housing. 	<ul style="list-style-type: none"> ■ The Provincial Policy Statement, 2020 identifies seven types of Natural Heritage Features to be protected: <ul style="list-style-type: none"> - Significant habitat of Endangered or Threatened species. - Significant wetlands. - Coastal wetlands. - Significant woodlands in Ecoregions 6E and 7E. - Significant valley lands in Ecoregions 6E and 7E. - Significant Wildlife Habitat, including habitat of Species of Conservation Concern. - Significant Areas of Natural and Scientific Interest. ■ Policies in the Provincial Policy Statement are used to guide decision-making in land use planning. Under the Provincial Policy Statement, development and site alteration are prohibited in significant wetlands in Ecoregion 6E and 7E. In addition, development and site alteration are not permitted in or within the remaining Natural Heritage Features unless it can be shown that there will be no negative impact or permits or approvals are obtained under other regulations and legislations as appropriate.
<p>Provincial</p>	<ul style="list-style-type: none"> ■ Conservation Authorities Act, 1990. 	<ul style="list-style-type: none"> ■ Ontario Ministry of Natural Resources and Forestry. 	<ul style="list-style-type: none"> ■ Ontario Regulation (O. Reg.) 41/24: Prohibited Activities, Exemptions, and Permits came into effect on April 1, 2024 following amendments to the Conservation Authorities Act, 1990. The new O. Reg 41/24 establishes guidelines for the mapping of regulated areas within conservation authorities' jurisdictions where development could be subject to flooding, erosion, or dynamic beaches, or where interference with wetlands and alterations to shorelines and watercourses might have an adverse effect on those environmental features. This regulation identifies the processes to be followed to obtain exemptions and permits to allow for prohibited activities to occur within these regulated areas. The Study Area falls within the Toronto and Region Conservation Authority's regulation limit.
<p>Municipal</p>	<ul style="list-style-type: none"> ■ Toronto Official Plan (City of Toronto, 2023). ■ City of Toronto Municipal Code, Chapter 813 (Street Tree Protection By-law No. 388-2000, Private Tree By-law No. 780-2004, Ravine and Natural Feature Protection By-law No. 248-2013)), 2022a. ■ City of Toronto Municipal Code, Chapter 608 (Parks By-law No. 144-2012), 2024. 	<ul style="list-style-type: none"> ■ City of Toronto. 	<ul style="list-style-type: none"> ■ The City of Toronto's Natural Heritage System includes: <ul style="list-style-type: none"> - Significant landforms and physical features. - Watercourses and hydrological features. - Valley slopes, riparian zones. - Terrestrial natural habitat types. - Significant aquatic features. - Species of concern and significant biological features that are subject to the Provincial Policy Statement. ■ According to Map 9 the Study Area falls within the Natural Heritage System. According to Section 3.4.14 of the City's Official Plan (City of Toronto, 2023), new or expanding infrastructure should be avoided in the Natural Heritage System unless there is no reasonable alternative, in which case adverse impacts are minimized and natural features and ecological functions are restored or enhance where feasible. ■ The municipal tree protection by-laws (City of Toronto 2022a) provide for the protection of trees and woodlots on both private and municipal property. ■ The City's Parks By-law protects all trees, regardless of size, on City parkland. ■ The City's Street By-law protects all trees, regardless of size, situated on City-owned streets. ■ The City's Private Tree By-law protects trees on private property with a diameter at breast height of 30 cm or more as well as trees of any size that were planted as a condition of a permit issued under this By-Law or a site plan agreement. ■ The Ravine and Natural Feature Protection By-law protects public and private natural areas that are vulnerable to degradation. The By-law prohibits and regulates the injury and destruction of trees, as well as filling, grading and dumping within designated areas of the City. Trees of any size are protected by the Ravine and Natural Feature Protection By-law. ■ An application to the City for a permit is required prior to undertaking any work within public or private lands that will result in the injury or removal of a tree or removal of a woodland.

3. Methods

3.1 Background Information Review

A background information review was completed prior to field investigations to obtain information on known Natural Heritage Features and species records, including rare species (i.e., Species at Risk and Species of Conservation Concern) within the Study Area. Background information was obtained from the following sources:

- Ministry of Natural Resources and Forestry’s Natural Heritage Information Centre: Make-a-map feature (2024a) and Ministry of Natural Resources and Forestry’s Land Information Ontario GeoHub base (2024b) for:
 - Natural Heritage Features (e.g., Areas of Natural and Scientific Interest, wooded areas, Provincially Significant Wetlands / Locally Significant Wetlands / unevaluated wetlands, provincial parks).
 - Aquatic Resource Areas.
 - Fish community and angling records.
 - Dam inventory.
 - Watershed mapping.
 - Wildlife habitats.
 - Aerial photography.
 - Natural Heritage Information Centre provincially tracked species.
- Wildlife Atlases and other online databases:
 - Ontario Breeding Bird Atlas (Bird Studies Canada et al., 2006).
 - Important Bird Areas (Birds Canada, 2024).
 - Ontario Reptile and Amphibian Atlas (Ontario Nature, 2019).
 - Ontario Butterfly Atlas (Toronto Entomologists’ Association, 2024).
 - Ontario Moth Atlas (Kaposi *et al.*, 2024).
 - Bat Conservation International Species Profile and Range Maps (2024).
 - Fisheries and Oceans Canada Species at Risk map (Fisheries and Oceans Canada, 2024).
 - eBird (2024).
 - iNaturalist (2024).

- Ontario Ministry of Agriculture, Food and Rural Affairs Ag Maps (Ontario Ministry of Agriculture, Food and Rural Affairs, 2024).
- Toronto and Region Conservation Authority Open Data Portal (Toronto and Region Conservation Authority, 2018a).
- Environmentally Significant Areas Interactive Map (City of Toronto, 2022b).
- **Planning Documents and Guidelines:**
 - Natural Heritage Reference Manual (Ministry of Natural Resources and Forestry, 2010).
 - Species at Risk Public Registry (Environment and Climate Change Canada, 2021).
 - Species at Risk in Ontario List (Ministry of Environment, Conservation, and Parks, 2018).
 - Significant Wildlife Habitat Technical Guide (Ministry of Natural Resources and Forestry, 2000).
 - Significant Wildlife Habitat Criteria Schedules For Ecoregion 7E (Ministry of Natural Resources and Forestry, 2015).
 - Toronto Official Plan (City of Toronto, 2023).
- **Reports:**
 - Scarborough Subway Extension Environmental Project Report (AECOM, 2017).
 - Scarborough Subway Extension Environmental Project Report – March 2020 Addendum (AECOM, 2020a).
 - Natural Environment Report Scarborough Subway Extension Environmental Project Report – March 2020 Addendum (AECOM, 2020b).
 - Natural Heritage Report Scarborough Subway Extension from Kennedy Station to Scarborough Centre (LGL, 2017).
 - Highland Creek Watershed Report Card (Toronto and Region Conservation Authority, 2018b).
- **Aerial photographic Imagery (City of Toronto, 2022c).**

3.2 Field Investigations

Field investigations were conducted to supplement available background information as described in **Section 3.1** above. Representative terrestrial and aquatic photographic logs are provided in **Appendix A1** and **A2**, respectively. The following sections document the detailed methods of these investigations.

3.2.1 Fish and Fish Habitat Investigations

A fish habitat investigation was completed on May 9, 2024. An AECOM ecologist undertook this investigation to confirm the location and boundaries of aquatic features, capture potential fish habitat, and to capture any additional potential aquatic features not identified initially through the background information review or aerial imagery.

A detailed assessment of aquatic habitat in the Dorset Park Branch of Southwest Highland Creek was completed within the Study Area. At multiple points in the Study Area where, for example, a change in habitat condition was observed, a break in stream reach, etc., details were collected at transects in representative areas to characterize the habitat conditions of that reach. These include:

- Substrate was recorded by percent composition of substrate type as per below:
 - Bedrock – continuous rock that may be only partly exposed.
 - Boulders – separate, often embedded, over 250 millimetres diameter.
 - Cobble – 65 millimetres to 250 millimetres in diameter.
 - Gravel – 2 millimetres to 65 millimetres in diameter.
 - Sand – 0.06 millimetres – 2 millimetres in diameter, gritty.
 - Silt – 0.06 millimetres – 0.002 millimetres in diameter, floury.
 - Clay – < 0.002 millimetres in diameter, silky.
 - Muck – mix of detritus and silt, sand and/or clay.
 - Detritus – organic matter.
- In-water cover was documented based on the presence and distribution through the water column of material for fish to seek refuge, provided by woody debris, boulders, cobble, aquatic vegetation, other material (i.e., anthropogenic structures) and/or undercut banks. Availability of in-water cover was classified as high where cover ranged between 76-100% of stream surface area; moderate 31-75%; and low 0-30%.

- Overhead canopy cover, which is based on shade and cover provided by the presence and distribution of material hanging over the water (i.e., trees, shrubs, grasses, herbaceous, anthropogenic structures or other) was estimated and classified as: closed 90%-100%, high 61-90%; moderate 31-60%; low 1-30%; or none. Aquatic vegetation was described by type (floating, emergent, or submergent), and the abundance of each type was described as the percent of surface area coverage in each section. The riparian zone's vegetation composition (e.g., woody, herbaceous, grasses, etc.) was described.
- Visual observations were also recorded, including water clarity, colour, presence/distribution, type of aquatic and riparian vegetation, algal growth, and surrounding land use.
- Adjacent land uses were noted for potential influences or impacts to fish habitat function. This included observation of residential and commercial properties and wetland features.
- Channel dimensions:
 - Mean wetted depth – average water depth.
 - Mean wetted width – average width of the wetted area.
 - Mean bankfull depth – average depth of the formed watercourse.
 - Mean bankfull width – average width of the formed watercourse.
 - Mean active channel, where applicable – average width of the formed channel of open water.
- Stream morphology:
 - Runs - typically deep, fast-flowing water with little to no surface turbulence.
 - Riffles - shallow, fast-flowing water typically running over rocks where the surface turbulence aerates the water.
 - Flats - slow-flowing water with a smooth un-agitated surface.
 - Pools – deeper pockets and depositional areas of slow-moving water of compounded water, or side pools along the bank outside of the main flow.
- General notes of habitat conditions and photographs.

Additionally, any specialized aquatic habitat and other notable features and functions were documented and mapped using ArcGIS Desktop. This included features such as: suitable spawning habitat for game fish species (i.e., typically targeted by recreational

anglers) known to occur in the watershed, evidence of erosion, sources of pollution, fish passage impediment, and incidental fish observations.

Fish community sampling was not required as the fish community data obtained through the background review and previous assessments for the Study Area was found to be sufficient (**Section 3.1**).

3.2.2 Terrestrial Field Investigations

3.2.2.1 Ecological Land Classification

Vegetation community data and mapping was initially downloaded from the Toronto and Region Conservation Authority's Open Data Portal (Toronto and Region Conservation Authority, 2018a) within the Study Area. The Toronto and Region Conservation Authority has delineated and classified vegetation communities across the City of Toronto in accordance with the Ministry of Natural Resources and Forestry's Ecological Land Classification System for Southern Ontario (Ecological Land Classification Guide; Lee et al., 1998) but has altered some descriptions of vegetation community types to better represent site-specific conditions that are typical of the Toronto area but not included in the Ministry of Natural Resources and Forestry's Ecological Land Classification Guide (Toronto and Region Conservation Authority, 2018a).

AECOM conducted Ecological Land Classification assessments and a botanical inventory within the Study Area on May 9, 2024, to confirm and refine vegetation communities delineated by the Toronto and Region Conservation Authority. Ecological Land Classification assessments also used the Ministry of Natural Resources and Forestry's Ecological Land Classification Guide to delineate any vegetation communities that the Toronto and Region Conservation Authority did not previously assess. Where vegetation community data was missing and accessibility was limited during field investigations, aerial imagery was used to classify vegetation to the Community Series level in accordance with the Ministry of Natural Resources and Forestry's Ecological Land Classification Guide (Lee et al., 1998). Ecological Land Classification data was mapped using ArcGIS Desktop. The botanical inventory involved recording all observed plant species within each respective Ecological Land Classification community.

3.2.2.1.1 Community Sensitivity

Vegetation community sensitivity was based on the calculation of the Mean Coefficient of Conservatism, the Floristic Quality Index, and the Wetness index for all vegetation communities present in the Study Area. These parameters are intended to be used together to assign an ecological community's sensitivity ranking based on plant species composition. The ranking is not intended to measure the overall value of a community

but rather reflects the community's sensitivity to disturbance based on the grouping of plants present within the community.

Coefficient of Conservation

- These values range from 0 (low) to 10 (high) and are based on species' tolerance of disturbance and fidelity to a specific habitat. Vegetation species and community sensitivity were assessed through the application of Coefficient of Conservatism values, assigned to each native species in southern Ontario (Oldham *et al.*, 1995). The occurrence of species with a Coefficient of Conservatism of 9 or 10 can be indicators of undisturbed habitats such as mature forests, fens or bogs. General habitat values associated with the Coefficient of Conservatism values are:
 - 0-3: species found in a wide variety of communities, including disturbed sites.
 - 4-6: species associated with a specific community, but tolerate moderate disturbance.
 - 7-8: species associated with a community in an advanced successional stage, tolerant of minor disturbances.
 - 9-10: species with a high degree of fidelity to a narrow range of synecological parameters.

Floristic Quality Index

- The Floristic Quality Index of an area is reflected in the mean value of Coefficient of Conservatism. For example, an old field or grazed woodlot would tend to have a low mean Coefficient of Conservatism; these habitats are dominated by opportunistic species that occur in a wide range of site conditions and are tolerant of disturbance. A bog, prairie or intact forest would have a higher value, reflecting the specific habitat requirements of many of the species and the general absence of disturbance. A community with an Floristic Quality Index between 1-19 would be considered to be of low vegetative quality; communities with an Floristic Quality Index between 20-35 would be considered to have a high vegetative quality and communities with an Floristic Quality Index above 35 will be considered of "Natural Area" Quality.

Coefficient of Wetness

- All plants in southern Ontario have been assigned a wetland category, based on the designations developed for use by the United States Fish and Wildlife

Service. Each wetland category has been assigned a numerical value to facilitate the quantification of the wetness index. Plants are designated into the following categories:

- Obligate Wetland: occurs almost always in wetlands under natural conditions (estimated >99% probability).
 - Facultative Wetland: usually occurs in wetlands, but occasionally found in non-wetlands (estimated 67-99% probability).
 - Facultative: equally likely to occur in wetlands or non-wetlands (estimated 34-66% probability).
 - Facultative Upland: occasionally occurs in wetlands, but usually occurs in non-wetlands (estimated 1-33% probability).
 - Upland: occurs seldom in wetlands under natural conditions (estimated <1% probability).
- Each of the above wetland categories has been assigned a numerical value to facilitate the quantification of the wetness index. The index ranges from -5 (obligate wetland) to +5 (upland).

3.3 Significant Wildlife Habitat Screening

The Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E (Ministry of Natural Resources and Forestry, 2015) contains information and criteria for identifying Significant Wildlife Habitat. Significant Wildlife Habitat are defined as areas that have important ecological features and functions and that support sustainable populations of plants, wildlife and other organisms within this Ecoregion. The Ministry of Natural Resources and Forestry generally categorizes Significant Wildlife Habitat into the following five categories:

- Seasonal Concentration Areas.
- Rare Vegetation Communities.
- Specialized Habitats for Wildlife.
- Habitats of Species of Conservation Concern.
- Animal Movement Corridors.

The presence of a Significant Wildlife Habitat was determined by comparing general habitat conditions and characteristics to the habitat criteria identified in the Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E (Ministry of Natural Resources and Forestry, 2015).

For the purpose of this report and as defined in the Natural Heritage Reference Manual (Ministry of Natural Resources and Forestry, 2010), Species of Conservation Concern are those species that are listed as Special Concern under the Endangered Species Act, assessed as Threatened or Endangered by the Committee on the Status of Endangered Wildlife in Canada that are not considered Species at Risk under the Endangered Species Act, or have a sub-national (S-Rank) of S1 to S3. Although Species of Conservation Concern do not receive legal protection under the Endangered Species Act, they may be afforded protection under the Provincial Policy Statement, the Migratory Birds Convention Act, Fish and Wildlife Conservation Act, and other planning documents. A screening for Species of Conservation Concern was completed as outlined in **Section 3.4** below.

3.4 Species at Risk Habitat Screening

Special consideration was given to identifying any Species of Conservation Concern or Species at Risk within the Study Area. Species at Risk includes species listed as Extirpated, Endangered or Threatened on the Species at Risk in Ontario list and receives individual and habitat protection under the Endangered Species Act. Desktop Species of Conservation Concern and Species at Risk habitat screenings for the Study Area were conducted using the sources listed in **Section 3.1**. Species at Risk and Species of Conservation Concern with recent occurrence records or with ranges overlapping within the Study Area were identified and then screened by comparing their habitat requirements to the habitat conditions present on-site as determined through the background information review (**Section 3.1**) and field investigations (**Section 3.2**). The potential for the species to occur within the Study Area was determined through a probability of occurrence whereby the following rankings were applied:

- **Low Probability:** no suitable habitat for the species and no occurrence of the species incidentally observed through field reconnaissance within the Study Area but there is a known species record in the general area.
- **Medium Probability:** potentially suitable Species at Risk habitat identified within the Study Area, but no occurrence of the species incidentally observed through field reconnaissance although there is a known species record in the general area.
- **High Probability:** good quality Species at Risk habitat identified within the Study Area and known species record in the Study Area (either through current field assessment or background information).

4. Existing Conditions

4.1 Natural Heritage Features

Natural features and areas identified for protection in the Provincial Policy Statement and other legislation are collectively referred to as “Natural Heritage Features”. Natural Heritage Features include Valleylands, Environmentally Significant Areas, Provincially Significant Wetlands, Areas of Natural and Scientific Interest, Significant Woodlands and Significant Wildlife Habitat. According to Section 1.6.8.5 of the Provincial Policy Statement, consideration is to be given to Natural Heritage Features when planning for corridors and right-of-ways for significant transportation and infrastructure facilities. Brief descriptions of the different types of Natural Heritage Features are as follows:

- Valleylands refer to a natural area that occurs in a valley or other landform depression that has water flowing through or standing for some period of the year (Ministry of Natural Resources and Forestry, 2010). Significance is determined based on a variety of criteria including, but not limited to, hydrological, geomorphological and ecological function (Ministry of Natural Resources and Forestry, 2010).
- Provincially Significant Wetlands and Locally Significant Wetlands are wetlands that are seasonally or permanently flooded by shallow water, or areas where the water table is close to the surface, enabling the development of hydric soil, which supports primarily hydrophytic or water-tolerant plants (Ministry of Natural Resources and Forestry, 2014). The Ministry of Natural Resources and Forestry evaluates the significance of wetlands through the Ontario Wetland Evaluation System. Based on the resulting score of an evaluation, an evaluated wetland can fall into one of two classes: Provincially Significant Wetlands or Locally Significant Wetlands (Ministry of Natural Resources and Forestry, 2014). Until such a time, that an Ontario Wetland Evaluation System evaluation is completed and evaluated by the Ministry of Natural Resources and Forestry, unevaluated wetlands should be considered as significant for the purpose of assessing impacts.
- Areas of Natural and Scientific Interest include land and/or water containing natural landscapes or features that have been scientifically identified by the Ministry of Natural Resources and Forestry as having life science or earth science values related to protection, scientific study or education (Ministry of Natural Resources and Forestry, 2010). Areas of Natural and Scientific Interest are designated as earth science (geological) or life science (biological) depending on the features present (Ministry of Natural Resources

and Forestry, 2010). “Candidate Areas of Natural and Scientific Interest” are those provincial-level Areas of Natural and Scientific Interest that the Ministry of Natural Resources and Forestry has identified and recommended for protection but that have not been formally confirmed through a confirmation procedure (Ministry of Natural Resources and Forestry, 2010). For the purpose of the Provincial Policy Statement, an Area of Natural and Scientific Interest is not considered provincially significant until it has been confirmed.

- Significant Woodlands are woodlots that are identified as significant in a municipal official plan or woodlots that have been investigated and meet the criteria of significance as identified in the Natural Heritage Reference Manual (Ministry of Natural Resources and Forestry, 2010) or municipal official plan.
- Significant Wildlife Habitat are areas that have important ecological features and functions which support sustainable populations of plants, wildlife and other organisms. Significant Wildlife Habitat is further described in **Section 4.6**.

Natural Heritage Features were limited as the Study Area was situated in an urban landscape, mostly consisting of streetscapes, residential/commercial/industrial properties and manicured lawns. Minimal naturalized areas were identified in the Study Area. Naturalized areas were generally limited to narrow strips of riparian vegetation and pockets of fragmented vegetation communities within parkland. A review of the sources listed in **Section 3.1** identified the following Natural Heritage Features within the Study Area:

- Unevaluated Wetlands.
- Dorset Park Branch Watercourse.

Natural Heritage Features are shown on **Figure 1**.

4.2 Planning Policy Areas

Planning Policy Areas include land use planning designations from provincial plans, upper and lower-tier municipal official plans, and conservation authorities as described in **Section 2**. According to Land Use Plan Map 13 of the City of Toronto Official Plan (2023), the Study Area was comprised of the following land use designations: Neighbourhoods, Mixed Use Area, Apartment Neighbourhoods, General Employment Area, Core Employment Area, Utility Corridor, Parks and Natural Areas. Parks and Natural Areas were generally limited to the Dorset Park Branch of Southwest Highland Creek watercourse and riparian area, Arsandco Park, and Lord Roberts Woods. A

summary of Planning Policy Areas related to the protection of the natural environment that are applicable to the Project is provided below:

- City of Toronto’s Natural Heritage System.
- City of Toronto’s Ravine and Natural Features Protection Area.
- Toronto and Region Conservation Authority Regulated Area.

Planning Policy Areas are shown on **Figure 1**.

4.3 Fish and Fish Habitat

4.3.1 Background Information Summary

Southwest Highland Creek is a tributary to the Highland Creek watershed which drains into Lake Ontario in Scarborough, Ontario. Southwest Highland Creek begins near Ellesmere Road and Birchmount Road in Scarborough as a channelized drainage system. It flows southeast parallel to Shropshire Drive and crossing the Toronto Transit Commission Line 3 Scarborough Rapid Transit. Southwest Highland Creek continues southeast to its confluence with West Highland Creek in Hague Park. West Highland Creek then flows northeast to Morningside Park and confluences with Highland Creek before its eventual outlet east into Lake Ontario.

The Toronto and Region Conservation Authority evaluates the conditions of the watersheds within its regulation limits using watershed report cards. The current watershed report card published in 2018 (Toronto and Region Conservation Authority, 2018b) found that the Highland Creek Watershed condition was poor, and unchanged since the 2013 report card. The Highland Creek Watershed land cover is 89% urban and has only 11% natural cover. Most of the natural cover is limited to the immediate riparian area of Highland Creek and its tributaries and parks in the lower reaches. A review of aerial imagery suggests that Southwest Highland Creek probably has much less natural cover as there are fewer parks in the branch, and the riparian area is narrower. Similarly, Highland Creek was assessed as “Poor” for total forest cover; only 6% of the entire watershed has any forest cover, and 37% of the watershed has streamside cover. The watershed was also assessed as “Poor” in terms of surface water quality evaluated through benthic invertebrate assessments, phosphorus concentrations, and *Escherichia coli* (*E. coli*) concentrations. It was also noted that chloride concentrations were above the 120 mg/L guideline at nearly all the sampling stations.

A review of Fisheries and Oceans Canada aquatic Species at Risk mapping did not identify any aquatic Species at Risk or Species of Conservation Concern within Southwest Highland Creek, or within the entirety of the Highland Creek Watershed (Fisheries and Oceans Canada, 2024). The Ministry of Natural Resources and Forestry Land Information Ontario mapping (Ministry of Natural Resources and Forestry 2024b) was reviewed and provides fish community data for Southwest Highland Creek, which has been presented in **Table 4-1**. The fish community is dominated by coolwater species that have an intermediate tolerance to environmental perturbations or anthropogenic stresses. The Ministry of Natural Resources and Forestry Land Information Ontario mapping (Ministry of Natural Resources and Forestry, 2024b) also identifies Southwest Highland Creek as a coldwater thermal regime.

The Natural Heritage Report Scarborough Subway Extension from Kennedy Station to Scarborough Centre (LGL, 2017) was completed as part of the 2017 Environment Project Report. In 2014, LGL consulted with the Ministry of Natural Resources and Forestry in regarding in-water work timing windows. The Ministry of Natural Resources and Forestry provided LGL with an in-water work timing window of **July 1 to March 31** for all tributaries to Highland Creek identified in LGL's Natural Heritage Report (2017). As the Dorset Park Branch of Southwest Highland Creek is within the Highland Creek watershed and shares a similar fish community as the tributaries discussed in the LGL Natural Heritage Report (LGL, 2017), the same in-water work timing window is expected to apply.

Table 4-1: Southwest Highland Creek Fish Community Data

Common Name	Scientific Name	Thermal Regime ¹	Tolerance ¹
Bluntnose Minnow	<i>Pimephales notatus</i>	Warm	Intermediate
Common Shiner	<i>Luxilus cornutus</i>	Cool	Intermediate
Creek Chub	<i>Semotilus atromaculatus</i>	Cool	Intermediate
Fathead Minnow	<i>Pimephales promelas</i>	Warm	Tolerant
Johnny Darter	<i>Etheostoma nigrum</i>	Cool	Tolerant
Longnose Dace	<i>Rhinichthys cataractae</i>	Cool	Intermediate
Rainbow Darter	<i>Etheostoma caeruleum</i>	Cool	Intolerant
Rock Bass	<i>Ambloplites rupestris</i>	Cool	Intermediate
Western Blacknose Dace	<i>Rhinichthys obtusus</i>	Cool	Intermediate
White Sucker	<i>Catostomus commersonii</i>	Cool	Tolerant

Notes: Occurrences from Land Information Ontario (Ministry of Natural Resources and Forestry 2024b)
 1. Species preferred thermal regime and tolerance from Ontario Freshwater Fishes Life History Database (Eakins, 2024).

4.3.2 Fish Habitat Assessment

A fish habitat assessment was conducted within the reach of Southwest Highland Creek in the Study Area under the Toronto Transit Commission tracks as displayed on **Figure 2**. The fish habitat assessment was conducted on May 9, 2024, under overcast cloud cover. As noted in **Section 4.3.1**, the surrounding land use was dominated by urban development. There were several mechanics and auto wreckers along the upstream reach of Southwest Highland Creek.

A stormwater management pond was also investigated at Arsandco Park on the east side of the Toronto Transit Commission tracks. This pond was found not to share any direct connection to surrounding watercourses and is not considered regulated fish habitat under the *Fisheries Act*.

4.3.2.1 Southwest Highland Creek Downstream

The downstream reach of Southwest Highland Creek was accessed from Midwest Road upstream to the Toronto Transit Commission crossing. A concrete box culvert discharged water under Midwest Road over a shallow concrete spillway into Southwest Highland Creek. Immediately downstream of the spillway, a large debris jam blocked southwest Highland Creek, which was made up of woody debris and household waste, including large pieces of spray foam. This debris jam likely impedes fish passage upstream.

The entire reach was channelized and surrounded on both sides by steep banks leading up to commercial businesses and parking lots. The banks were less than 10 m wide and well vegetated by deciduous trees and shrubs such as Siberian Elm (*Ulmus pumila*), Manitoba Maple (*Acer negundo*), and Ash (*Fraxinus* sp.), as well as Reed Canary Grass (*Phalaris arundinacea*). This canopy cover provided a high degree of cover over the watercourse (80%). However, instream cover was low (25%) and limited to occasional overhanging woody debris and vegetation, some undercut banks, and substantial amounts of garbage. Throughout the assessed reach, household and commercial garbage was observed, including toilets, furniture, car parts, household waste, a yard shed, and spray foam insulation. This garbage was likely from individuals dumping waste from the top of the bank, and spillage from two garbage dumpsters at the top of the left bank. A sheen, likely caused by hydrocarbons such as oil was also observed on the surface of the water which may be attributable to discharge from nearby businesses.

Figure 2: Aquatic Field Investigations

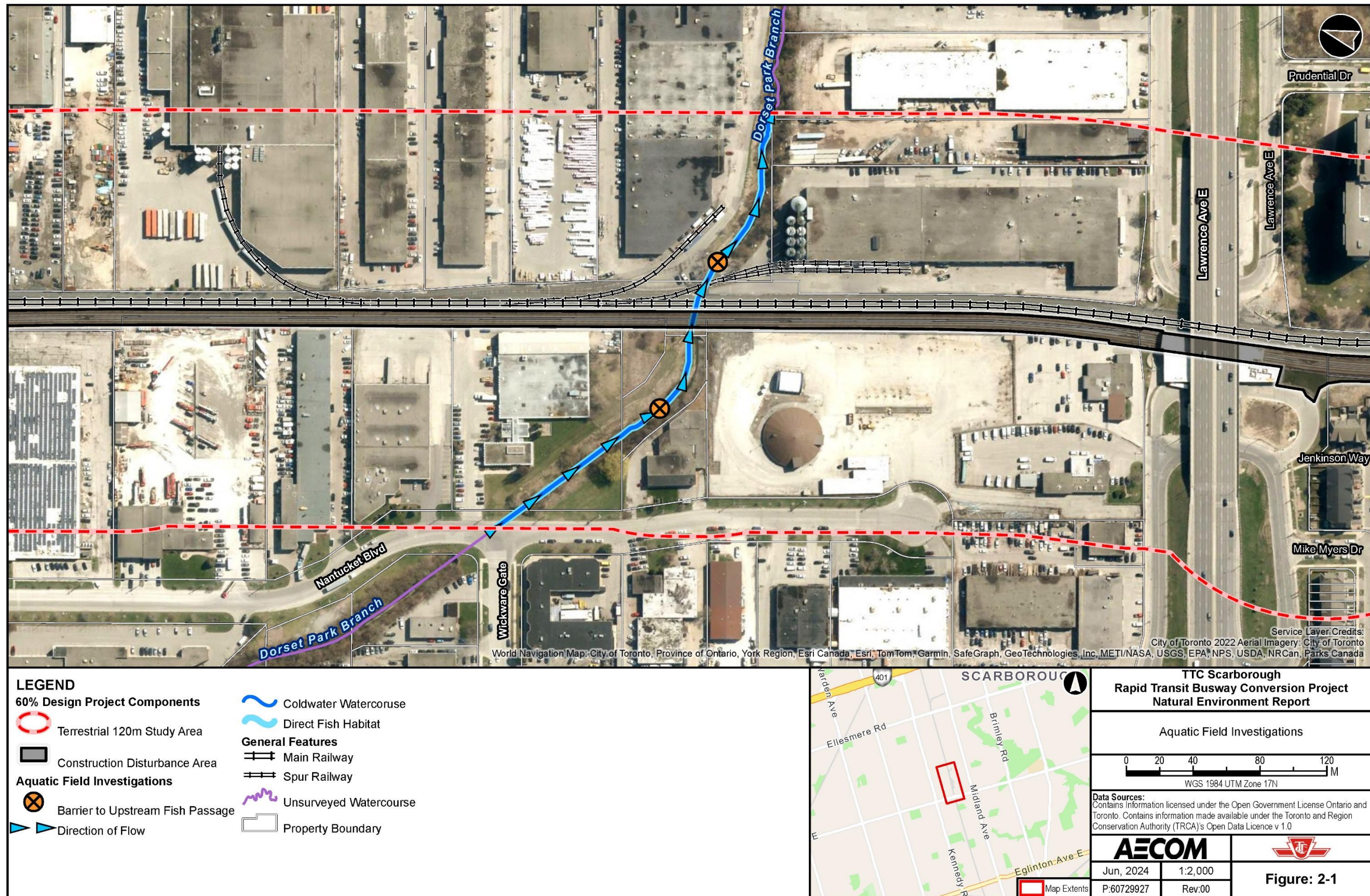
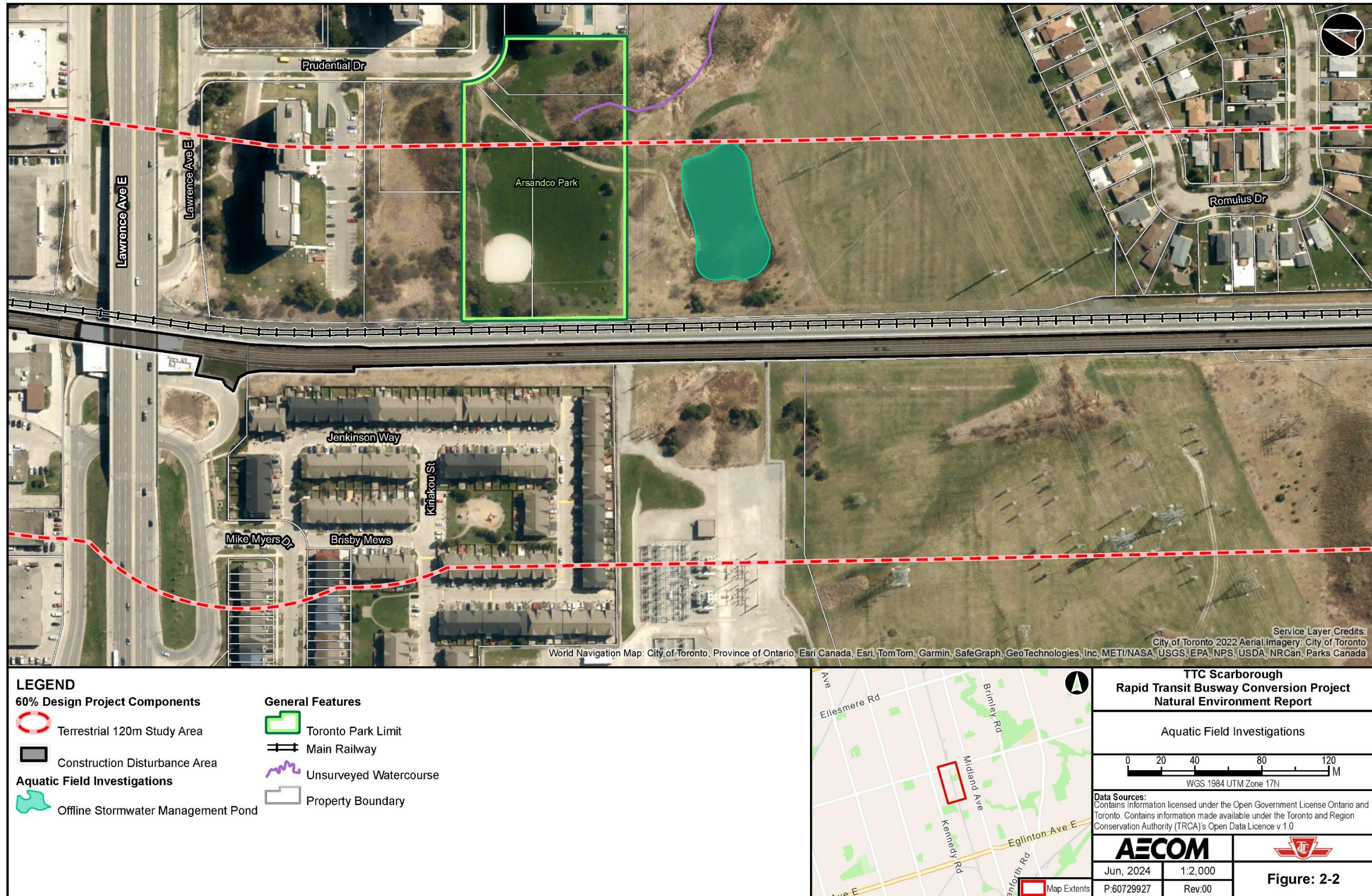


Figure 2: Aquatic Field Investigations (continued)



The substrate of the downstream reach was dominated by sand and gravel overlaying a clay bottom. All of the substrate was overlain by a thin layer of silt. Although no vegetation was observed within the watercourse, green algae covered approximately 75% of the available substrate, which may indicate nutrient pollution within the watercourse. Approximately 75% of the reach was a run averaging 0.23 metres deep and 3.5 metres wide, with a mean bankfull depth of 0.85 metres and mean bankfull depth width of 4.0 metres. Throughout this reach, organic debris and garbage was observed tangled in branches overhanging the watercourse up to 1 metre above the watercourse bed. This suggests that the reach is “flashy”, experiencing rapid increases in flow and during rainfall events leading to temporary high-water levels. The run was punctuated by gravel bars, which narrowed the reach to create riffles averaging 0.03 metres deep and 1.5 metres wide.

The final 25 metres of the reach banks leading to the Toronto Transit Commission crossing was protected by concrete walls that continued into the wetted channel and lined the bottom. Twin corrugated steel pipe culverts measuring 1.9 metres tall and 2.2 metres wide discharged into the concrete-lined channel. The culverts were elevated 0.15 metres from the watercourse, creating a barrier to upstream fish passage. Under high-flow conditions that may submerge the culvert perch, most or all fish species in **Table 4-1** may not tolerate the culvert velocity to travel upstream. The downstream section of the concrete banks was deteriorating, and the banks were eroding and undercut, continuing downstream along both sides of the watercourse for the entire assessed reach.

No indications of groundwater inputs or significant habitat features for fish were observed within the assessed reach.

4.3.2.2 Southwest Highland Creek Upstream

The upstream reach of Southwest Highland Creek was accessed from Nantucket Boulevard downstream to the Toronto Transit Commission crossing. The Nantucket Boulevard corrugated steel pipe culvert was under construction at the time of assessment, and due to the ongoing construction, soil was exposed along the banks.

The entire upstream reach was a concrete-bottom channel surrounded by steeply sloped banks. The substrate within this reach consisted of smooth concrete, though some depositions of gravel were scattered uncommonly throughout the reach. Where the water shallowed, an artificial riffle formed, flowing over the concrete channel, but otherwise, the entire reach consisted of run and flat morphology. As the entire reach was concrete lined, opportunities for fish cover were limited to rare overhanging woody debris and garbage within the channel.

From the Toronto Transit Commission crossing to 40 metres upstream, the watercourse flowed slowly as a flat, averaging 0.17 metres deep and 5 metres wide. The left bank was lined with concrete, with limited vegetation growth and opportunity for stream shading. The right bank was vegetated with cultural meadow species, and a portion extended into the watercourse which supported the growth of Reed Canary Grass, Cattails (*Typha* sp.), and Great Stinging Nettle (*Urtica dioica*).

At the upstream end of this section, there was a break in the concrete channel, stepping up 0.2 metres to a narrower channel. This step creates an impediment to upstream fish passage. Under high-flow conditions that may submerge the channel step, most or all fish species presented in **Table 4-1** may not tolerate the channel velocity to travel upstream. This narrow channel consisted of a run averaging 0.15 metres deep and 2.7 metres wide, with a mean bankfull depth of 0.63 metres and bankfull width of 5 metres. This section had greater canopy cover (75%), provided by deciduous trees and shrubs such as an American Elm (*Ulmus americana*), Manitoba Maple, Ash, and European Buckthorn (*Rhamnus cathartica*) as well as herbaceous species such as Dog-strangling Vine (*Vincetoxicum rossicum*) and Garlic Mustard (*Alliaria petiolata*). The banks were concrete lined and transitioned gradually into vegetated earth.

No indications of groundwater inputs or significant habitat features for fish were observed within the assessed reach.

4.4 Ecological Land Classification and Plant Inventory

4.4.1 Background Information Summary

AECOM conducted Ecological Land Classification in support of the 2020 Addendum along Danforth Road and McCowan Road between Eglinton Avenue East and Sheppard Avenue East. The majority of field investigations for the 2020 Addendum did not overlap with the Study Area for this Project. Overlap solely included the area surrounding Kennedy Station, in which no vegetation communities were identified during previous field investigations.

The Toronto and Region Conservation Authority Ecological Land Classification data was available for non-manicured portions of the hydro corridor and portions of Arsandco Park, Jack Goodland Park and Lord Roberts Woods (Toronto and Region Conservation Authority, 2018a). The Toronto and Region Conservation Authority did not classify communities located in more heavily urbanized areas within the Study Area.

4.4.2 Field Investigation Results

All vegetation communities within the Study Area had evidence of disturbance due to surrounding anthropogenic activities. Communities observed included urban woodlots, meadows adjacent to City parkland, narrow strips along roadsides, and urban ravines. Surveys confirmed no provincially significant vegetation communities within the Study Area.

Within the Study Area, the Toronto and Region Conservation Authority had delineated 16 communities (Toronto and Region Conservation Authority, 2018a). These vegetation communities were assessed during field investigations conducted by AECOM in 2024 and had their boundaries and designations adjusted where appropriate. A total of eight communities initially delineated by the Toronto and Region Conservation Authority were adjusted by AECOM staff to reflect changed conditions between the initial delineation and recent investigations in 2024. These updates include the following:

- Fresh-Moist Sugar Maple – Hardwood Deciduous Forest (FOD6-5) updated to Dry-Fresh Sugar Maple Deciduous Forest (FOD5-1) within Lord Roberts Woods:
 - No significant difference in community composition was observed between the larger FOD5-1 forest and the adjacent FOD6-5 forest as both were dominated by Sugar Maple with a minor population of other associated tree species. These communities were only separated by a pedestrian foot path approximately 5 metres in width.
- Silver Maple Mineral Deciduous Swamp (SWD3-2) updated to be an inclusion to the Dry-Fresh Sugar Maple Deciduous Forest (FOD5-1) at Lord Roberts Woods:
 - This community was very small (approximately 0.07 hectares) and completely enclosed by the FOD5-1 community.
- Exotic Successional Savannah (CUS1-b) along the edge of forest communities at Lord Roberts Woods was removed as a community:
 - This group of vegetation was small (approximately 0.08 hectares) and was observed as a disturbed forest edge rather than a separate vegetation community.
- Mixed Conifer Coniferous Plantation (CUP3-H) and Norway Maple – Conifer Mixed Plantation (CUP2-c) within the hydro corridor was updated to Treed Hedgerow (CUH1-A):
 - These communities were observed to be a single row of trees specifically planted to provide a boundary or windbreak between properties.

- Native Forb Meadow (CUM1-A) located on the southwest side of the hydro corridor and railway was updated to Dry-Moist Old Field Meadow (CUM1-1c):
 - A dominant presence of native forbs was not observed within this community when compared to the presence of non-native and native graminoid species.
- Exotic Forb Meadow (CUM1-c) located between the railway and Jack Goodlad Park was updated to Dry-Moist Old Field Meadow (CUM1-1d):
 - Exotic species were dominant within this community but there was not a majority of forb species present compared to graminoid species.
- Willow Mineral Thicket Swamp (SWT2-2) located on the southwest side of the hydro corridor and railway was updated to Red-Osier Mineral Thicket Swamp (SWT2-5):
 - Red-osier Dogwood (*Cornus sericea*) was observed in a higher proportion within this vegetation community than Willow (*Salix spp.*) species.

A total of 19 vegetation communities were newly delineated within the Study Area as they were not present within the Toronto and Region Conservation Authority's available documentation. An additional four communities were delineated solely via aerial imagery, as permission to enter was not obtained due to time constraints, and communities on each property could not be viewed from publicly accessible areas.

AECOM's vegetation surveys determined that 17 of the delineated 19 Ecological Land Classification communities within the Study Area had low vegetation quality, as their Floristic Quality Index values were below 19. The remaining vegetation community, a Dry- Fresh Sugar Maple Deciduous Forest (FOD5-1) officially known as Lord Roberts Woods, had an Floristic Quality Index of 24.86, indicating high vegetative quality. Despite the higher quality of vegetation within this community, it, as well as the other delineated communities contained several non-native invasive species, including but not limited to: Norway Maple (*Acer platanoides*), Manitoba Maple, European Buckthorn, Garlic Mustard, and Dog-Strangling Vine. The abundance of non-native species is likely the result of previous and ongoing disturbances from urbanization within and around the Study Area (residential/commercial developments, litter, trail systems, etc.). Descriptions of vegetation communities, community sensitivity and floristic assessments are summarized in **Table 4-2** and mapped in **Figure 3**.

A total of 155 plant species were recorded within the Study Area, of which 71 (46%) were native and 73 (47%) were introduced. The remaining 11 (7%) species were not identified to the species level. Additionally, 31 (19%) of the total 161 plant species were

also identified as invasive. No plant Species at Risk were identified in the Study Area. However, seven plant species of regional conservation concern (L1-L3) according to the *Annual local occurrence and local rank update for 2017: terrestrial species and vegetation communities* (Toronto and Region Conservation Authority, 2017) were identified. Species designated as L1-L3 are flagged as being at risk within the Toronto and Region Conservation Authority jurisdiction as they are highly sensitive to habitat loss and urban disturbances (Toronto and Region Conservation Authority, 2017). L1-L3 species observed in the Study Area included: Handsome Sedge (*Carex formosa*), Carolina Spring Beauty (*Claytonia caroliniana*), Running Strawberry-bush (*Euonymus obovatus*), Creeping Juniper (*Juniperus horizontalis*), Eastern Ninebark (*Physocarpus opulifolius*), White Spruce (*Picea glauca*), and Maple-leaved Viburnum (*Viburnum acerifolium*). Of these, Creeping Juniper, Eastern Ninebark, White Spruce, and Maple-leaved Viburnum were most likely planted as they were found in hedgerows, adjacent to residential gardens, and other disturbed or anthropogenically influenced areas. Locations of naturally occurring regional species of conservation concern are included in the vegetation community description in **Table 4-2**. A list of vascular plant species identified is provided in **Appendix B**.

Table 4-2: Vegetation Communities within Study Area

Community	Ecological Land Classification Code and Location	Vegetation or Ecosite Name	Inclusion	Tree Canopy	Shrub Layer	Ground Layer	Floristic Assessments
Forest	<ul style="list-style-type: none"> FOD5-1 Located on either side of a pedestrian path adjacent to Lord Roberts Junior Public School. 	<ul style="list-style-type: none"> Dry – Fresh Sugar Maple Deciduous Forest. 	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> The tree canopy was dominated by Sugar Maple (<i>Acer saccharum</i>), followed by Red Maple (<i>Acer rubrum</i>) and American Beech (<i>Fagus grandifolia</i>). 	<ul style="list-style-type: none"> The shrub layer primarily consisted of young Sugar Maple saplings, European Buckthorn (<i>Rhamnus cathartica</i>), and Chokecherry (<i>Prunus virginiana</i>). 	<ul style="list-style-type: none"> The ground layer included Trout Lily species (<i>Erythronium sp.</i>), Virginia Waterleaf (<i>Hydrophyllum virginiana</i>), and Sugar Maple seedlings. 	<ul style="list-style-type: none"> Average Coefficient of Conservatism: 4.54. Average Coefficient of Wetness: 2.63. Non-native species (%): 40.74. Floristic Quality Index: 24.86. No Species at Risk or Species of Conservation Concern plants observed. Carolina Spring Beauty (<i>Claytonia caroliniana</i>) and Running Strawberry-bush (<i>Euonymus obovatus</i>) were present. These species are regionally ranked as L3 and considered species of regional conservation concern.
Forest	<ul style="list-style-type: none"> FODM4-5 Located within a channel southwest of Midwest Road. 	<ul style="list-style-type: none"> Dry - Fresh Manitoba Maple Deciduous Forest. 	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> The canopy was dominated by Manitoba Maple (<i>Acer negundo</i>), Common Apple (<i>Malus pumila</i>), and Siberian Elm (<i>Ulmus pumila</i>). 	<ul style="list-style-type: none"> The shrub layer primarily consisted of younger Manitoba Maples and Siberian Elms, as well as Chokecherry and European Buckthorn. 	<ul style="list-style-type: none"> The ground layer consisted of Mugwort (<i>Artemisia vulgaris</i>), Dog-strangling Vine (<i>Vincetoxicum rossicum</i>), and Smooth Brome (<i>Bromus inermis</i>). 	<ul style="list-style-type: none"> Average Coefficient of Conservatism: 1.5. Average Coefficient of Wetness: 2.17. Non-native species (%): 68.97. Floristic Quality Index: 3.67. No Species at Risk, Species of Conservation Concern or locally rare plants observed.
Forest	<ul style="list-style-type: none"> FODM4-12 Located within a channel east of Nantucket Boulevard. 	<ul style="list-style-type: none"> Dry - Fresh Exotic Deciduous Forest. 	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> The canopy layer consisted of Weeping Willow (<i>Salix babylonica</i>), Manitoba Maple, Siberian Elm, and Common Apple. 	<ul style="list-style-type: none"> The shrub layer consisted of Honeysuckle species (<i>Lonicera sp.</i>) and European Buckthorn. 	<ul style="list-style-type: none"> The ground layer consisted of Dog-Strangling Vine, Avens species (<i>Geum sp.</i>), Reed-Canary Grass (<i>Phalaris arundinacea</i>). 	<ul style="list-style-type: none"> Average Coefficient of Conservatism: 1.63. Average Coefficient of Wetness: 1.67. Non-native species (%): 52.17. Floristic Quality Index: 4.88. No Species at Risk, Species of Conservation Concern or locally rare plants observed.
Cultural	<ul style="list-style-type: none"> CUH1-A Located within Jack Goodlad Park and the Scarborough Hydro Green Space. 	<ul style="list-style-type: none"> Treed Hedgerow. 	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> The hedgerow primarily consisted of planted Austrian Pine (<i>Pinus nigra</i>), Blue Spruce (<i>Picea pungens</i>), and Norway Maple (<i>Acer platanoides</i>). 	<ul style="list-style-type: none"> A sparse shrub layer in between the planted trees consisted of European Buckthorn, White Mulberry (<i>Morus alba</i>), and White Ash (<i>Fraxinus americana</i>). 	<ul style="list-style-type: none"> The ground layer consisted of Garlic Mustard (<i>Alliaria petiolata</i>), Motherwort (<i>Leonurus cardiaca</i>), and Dog-strangling Vine. 	<ul style="list-style-type: none"> Average Coefficient of Conservatism: 2.67. Average Coefficient of Wetness: 2.67. Non-native species (%): 68.42. Floristic Quality Index: 6.53. No Species at Risk, Species of Conservation Concern or locally rare plants observed.

Community	Ecological Land Classification Code and Location	Vegetation or Ecosite Name	Inclusion	Tree Canopy	Shrub Layer	Ground Layer	Floristic Assessments
Cultural	<ul style="list-style-type: none"> CUM1-1a Located adjacent to the Fieldstone Commons Care Community. 	<ul style="list-style-type: none"> Dry – Moist Old Field Meadow. 	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> The tree canopy was sparse but consisted primarily of Trembling Aspen (<i>Populus tremuloides</i>), Manitoba Maple, and Hawthorn species (<i>Crataegus sp.</i>). 	<ul style="list-style-type: none"> The shrub layer was sparse but primarily contained Manitoba Maple and White Ash. 	<ul style="list-style-type: none"> The ground layer was dominated by Kentucky Bluegrass (<i>Poa pratensis</i>), Dog-strangling Vine, and Goldenrod species (<i>Solidago sp.</i>). 	<ul style="list-style-type: none"> Average Coefficient of Conservatism: 1.33. Average Coefficient of Wetness: 2.95. Non-native species (%): 61.54. Floristic Quality Index: 3.53. No Species at Risk, Species of Conservation Concern or locally rare plants observed.
Cultural	<ul style="list-style-type: none"> CUM1-1b Located within Arsandco Park. 	<ul style="list-style-type: none"> Dry – Moist Old Field Meadow. 	<ul style="list-style-type: none"> Mineral Cultural Thicket (CUT1). 	<ul style="list-style-type: none"> The tree canopy was sparse but included White Pine (<i>Pinus strobus</i>) and Red Oak (<i>Quercus rubra</i>). 	<ul style="list-style-type: none"> The shrub layer was considered an inclusion that circled Arsandco Pond and included Red-osier (<i>Cornus sericea</i>) and Heart-leaved Willow (<i>Salix eriocephala</i>). 	<ul style="list-style-type: none"> The ground layer was dominated by Kentucky Bluegrass, Dog-strangling Vine, and Teasel (<i>Dipsacus fullonum</i>). 	<ul style="list-style-type: none"> Average Coefficient of Conservatism: 3. Average Coefficient of Wetness: 1.82. Non-native species (%): 42.86. Floristic Quality Index: 8.49. No Species at Risk, Species of Conservation Concern or locally rare plants observed.
Cultural	<ul style="list-style-type: none"> CUM1-1c Located within Jack Goodlad Park. 	<ul style="list-style-type: none"> Dry – Moist Old Field Meadow. 	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> The canopy layer was sparse, containing only White Pine. 	<ul style="list-style-type: none"> The shrub layer consisted of Common Apple, Eastern Redcedar (<i>Juniperus virginiana</i>), Sandbar Willow (<i>Salix exigua</i>), Red-osier, and European Buckthorn. 	<ul style="list-style-type: none"> The ground layer was dominated by Kentucky Bluegrass, Golden-fruited Sedge (<i>Carex aurea</i>), and Howell's Pussytoes (<i>Antennaria howellii</i>). 	<ul style="list-style-type: none"> Average Coefficient of Conservatism: 3. Average Coefficient of Wetness: 2.14. Non-native species (%): 40. Floristic Quality Index: 11.62. No Species at Risk or Species of Conservation Concern plants observed. Creeping Juniper (<i>Juniperus horizontalis</i>) was present. This species is regionally ranked as L3 and considered a species of regional conservation concern.
Cultural	<ul style="list-style-type: none"> CUM1-1d Located within Jack Goodlad Park. 	<ul style="list-style-type: none"> Dry – Moist Old Field Meadow. 	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> The tree canopy was sparse and short, consisting of Common Apple and White Ash. 	<ul style="list-style-type: none"> The shrub layer primarily consisted of European Buckthorn. 	<ul style="list-style-type: none"> The ground layer primarily consisted of Reed-canary Grass, Dog-strangling Vine, and Kentucky Bluegrass. 	<ul style="list-style-type: none"> Average Coefficient of Conservatism: 1. Average Coefficient of Wetness: 1.67. Non-native species (%): 57.14. Floristic Quality Index: 2.24. No Species at Risk, Species of Conservation Concern or locally rare plants observed.

Community	Ecological Land Classification Code and Location	Vegetation or Ecosite Name	Inclusion	Tree Canopy	Shrub Layer	Ground Layer	Floristic Assessments
Cultural	<ul style="list-style-type: none"> CUM1-1e Comprises the majority of the Scarborough Hydro Green Space. 	<ul style="list-style-type: none"> Dry – Moist Old Field Meadow. 	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> The tree canopy layer consisted of Austrian Pine, Siberian Elm, and Manitoba Maple. 	<ul style="list-style-type: none"> The shrub layer consisted of European Buckthorn and Black Elderberry (<i>Sambucus canadensis</i>). 	<ul style="list-style-type: none"> The ground layer primarily consisted of Kentucky Bluegrass, Smooth Brome, and Common Dandelion (<i>Taraxacum officinale</i>). 	<ul style="list-style-type: none"> Average Coefficient of Conservatism: 2.58. Average Coefficient of Wetness: 2.66. Non-native species (%): 60.29. Floristic Quality Index: 13.17. No Species at Risk or Species of Conservation Concern plants observed. Handsome Sedge (<i>Carex formosa</i>) was present. This species is regionally ranked as L2 and considered a species of regional conservation concern.
Cultural	<ul style="list-style-type: none"> CUT1-1 Located in various pockets along Lawrence Avenue E. 	<ul style="list-style-type: none"> Sumac Cultural Thicket. 	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> The tree canopy was sparse, containing only Trembling Aspen. 	<ul style="list-style-type: none"> The shrub layer primarily consisted of Staghorn Sumac (<i>Rhus typhina</i>) as well as Trembling Aspen. 	<ul style="list-style-type: none"> The ground layer consisted of Kentucky Bluegrass and Common Dandelion. 	<ul style="list-style-type: none"> Average Coefficient of Conservatism: 2.5. Average Coefficient of Wetness: 2.66. Non-native species (%): 40. Floristic Quality Index: 6.12. No Species at Risk, Species of Conservation Concern or locally rare plants observed.
Cultural	<ul style="list-style-type: none"> CUT1-A Located east of Nantucket Boulevard. 	<ul style="list-style-type: none"> Native Deciduous Sapling Regeneration Thicket. 	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> The tree canopy primarily consisted of Manitoba Maple and Siberian Elm, as well as Silver Maple (<i>Acer sa</i> Coefficient of Conservatism <i>harinum</i>) to a lesser extent. 	<ul style="list-style-type: none"> The community showed signs of being the result of a restoration planting project, containing several native young trees and shrubs such as White Pine, Silver Maple, Red-osier, and Common Ninebark (<i>Physocarpus opulifolius</i>) among others. 	<ul style="list-style-type: none"> The ground layer consisted primarily of Dog-strangling Vine, Goldenrod species, and Reed-canary Grass. 	<ul style="list-style-type: none"> Average Coefficient of Conservatism: 2.6. Average Coefficient of Wetness: 2.07. Non-native species (%): 57.58. Floristic Quality Index: 9.37. No Species at Risk or Species of Conservation Concern plants observed. Handsome Sedge was present. This species is regionally ranked as L2 and considered a species of regional conservation concern.
Cultural	<ul style="list-style-type: none"> CUW1a Located within a fenced off area adjacent to Arsandco Park. 	<ul style="list-style-type: none"> Mineral Cultural Woodland. 	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> This community was assessed from a fence-line dense with vegetation. What was visible of the tree canopy layer consisted of Manitoba Maple and Siberian Elm. 	<ul style="list-style-type: none"> This community was assessed from a fence-line dense with vegetation. What was visible of the shrub layer consisted of Honeysuckle species. 	<ul style="list-style-type: none"> This community was assessed from a fence-line dense with vegetation. What was visible of the ground layer consisted of Garlic Mustard, Dog-strangling Vine, and Avens species. 	<ul style="list-style-type: none"> Average Coefficient of Conservatism: 2.33. Average Coefficient of Wetness: 1.5. Non-native species (%): 54.55. Floristic Quality Index: 4.04. No Species at Risk, Species of Conservation Concern or locally rare plants observed.

Community	Ecological Land Classification Code and Location	Vegetation or Ecosite Name	Inclusion	Tree Canopy	Shrub Layer	Ground Layer	Floristic Assessments
Cultural	<ul style="list-style-type: none"> ■ CUW1b Located within a fenced off area north of Jack Goodlad Park adjacent to the Hydro One Scarborough Transmission Station. 	<ul style="list-style-type: none"> ■ Mineral Cultural Woodland. 	<ul style="list-style-type: none"> ■ Cattail Mineral Shallow Marsh (MAS2-1) consisting of European Reed (<i>Phragmites australis</i>) and Narrow-leaved Cattail (<i>Typha angustifolia</i>). 	<ul style="list-style-type: none"> ■ The tree canopy primarily consisted of Blue Spruce, Willow species (<i>Salix spp.</i>), and Norway Maple. 	<ul style="list-style-type: none"> ■ The shrub layer consisted of Red-osier and Willow species. 	<ul style="list-style-type: none"> ■ The ground layer consisted of Kentucky Bluegrass, Dog-strangling Vine, and Goldenrod species. 	<ul style="list-style-type: none"> ■ Average Coefficient of Conservatism: 0.67. ■ Average Coefficient of Wetness: 1.5. ■ Non-native species (%): 66.67. ■ Floristic Quality Index: 1.15. ■ No Species at Risk, Species of Conservation Concern or locally rare plants observed.
Marsh	<ul style="list-style-type: none"> ■ MAS2-1 Located within Arsandco Park. 	<ul style="list-style-type: none"> ■ Cattail Mineral Shallow Marsh. 	<ul style="list-style-type: none"> ■ None. 	<ul style="list-style-type: none"> ■ No tree canopy layer was present. 	<ul style="list-style-type: none"> ■ No shrub canopy layer was present. 	<ul style="list-style-type: none"> ■ The ground layer consisted of Narrow-leaved Cattail, European Reed, and Curly-leaf Pondweed (<i>Potamogeton crispus</i>). 	<ul style="list-style-type: none"> ■ Average Coefficient of Conservatism: 0. ■ Average Coefficient of Wetness: -4. ■ Non-native species (%): 100. ■ Floristic Quality Index: 0. ■ No Species at Risk, Species of Conservation Concern or locally rare plants observed.
Marsh	<ul style="list-style-type: none"> ■ MAS2-1b Located within a ditch in the green space adjacent to the Hydro One Scarborough Transmission Station. 	<ul style="list-style-type: none"> ■ Narrow-Leaved Cattail Mineral Shallow Marsh. 	<ul style="list-style-type: none"> ■ None. 	<ul style="list-style-type: none"> ■ No tree canopy layer was present. 	<ul style="list-style-type: none"> ■ No shrub canopy layer was present. 	<ul style="list-style-type: none"> ■ The ground layer consisted solely of Narrow-leaved Cattail and European Reed. 	<ul style="list-style-type: none"> ■ Average Coefficient of Conservatism: 0. ■ Average Coefficient of Wetness: -4.33. ■ Non-native species (%): 100. ■ Floristic Quality Index: 0. ■ No Species at Risk, Species of Conservation Concern or locally rare plants observed.
Swamp	<ul style="list-style-type: none"> ■ SWT2-2 Located within the green space adjacent to the Hydro One Scarborough Transmission Station. 	<ul style="list-style-type: none"> ■ Willow Mineral Thicket Swamp. 	<ul style="list-style-type: none"> ■ None. 	<ul style="list-style-type: none"> ■ The tree canopy consisted of Balsam Poplar (<i>Populus balsamifera</i>), Trembling Aspen, and Pussy Willow (<i>Salix discolor</i>). 	<ul style="list-style-type: none"> ■ The shrub layer primarily consisted of Sandbar Willow and Red-osier. 	<ul style="list-style-type: none"> ■ The ground layer consisted of Kentucky Bluegrass and Common Dandelion. 	<ul style="list-style-type: none"> ■ Average Coefficient of Conservatism: 2.18. ■ Average Coefficient of Wetness: 1.39. ■ Non-native species (%): 33.33. ■ Floristic Quality Index: 7.87. ■ No Species at Risk, Species of Conservation Concern or locally rare plants observed.
Swamp	<ul style="list-style-type: none"> ■ SWT2-5 Located within the green space adjacent to Jack Goodlad Park. 	<ul style="list-style-type: none"> ■ Red-osier Mineral Thicket Swamp. 	<ul style="list-style-type: none"> ■ None. 	<ul style="list-style-type: none"> ■ The tree canopy was sparse and solely contained a large Crack Willow (<i>Salix euxina</i>). 	<ul style="list-style-type: none"> ■ The shrub layer primarily consisted of Red-osier and Sandbar Willow. 	<ul style="list-style-type: none"> ■ The ground layer was sparse and contained Field Horsetail (<i>Equisetum arvense</i>), Avens species, and Narrow-leaved Cattail. 	<ul style="list-style-type: none"> ■ Average Coefficient of Conservatism: 2.71. ■ Average Coefficient of Wetness: 0.63. ■ Non-native species (%): 47.37. ■ Floristic Quality Index: 7.18. ■ No Species at Risk, Species of Conservation Concern or locally rare plants observed.

Community	Ecological Land Classification Code and Location	Vegetation or Ecosite Name	Inclusion	Tree Canopy	Shrub Layer	Ground Layer	Floristic Assessments
Aquatic	■ OAO1-T Located within Arsandco Park.	■ Turbid Open Aquatic (disturbed unvegetated).	■ None.	■ No tree canopy layer was present.	■ No shrub layer was present.	■ No ground layer was present.	■ N/A.
Delineated via Aerial Imagery	■ CUM Located east of the railway and west of Midwest Road behind an industrial building.	■ Cultural Meadow.	■ N/A.	■ N/A.	■ N/A.	■ N/A.	■ N/A.
Delineated via Aerial Imagery	■ CUT Located east of the railway, south of Zezel Way, and west of Midwest Road behind an industrial building.	■ Cultural Thicket.	■ N/A.	■ N/A.	■ N/A.	■ N/A.	■ N/A.
Delineated via Aerial Imagery	■ MAS Located within a fenced off area adjacent to Arsandco Park.	■ Shallow Marsh.	■ N/A.	■ N/A.	■ N/A.	■ N/A.	■ N/A.
Delineated via Aerial Imagery	■ SWD Located within a fenced off area adjacent to Arsandco Park.	■ Deciduous Swamp.	■ N/A.	■ N/A.	■ N/A.	■ N/A.	■ N/A.

Figure 3: Terrestrial Field Investigations

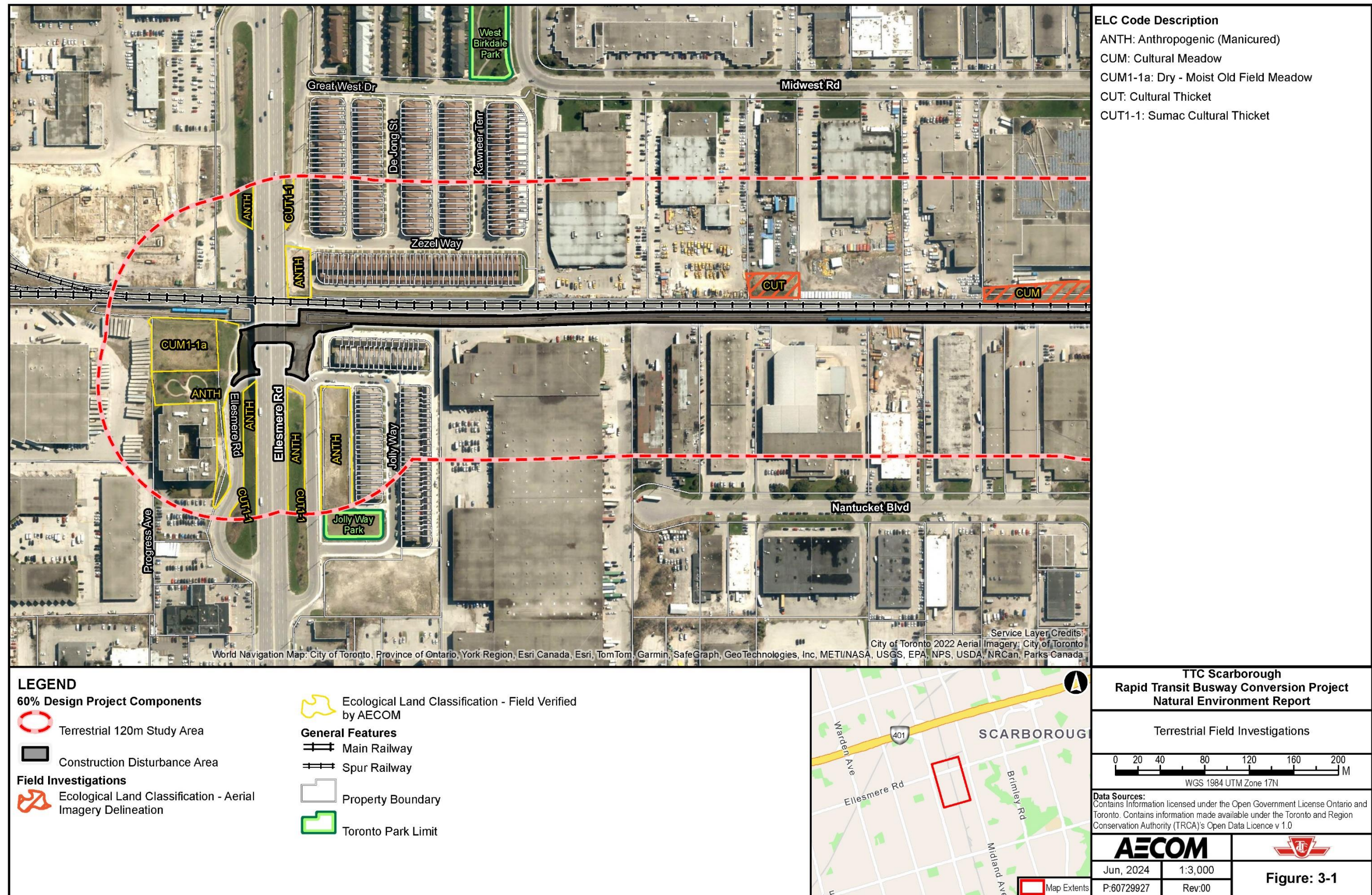


Figure 3: Terrestrial Field Investigations (continued)

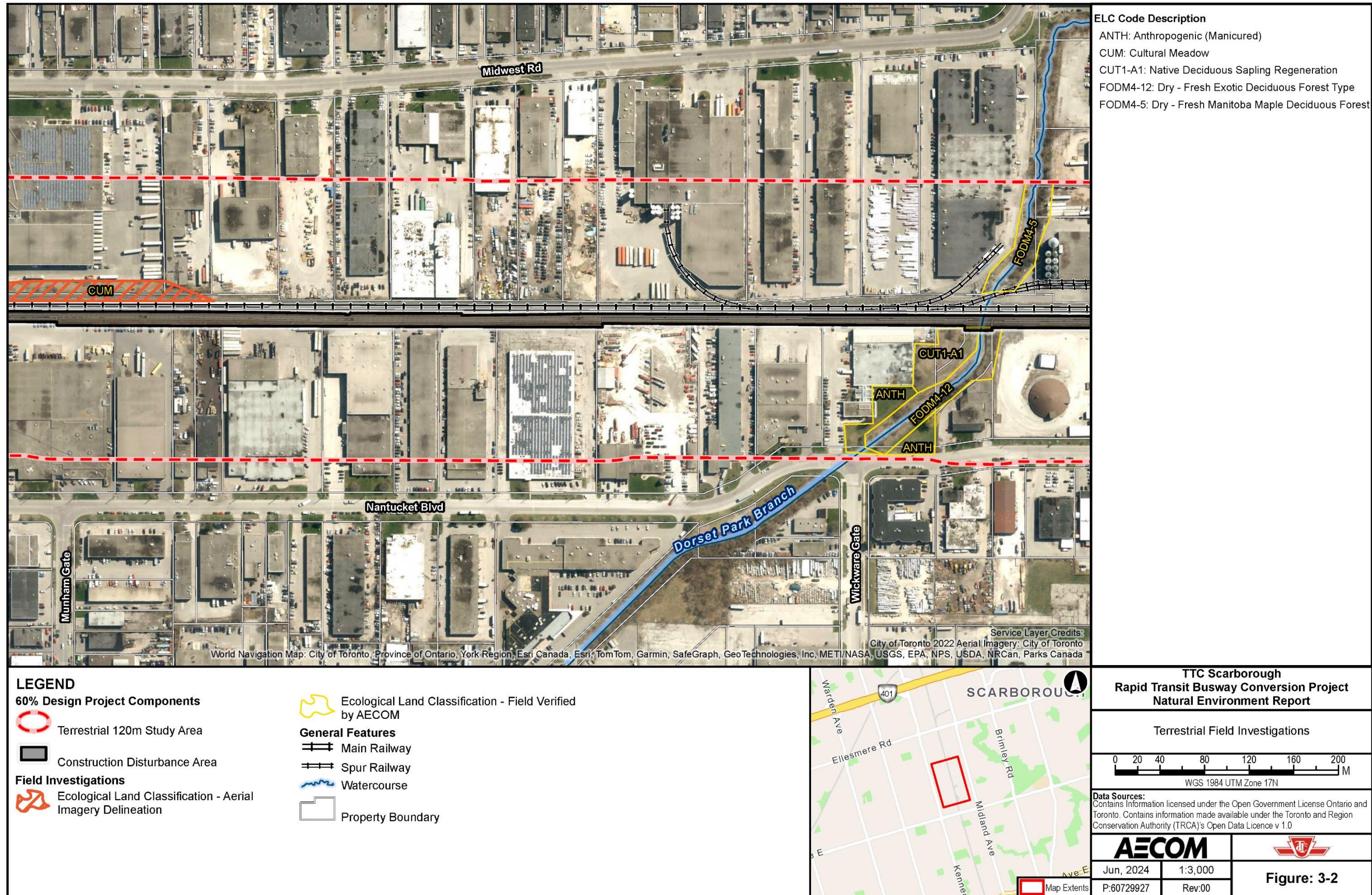
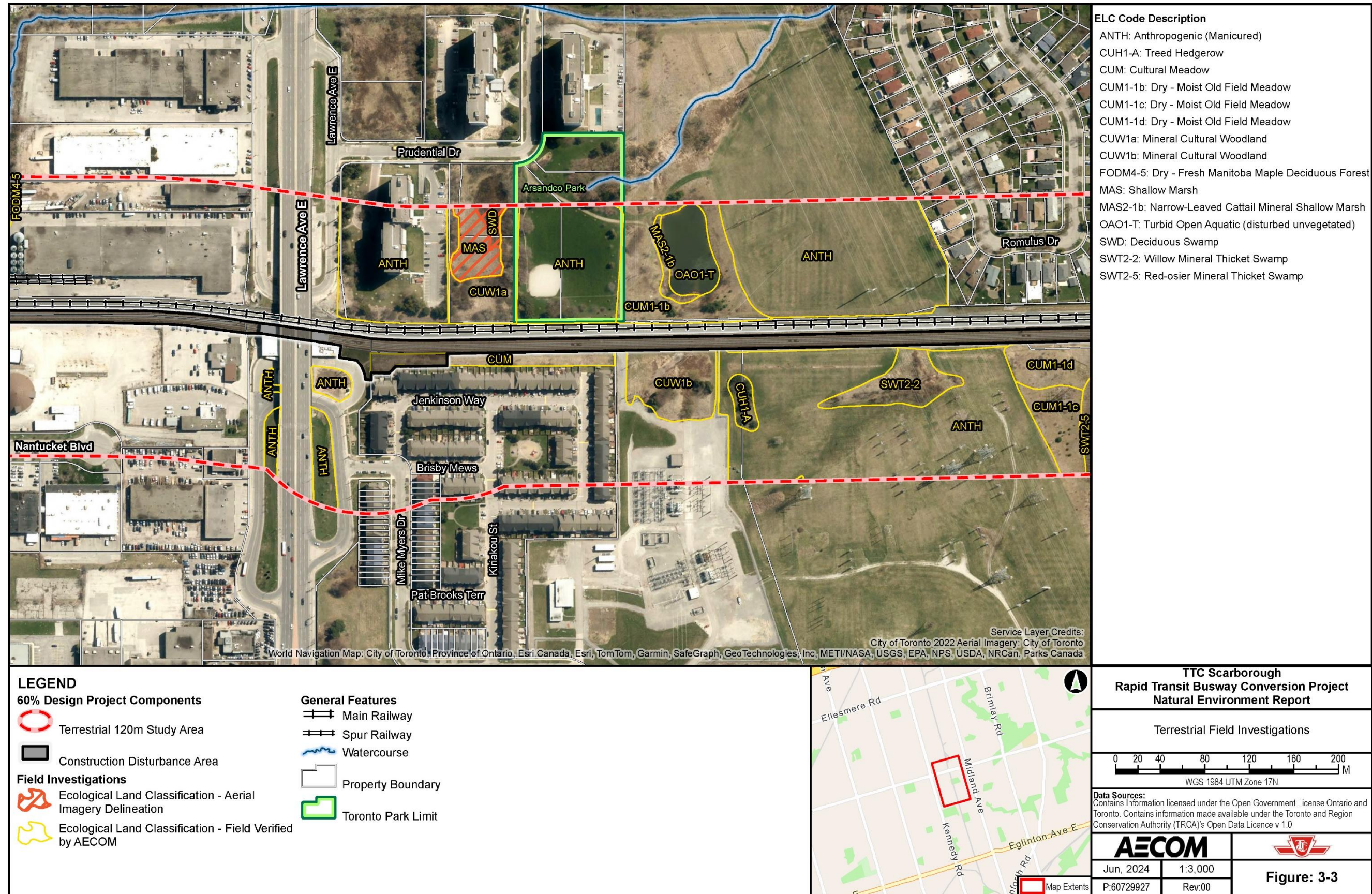


Figure 3: Terrestrial Field Investigations (continued)



ELC Code Description

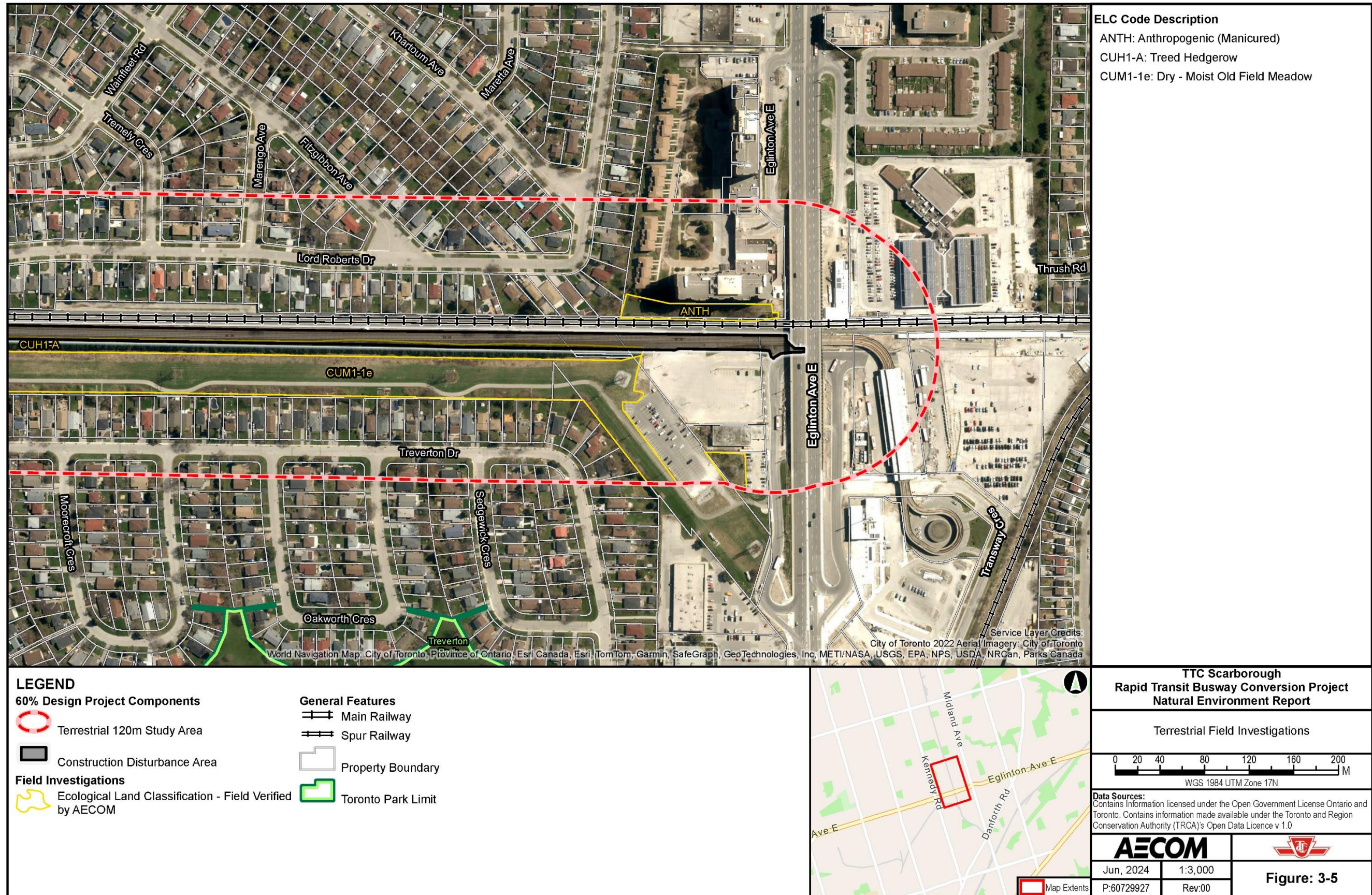
- ANTH: Anthropogenic (Manicured)
- CUH1-A: Treed Hedgerow
- CUM: Cultural Meadow
- CUM1-1b: Dry - Moist Old Field Meadow
- CUM1-1c: Dry - Moist Old Field Meadow
- CUM1-1d: Dry - Moist Old Field Meadow
- CUM1-1e: Dry - Moist Old Field Meadow
- CUW1a: Mineral Cultural Woodland
- CUW1b: Mineral Cultural Woodland
- FODM4-5: Dry - Fresh Manitoba Maple Deciduous Forest
- MAS: Shallow Marsh
- MAS2-1b: Narrow-Leaved Cattail Mineral Shallow Marsh
- OAO1-T: Turbid Open Aquatic (disturbed unvegetated)
- SWD: Deciduous Swamp
- SWT2-2: Willow Mineral Thicket Swamp
- SWT2-5: Red-osier Mineral Thicket Swamp

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Figure 3: Terrestrial Field Investigations (continued)



Figure 3: Terrestrial Field Investigations (continued)



4.5 Wildlife and Wildlife Habitat

During terrestrial and aquatic investigations, 32 observations of incidental wildlife were recorded. In total 24 bird species, six insect species, and two mammal species were observed. Most of these species are tolerant of urban disturbance and are common throughout the surrounding landscape. None of these incidentally observed species were considered Species at Risk or Species of Conservation Concern. According to the Toronto and Region Conservation Authority's Annual local occurrence and local rank update for 2017: terrestrial species and vegetation communities (2017) none of these species were considered regionally rare (L1-L3).

A total of 17 bird species protected under the Migratory Birds Convention Act were observed as indicated in **Table 4-3**. Although the Study Area has been anthropogenically disturbed and fragmented, existing vegetation still provided potential nesting opportunities for migratory birds. Isolated trees, shrubs, vegetation communities and anthropogenic structures (e.g., buildings and culverts) can provide nesting habitat for migratory birds protected under the Migratory Birds Convention Act. No evidence of Schedule 1 Migratory Birds Convention Act -protected birds, such as Pileated Woodpecker (*Dryocopus pileatus*), were observed in the Study Area. Additionally, treed habitats in the Study Area were unlikely to provide suitable habitat for Pileated Woodpecker as communities were small, fragmented and did not have an abundance of dead or decaying trees for foraging. Given the lack of suitable habitat, absence during field investigations and lack of species evidence (i.e., foraging cavities) it is unlikely that Pileated Woodpeckers were nesting in the Study Area.

All incidental wildlife species observed during field investigations are presented in **Table 4-3**.

Table 4-3: Incidental Wildlife Observations

Taxon	Common Name	Scientific Name	S-Rank ¹	Committee on the Status of Endangered Wildlife in Canada Status ²	Species at Risk Act Status ²	Endangered Species Act Status ³	Protected under Migratory Birds Convention Act (Yes/No)
Bird	American Robin	<i>Turdus migratorius</i>	S5B	-	-	-	Yes
Bird	Baltimore Oriole	<i>Icterus galbula</i>	S4B	-	-	-	Yes
Bird	Belted Kingfisher	<i>Megaceryle alcyon</i>	S5B,S4N	-	-	-	No
Bird	Black-throated Green Warbler	<i>Setophaga virens</i>	S5B	-	-	-	Yes
Bird	Blue Jay	<i>Cyanocitta cristata</i>	S5	-	-	-	No
Bird	Canada Goose	<i>Branta canadensis</i>	S5	-	-	-	Yes
Bird	Common Grackle	<i>Quiscalus quiscula</i>	S5	-	-	-	No
Bird	Cooper's Hawk	<i>Accipiter cooperii</i>	S4	Not at Risk	-	Not at Risk	No
Bird	Downy Woodpecker	<i>Dryobates pubescens</i>	S5	-	-	-	Yes
Bird	Hairy Woodpecker	<i>Dryobates villosus</i>	S5	-	-	-	Yes
Bird	House Sparrow	<i>Passer domesticus</i>	SNA	-	-	-	No
Bird	Killdeer	<i>Charadrius vociferus</i>	S5B,S5N	-	-	-	Yes
Bird	Mallard	<i>Anas platyrhynchos</i>	S5	-	-	-	Yes
Bird	Mourning Dove	<i>Zenaidura macroura</i>	S5	-	-	-	Yes
Bird	Northern Cardinal	<i>Cardinalis cardinalis</i>	S5	-	-	-	Yes
Bird	Northern Parula	<i>Setophaga americana</i>	S5B	-	-	-	Yes
Bird	Red-breasted Nuthatch	<i>Sitta canadensis</i>	S5	-	-	-	Yes
Bird	Red-tailed Hawk	<i>Buteo jamaicensis</i>	S5	Not at Risk	-	Not at Risk	No
Bird	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	S4	-	-	-	No
Bird	Ring-billed Gull	<i>Larus delawarensis</i>	S5	-	-	-	Yes
Bird	Song Sparrow	<i>Melospiza melodia</i>	S5B	-	-	-	Yes
Bird	Tennessee Warbler	<i>Leiothlypis peregrina</i>	S5B	-	-	-	Yes
Bird	White-throated Sparrow	<i>Zonotrichia albicollis</i>	S5	-	-	-	Yes
Bird	Yellow Warbler	<i>Setophaga petechia</i>	S5B	-	-	-	Yes
Insect	American Lady	<i>Vanessa virginiensis</i>	S5	-	-	-	N/A
Insect	Black Swallowtail	<i>Papilio polyxenes</i>	S5	-	-	-	N/A
Insect	Cabbage White	<i>Pieris rapae</i>	SNA	-	-	-	N/A
Insect	Mourning Cloak	<i>Nymphalis antiopa</i>	S5	-	-	-	N/A
Insect	Red Admiral	<i>Vanessa atlanta</i>	S5B	-	-	-	N/A
Insect	Two-spotted Bumblebee	<i>Bombus bimaculatus</i>	S5	-	-	-	N/A
Mammal	Coyote	<i>Canis latrans</i>	S5	-	-	-	N/A
Mammal	Eastern Gray Squirrel	<i>Sciurus carolinensis</i>	S5	-	-	-	N/A

¹**S rank:** The natural heritage provincial ranking system (provincial S-rank) is used by the Ministry of Natural Resources and Forestry Natural Heritage Information Centre to set protection priorities for rare species and natural communities. The following status definitions were taken from NatureServe Explorer's (2023) National and Subnational Conservation Status Definitions available <https://explorer.natureserve.org/AboutTheData/DataTypes/ConservationStatusCategories>:

S4 – Apparently Secure — Uncommon but not rare; some cause for long-term concern due to declines or other factors.

S5 – Secure — Common, widespread, and abundant in the nation or state/province.

SNA – Not Applicable — A conservation status rank is not applicable because the species is not a suitable target for conservation activities.

S#S# – Range Rank — A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).

²**Species at Risk Act Status:** The Species at Risk Act protects Species at Risk designated as Endangered, Threatened and Extirpated listed under Schedule 1, including their habitats on federal land. Schedule 1 of Species at Risk Act is the official list of wildlife species at risk in Canada and includes species listed as Extirpated, Endangered, Threatened and of Special Concern. Once a species is listed on Schedule 1, they receive protection and recovery measures that are required to be developed and implemented under Species at Risk Act. Species that were designated at risk by Committee on the Status of Endangered Wildlife in Canada before Species at Risk Act need to be reassessed based on the new criteria of the Act before they can be listed under Schedule 1. These species that are waiting to be listed under Schedule 1 do not receive official protection under Species at Risk Act. Once the species on other schedules (2 and 3) have been reassessed, the other schedules are eliminated and the species is either listed under Schedule 1 or is not listed under the Act. The following are definitions of the Species at Risk Act status rankings assigned to each species in the table above:

Not at Risk: These species have either been assessed by Committee on the Status of Endangered Wildlife in Canada as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under Species at Risk Act.

³**Endangered Species Act Status:** The Endangered Species Act 1998 protects species listed as Threatened and Endangered on the Species at Risk List on provincial and private land. The following are the categories of at risk:

Not at Risk: A species that has been evaluated and found to be not at risk.

4.6 Significant Wildlife Habitat

Significant Wildlife Habitat within the Study Area was limited due to the presence of anthropogenic influences (i.e., commercial and properties, recreational areas). As mentioned in **Section 4.4** the Study Area consisted of urban woodlots, cultural meadows adjacent to City parkland, narrow strips of vegetation along infrastructure and riparian vegetation along an urban ravine. The following candidate Significant Wildlife Habitat were identified within the Study Area:

■ Seasonal Concentration Areas

- Bat Maternity Colonies within Dry - Fresh Sugar Maple Deciduous Forest (FOD5-1), Dry - Fresh Manitoba Maple Deciduous Forest (FODM4-5), Dry - Fresh Exotic Deciduous Forest (FODM4-12) and Deciduous Swamp (SWD) communities.

■ Specialized Wildlife Habitat

- Turtle nesting area provided by the CUM1-1b and adjacent gravel paths next to the Arsandco Park stormwater management pond. Portions of the CUM1-1b community just north of the stormwater management pond had exposed mineral soil that may be suitable.
- Amphibian breeding habitat (wetlands) provided by the Arsandco Park stormwater management pond (OAO1-T).

■ Habitat for Species of Conservation Concern (refer to **Appendix C** for a detailed Species of Conservation Concern Habitat Screening) including:

- Barn Swallow (*Hirundo rustica*) on buildings.
- Common Nighthawk (*Chordeiles minor*) on flat-topped buildings.
- Peregrine Falcon (*Falco peregrinus*) nest habitat on tall buildings.
- Wood Thrush (*Hylocichla mustelina*) within the Dry-Fresh Sugar Maple Deciduous Forest (FOD5-1).
- Eastern Wood-pewee (*Contopus virens*) within treed communities.
- Monarch (*Danaus plexippus*) within the Old-field Mineral Cultural Meadow (CUM1-1e).
- Snapping Turtle (*Chelydra serpentina*) within the Turbid Open Aquatic (OAO1-T) and Cattail Mineral Shallow Marsh (MAS2-1b).
- Meske's Underwing (*Catocala meskei*) within the Willow Mineral Thicket Swamp (SWT2-2).

Of these, Bat Maternity Colonies, habitat for Eastern Wood-pewee and habitat for Monarch were the only candidate Significant Wildlife Habitat to overlap with the Construction Disturbance Area. No Significant Wildlife Habitat was confirmed during field investigations as targeted surveys were not performed and therefore remain candidate.

4.7 Species at Risk Habitat Screening

The 2020 Addendum identified Kentucky Coffee-tree (*Gymnocladus dioicus*) and Butternut (*Juglans cinerea*) within the Gatineau Hydro Corridor Trail. However, these species were located outside of the Study Area for this Project. Furthermore, Kentucky Coffee-tree is no longer considered Species at Risk within Toronto area. In January 2023, Kentucky Coffee-tree was reclassified as Threatened only in its native Ontario range, which includes Elgin, Essex, Lambton, Middlesex, Norfolk and Oxford Counties and in the Municipality of Chatham-Kent. In all other jurisdictions this species is not classified as Species at Risk or afforded protection under the Endangered Species Act. As such, Kentucky Coffee-tree was not included in the Species at Risk habitat screening for this Project.

The Species at Risk habitat assessment is presented in **Appendix C**. Multiple candidate habitats for Species at Risk were identified within the Study Area. Of the 14 Species at Risk records identified through the background review, no Species at Risk were determined to have a high potential to occur in the Study Area. A total of eight Species at Risk were determined to have a medium potential to occur within the Study Area. The remaining Species at Risk outlined in **Appendix C** were determined to have a low potential to occur within the Study Area due to a lack of suitable habitat.

The following Species at Risk were determined to have a medium potential (i.e., candidate habitat) to occur within the Study Area:

- **Chimney Swift (*Chaetura pelagica*)**
Chimney Swift is designated as Threatened under the Endangered Species Act. Buildings within the Study Area may contain suitable chimneys for nesting.
- **Red-headed Woodpecker (*Melanerpes erythrocephalus*)**
While no individuals were identified during field investigations, species-specific surveys were not conducted and the entirety of the Study Area was not searched due to access limitations. Individuals of this species may be present in treed communities within the Study Area. Potential nesting trees

within the Construction Disturbance Area were not observed during field investigations.

■ **Bat Species at Risk: Eastern Small-footed Myotis (*Myotis leibii*), Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*) and Tri-coloured Bat (*Perimyotis subflavus*)**

Bat Species at Risk are designated as Endangered under the Endangered Species Act. Candidate habitat for bat Species at Risk was identified within the Dry - Fresh Sugar Maple Deciduous Forest (FOD5-1), Dry - Fresh Manitoba Maple Deciduous Forest (FODM4-5), Dry - Fresh Exotic Deciduous Forest (FODM4-12), Deciduous Swamp (SWD), and the Mineral Cultural Woodland (CUW1) communities. During field investigations, AECOM ecologists incidentally observed one tree that met the criteria for best candidate roost trees according to the Ministry of Environment, Conservation, and Parks's *Maternity Roost Surveys guidelines* (2022). This potential roost tree with a suitable cavity was identified within the FOD5-1. The potential roost tree is shown in the photolog provided in **Appendix A** as well as mapped on **Figure 3**.

■ **Butternut (*Juglans cinerea*)**

While no individuals were identified during field investigations, the entirety of the Study Area could not be searched due to access limitations. This species was not identified within the Construction Disturbance Area, though individuals of this species may be present in treed communities within the Study Area.

■ **Black Ash (*Fraxinus nigra*)**

While no individuals were identified during field investigations, the entirety of the Study Area could not be searched due to access limitations. This species was not identified within the Construction Disturbance Area, though individuals of these species may be present within the Deciduous Swamp (SWD) within the Study Area.

Of the candidate Species at Risk habitat identified, only a small portion of candidate bat Species at Risk habitat overlaps with Construction Disturbance Area. The remaining candidate habitat for Species at Risk were located outside of the Construction Disturbance Area.

5. Proposed Project Works

As mentioned in **Section 1.1**, the Toronto Transit Commission is advancing the detailed design of Phase 2 of the Project, which addresses the busway routing. The Phase 2 Project components are summarized below.

- Creation of a dedicated busway between the Ellesmere and Kennedy stations. The busway route is located along a designated stretch between Kennedy Road and Midland Avenue, where the decommissioned Line 3 Scarborough Rapid Transit and right-of-way currently exist.
- The construction of three stops will serve the dedicated busway and include accessible bus platforms, bus shelters, benches, pedestrian railings and sidewalks. The three stops include:
 - Ellesmere is the northernmost stop along the busway corridor. Buses will be routed east-west from the Ellesmere Stop to Scarborough Centre via Ellesmere Road, Brimley Road, and Triton Road.
 - Lawrence East is a stop on the north-south segment of the busway. The Stop location is about 500 meters north of the hydro corridor and Meadoway Corridor Trail. Stop access is provided on the west side of the busway corridor and a commuter parking lot is available to the east. The existing station building will be closed to the public.
 - Tara Avenue will be a new stop on the busway corridor. The stop will be constructed on the west side of the busway corridor. An accessible pedestrian sidewalk will also be constructed on the west side of the busway corridor and connect with Mooregate Avenue and the Gatineau Hydro Corridor Trail.
- The busway corridor will continue south of the Tara Stop, and an off-shoot access will connect the busway with the Eglinton Avenue West Service Road, and Kennedy Station. The Kennedy Station area provides transit access to the Stouffville GO Rail Line, Toronto Transit Commission Subway Line 2, and the future eastern terminus of Line 5 Eglinton Light Rail Transit.

No in-water works are proposed on the Southwest Highland Creek crossing under the existing right-of-way. The current culverts will accommodate the busway; no culvert extensions will be required.

6. Potential Effects Assessment

In order to reduce any damages or disturbances to existing Natural Heritage Features caused by the Project, potential environmental impacts from construction processes were identified. Potential effects on the natural environment are identified and discussed below.

6.1 Existing Impacts

The Study Area contained vegetation communities within an urbanized landscape largely impacted by anthropogenic disturbances. In order to assess the potential impacts of the Project, it is necessary to consider existing impacts that are present within the Study Area prior to the initiation of the work. Existing impacts should be documented to determine whether, following site alteration, impacts are a result of the work or a result of previous activities or events on the lands.

Based on AECOM's site investigations, the following existing impacts were identified within the Study Area:

- **Fragmentation of Vegetation and Habitat**

Natural Heritage features within the Study Area and surrounding landscape have been fragmented and influenced by the construction of adjacent anthropogenic structures such as the existing railway, residential areas, and major roads. Despite this, delineated vegetation communities can still provide marginal habitat and movement corridors for urban wildlife. The Construction Disturbance Area, however, occurs mostly along the existing railway and right-of-way.

- **Introduction of Horticultural and Invasive Plants**

Vegetation communities adjacent to urban areas are subject to the gradual invasion of weedy and horticultural species introduced from residential gardens, vehicle traffic and by natural dispersal. A heavy presence of non-native and invasive vegetation species such as Manitoba Maple, Dog-strangling Vine, Garlic Mustard, and European Buckthorn were recorded in several of the delineated vegetation communities.

- **Transportation Infrastructure**

The Construction Disturbance Area is located within the rail right-of-way and is near major roads. Road salt, oil and gas, and other deleterious substances from the railway may enter surrounding vegetation communities via runoff. Traffic noise levels from major roads and the railway are evident throughout

the Study Area. This noise may cause a reduction in the species abundance or richness of birds and other wildlife inhabiting natural areas. Some species may have acclimated to the noises generated by human activities.

■ **Presence of Garbage**

Garbage was observed within the majority of delineated vegetation communities. In particular, the Dry-Fresh Manitoba Maple Deciduous Forest (FODM4-5) and Dry-Fresh Exotic Deciduous Forest (FODM4-12) communities present along the Dorset Park Branch of Southwest Highland Creek contained notable quantities of garbage in piles throughout their length. These piles were likely discarded by adjacent manufacturing depots. The assessed reaches of the Dorset Park Branch of Southwest Highland Creek were filled with substantial garbage as well. Some of the garbage may have been carried from upstream sources during high flows, but the vast majority was dumped from the top of the banks. This garbage can entangle wildlife, prevent fish migration, and contaminate soils and the watercourse.

■ **Soil and Water Contamination**

The Dorset Park Branch of Southwest Highland Creek flows between mechanic shops and auto wreckers on the south side of the Toronto Transit Commission rail. Vehicle parts were observed in the upstream reach of the assessed watercourse. An oil sheen was observed across the top of the water and in the exposed substrate downstream of the rail crossing. Dumping and runoff from the adjacent businesses may have contributed to the contamination of the watercourse and surrounding soils with spare parts, petrochemicals, and other contaminants.

■ **Erosion and Sedimentation**

Where the Dorset Park Branch of Southwest Highland Creek banks were not protected by concrete the banks were steep and eroding. Increases in sediment input to watercourses can negatively impact aquatic habitat and water quality. Impairments to either habitat or water quality may impact the overall health of aquatic organisms and systems.

■ **Barriers to Fish Passage**

Barriers to fish passage were identified in the upstream and downstream reaches of the Dorset Park Branch of Southwest Highland Creek (**Figure 2**). Under high-flow conditions, these impediments may be submerged, though most fish species identified within the Study Area (see **Table 4-1**) may not tolerate the water velocity to travel upstream.

6.2 Potential Impacts of the Proposed Works

The potential environmental impacts associated with the Project relate primarily to construction activities. Many of the potential impacts are commonly encountered with construction, and associated standard mitigation measures are available to minimize or avoid potential impacts. These potential impacts can be prevented or negated if appropriate measures are implemented. If they are not managed and prevented through best management practices and avoidance or mitigation, they may lead to long-term impacts and significant damage to both ecological features and their functions. The following sections outline potential environmental impacts based on the Construction Disturbance Area for the 60% detailed design available at the time of preparation of this report (refer to **Figures 1-3**).

6.2.1 Direct Potential Impacts

Potential direct impacts to existing Natural Heritage Features and functions are associated with construction activities (e.g., excavation activities, machinery use) such as vegetation/habitat removal.

6.2.1.1 Construction Phase

Direct long-term environmental effects are defined as those impacts that result in the immediate loss of features or functions due to the implementation of the subject works and that have an impact over a long period of time. An example of a direct impact would be the removal of trees or other vegetation in order to clear land for a development. The potential long-term impacts associated with the undertaking include the following:

- **Loss and Damage of Vegetation and Ecological Land Classification Communities, including within Designated Natural Areas**

Approximately 0.394 hectare of vegetation communities are anticipated to be removed. This represents only 5.58% of the vegetation communities within the Study Area that will be affected by removals, which is minimal as most of the proposed works are set to occur within the existing right-of-way and anthropogenic areas (i.e., mowed lawn, paved areas). Only 0.003 hectares of vegetation removal is anticipated in the Native Deciduous Sapling Regeneration Thicket (CUT1-A1), which is a part of the City's Natural Heritage System. The CUT1-A1 community was mostly comprised of invasive plant species (i.e., Manitoba Maple, Siberian Elm, Dog-strangling Vine) and the small amount of vegetation removal will be limited to disturbed edge vegetation. Where minimal vegetation removal may be required, this will be largely within meadow and hedgerow communities and consist of disturbed

edge vegetation which occur within and along the right-of-way. Additionally, connectivity between communities is not anticipated to be impacted as the Construction Disturbance Area largely occurs within the right-of-way and existing railway. The Tara Avenue and Lawrence Avenue East stops are proposed just outside of the existing right-of-way where meadow communities were delineated. However, the majority of the meadow communities will not be impacted and vegetation removal for the stops will occur within disturbed edge vegetation located adjacent to existing infrastructure. Impacts to connectivity are considered negligible given majority of the work will be along the existing right-of-way and meadow communities already exist as fragmented, narrow strips along existing infrastructure. Impacts to vegetation communities are summarized in **Table 6-1** below.

Table 6-1: Summary of Impacts to Vegetation Communities within the Study Area

Ecological Land Classification Vegetation Code	Ecological Land Classification Vegetation Code Description	Total Area of Ecological Land Classification Community (hectares) within Study Area	Permanent Impacted Area (hectares)	Percentage of Impacted Area (%)
CUH1-A	Treed Hedgerow	1.095	0.166	15.16
CUM	Cultural Meadow	0.273	0.088	32.23
CUM1-1d	Dry - Moist Old Field Meadow	1.781	0.133	7.47
CUM1-1e	Dry - Moist Old Field Meadow	3.361	0.001	0.03
CUT1-A1	Native Deciduous Sapling Regeneration Thicket	0.215	0.003	1.39
FODM4-12	Dry - Fresh Exotic Deciduous Forest Type	0.338	0.003	0.89
Total	-	7.063	0.394	5.58

■ **Loss and Damage of City of Toronto Trees**

Removal or injury of trees are anticipated in the Construction Disturbance Area. A separate arborist report should be produced to identify all trees within the Construction Disturbance Area including those that require removal or preservation, or trees that may be injured. The report should also identify required permitting and provide tree protection, mitigation, and compensation measures will also be described in detail in accordance with the City of

Toronto's Tree Protection By-laws. Trees in the Construction Disturbance Area receive protection under the following City by-laws:

- *Street Tree By-Law* (Municipal Code, Chapter 813, Article II) protects all trees situated on City streets.
- *Private Tree By-Law* (Municipal Code, Chapter 813, Article III) protects trees with a diameter of 30 cm or more and trees of any diameter that were planted as a condition of a permit issued under this by-law or site plan agreement.
- *Ravine and Natural Feature Protection By-Law* (Municipal Code, Chapter 658) protects all trees in these designated areas.
- *Parks By-Law* (Municipal Code, Chapter 608, Article VII) protects all trees in City-owned parkland.

■ **Loss of Candidate Significant Wildlife Habitat, including Habitat for Species of Conservation Concern**

Approximately 0.003 ha of candidate Eastern Wood-pewee habitat and 0.001 ha of Monarch habitat will be removed. This represents only a 0.89% loss of candidate Eastern Wood-pewee habitat and only a 0.03% loss of candidate Monarch habitat within the Study Area. These impacts are anticipated to be negligible given treed and meadow communities will largely remain intact in the Study Area. The form and function of candidate Significant Wildlife Habitat is not anticipated to be impaired or eliminated. The small amount of vegetation removal will occur along and adjacent to the existing right-of-way, which is already subject to anthropogenic disturbances. No impacts are anticipated to the remaining candidate Significant Wildlife Habitat (outlined in **Section 4.6**) as they do not overlap with the Construction Disturbance Area.

■ **Loss of Candidate Significant Wildlife Habitat for Bat Maternity Colonies and Candidate Habitat for Bat Species at Risk**

Approximately 0.003 hectares of the Dry - Fresh Exotic Deciduous Forest Type (FODM4-12) are anticipated to be removed for the proposed works. This represents approximately 0.89% of the FODM4-12 community within the Study Area. Impacts are considered negligible given that the majority of the FODM4-12 will remain intact and the remaining treed communities in the Study Area won't be impacted. Furthermore, the small amount of vegetation removal proposed within the FODM4-12 is limited to disturbed edge habitat that occurs along the existing right-of-way. No potential roost trees will be removed within treed habitat. The very small amount of vegetation removal in the FODM4-12 is not anticipated to impair or eliminate the form and function of the remaining bat habitat.

- **Loss of Candidate Habitat for Chimney Swift**

No impacts to candidate Chimney Swift habitat are anticipated as no buildings with potentially suitable chimneys will be demolished or altered as part of the proposed works.

- **Loss of Candidate Habitat for Red-Headed Woodpecker**

No impacts are anticipated as no potential nest trees were observed in the Construction Disturbance Area.

- **Loss of Tree Species at Risk and Candidate Habitat**

No impacts to Butternut or Black Ash anticipated as this species did not occur in the Construction Disturbance Area.

6.2.1.2 Operational Phase

There are no direct potential impacts anticipated during the operational phase, as all the direct impacts would have occurred during the construction phase (e.g., removal of habitat).

6.2.2 Indirect Potential Impacts

Indirect impacts associated with planning and engineering are not immediately caused by the design (e.g., placement of Project components) but may result in an effect on the natural environment through one or more intervening variables.

6.2.2.1 Construction Phase

- ◆ **Indirect Loss and/or Damage to Vegetation Communities**

The possibility of incidental intrusion into the adjacent vegetation communities surrounding the vegetation removal areas may occur during construction. This may result in damage (e.g., broken limbs and damage to trunks) to trees and shrubs within adjacent Natural Heritage Features which provide candidate habitat Significant Wildlife Habitat and potential Species at Risk habitat as outlined in **Section 4.6** and **Section 4.7**. Additionally, machinery use adjacent to Natural Heritage Features can result in soil compaction and trampling of herbaceous vegetation. These impacts can limit a plant's ability to grow and absorb nutrients and water. These impacts can typically be mitigated for with the installation of tree protection fencing along the limits of work to exclude machinery and construction personnel.

- ◆ **Introduction or Spread of Invasive Species**

As mentioned in **Section 4.4.2**, present vegetation communities have already been anthropogenically influenced. A total of 73 of the 155 plants (47%) recorded within

the Study Area during field investigations are non-native, including highly invasive species such as Garlic Mustard, Dog-strangling Vine, and European Buckthorn. Impacts are minimal given that many invasive species are already present. Vegetation clearing and grubbing or grading and movement of construction equipment may perpetuate the establishment of invasive species in new areas and further spread in already established areas if control measures are not implemented.

◆ **Sediment and Erosion**

Clearing and grading the land for construction will require vegetation removal. This will likely result in the disturbance and exposure of soils which can result in sediment runoff discharging into nearby aquatic and terrestrial communities and an increase in dust. Deposition of sediment and dust can bury roots and herbaceous vegetation, resulting in reduced health of the trees. It can also enter the watercourse and suffocate fish and their eggs. In order to mitigate these impacts, sediment and erosion control measures including silt fencing and dust suppressants, should be implemented and maintained through construction.

◆ **Soil and Water Contamination**

The use of machinery and vehicles on site could result in spills or leaks of oil, gasoline, and other fluids that could enter the surrounding natural communities. These impacts can be limited and even avoided with proper machinery inspections and maintenance, as well as by establishing areas away from natural features that are dedicated to re-fuelling and storing machinery. It is recommended that the refuelling of any machinery is completed at least 30 metres away from a watercourse or wetland to help prevent deleterious substances from entering the watercourse.

◆ **Disturbance to Wildlife**

Construction activities within the Construction Disturbance Area can potentially disturb wildlife (e.g., birds, snakes, and turtles) within adjacent natural features. Construction within the active season may result in wildlife collisions with construction equipment or disruption of life cycle processes (e.g., nesting, hibernating, etc.). During construction, nesting Snapping Turtles may be attracted to recently disturbed soils and exposed stockpiles to lay their eggs. Without exclusion fencing or proper stockpile management, this can lead to adult Snapping Turtle and Snapping Turtle egg mortality. Noise and vibrations from construction activities are anticipated to be temporary and are not anticipated to substantially increase from daily existing road and railway use. A certain degree of disturbance can be avoided by restricting construction activities to certain times of the day and outside of breeding periods for any bird species identified within the Study Area.

- ◆ **Disturbance or displacement of Migratory Birds Convention Act-protected Birds, Species of Conservation Concern Birds and Species at Risk Birds as well as destruction of their nests**

Vegetation communities provide breeding habitat and movement corridors for a variety of wildlife, including Species at Risk, Species of Conservation Concern and/or migratory birds protected under the Migratory Birds Convention Act. Furthermore, migratory and/or Species at Risk birds may use manmade structures (e.g., bridges and buildings) for nesting. Vegetation (i.e., trees, shrubs and ground cover) removal or structure demolition/rehabilitation has the potential to destroy migratory bird nests and eggs, which are protected under the Migratory Birds Convention Act, if conducted during the overall bird nesting period of **April 1 to August 31**. No impacts to Schedule 1 Migratory Birds Convention Act -protected species are anticipated as no individuals or evidence of individuals (i.e., nests, foraging cavities) were observed within the Study Area.

With the implementation of the mitigation recommendations outlined in **Section 6.3** below, the above listed effects will be avoided or mitigated during the construction phase.

6.2.2.2 Operational Phase

- ◆ **Wildlife Road Mortality**

Converting the decommissioned Line 3 Scarborough Rapid Transit into a dedicated busway is anticipated to increase wildlife road mortality. The decommissioned Line 3 Scarborough Rapid Transit will be paved so that buses can run regularly along the busway and widened at bus platform locations to allow passengers to board and alight. This increase in road traffic and wider area for wildlife to cross is anticipated to increase wildlife vehicle collisions.

- ◆ **Effects on Water Quality**

Anticipated indirect potential effects associated with the long-term operation of the busway may include increased inputs of road salt and other deleterious substances in nearby natural heritage features such as the Southwest Highland Creek. However, impacts are not anticipated to increase from baseline conditions given busway is located in a highly urbanized area. As stated in **Section 6.1** however, nearby natural heritage features are already heavily subjected to road salt, oil and gas, sediment, excess nutrients and other deleterious substances from existing infrastructure.

- ◆ **Change in Hydrology, Drainage and Water Quantity**

Increased impervious surfaces as result of the new paved bus stops can indirectly affect the hydrology, drainage and water quantity of nearby natural features.

However, the bus stops are not anticipated to change existing flow inputs into nearby natural features according to a drainage study completed for this Project, which is provided under a separate cover titled “Busway Conversion Natural Transit Project Assessment Process Stormwater Management Report” (AECOM, 2024).

6.3 Mitigation

Standard mitigation measures are typically used for construction-related impacts. These mitigation measures are commonly implemented with infrastructure projects and include measures intended to reduce or eliminate potential impacts to the natural environment. The anticipated impacts of the proposed work and the recommended mitigation measures are detailed in **Table 5-3**. The following general measures are proposed to mitigate potential impacts further; however, additional mitigation measures are provided in **Table 5-3**:

■ Installation of Fencing

The installation of tree protection fencing and equipment exclusion fencing can minimize construction-related impacts such as damage to trees or sediment loading in adjacent Natural Heritage Features. Consideration should be given to install protective fencing adjacent to vegetation communities and the Dorset Park Branch of Southwest Highland Creek. Proper installation and maintenance are necessary to reduce the risk of potential impacts.

■ Incidental Take of Migratory Birds Convention Act-protected Birds and Nests

To avoid contravention of the Migratory Birds Convention Act, any vegetation removal required should be completed outside of the bird nesting period (**April 1 to August 31**). If this is not possible, nest searches completed by a qualified Avian Biologist can be completed in simple habitat¹ prior to but within 48 hours of vegetation clearing. If a nest of a Migratory Birds Convention Act -protected bird is identified, the qualified Avian Biologist will establish an appropriately sized buffer wherein no construction is to occur until the nestling have fledged and the nest is deemed as inactive by the Avian Biologist.

1. Simple habitats are those in which migratory bird nest absence can be confidently established through nest surveys. These include habitats such as an urban park consisting of mostly lawns with a few isolated trees, a vacant lot with few possible nest sites, a previously cleared area which might attract ground nesters, a structure such as a bridge, a beacon, a tower or a building, snags that can contain primary and secondary cavity nesters, and colonial-breeding species that can often be located from a distance.

■ **Bat Maternity Colonies Significant Wildlife Habitat and Species at Risk**

Avoid tree removal within the Dry - Fresh Exotic Deciduous Forest Type (FODM4-12) during the bat active season (**April 1 to September 30**).

■ **Wildlife Exclusionary Measures including Species of Conservation Concern**

Suitable habitat for turtles and amphibians was identified in the larger Study Area. Wildlife exclusionary measures including fencing should also be implemented to prevent wildlife encounters during construction activities. Exclusion fencing type and installation should follow the Best Management Practices for Mitigation the Effects of Roads on Amphibian and Reptile Species at Risk in Ontario (Ministry of Natural Resources and Forestry, 2016).

■ **Sediment, Erosion and Dust**

A sediment and erosion control plan should be developed that would include installation of sediment and erosion control measures such as silt fencing and hay-bale check dams prior to construction activities. To mitigate dust deposition, a dust suppressant can be applied to areas of exposed soils and areas of concrete drilling/cutting to reduce or eliminate dust generation.

■ **Machinery/Equipment Practices**

Impacts from construction machinery can be limited or avoided with proper machinery inspections and maintenance and by establishing areas away from Natural Heritage Features that are dedicated to re-fuelling and storing machinery. Refuelling should not occur within 30 m of a watercourse, drainage feature, or wetland. Emergency spill-kits and drop trays should be kept on site and deployed as necessary for equipment working near or over water. No machinery/equipment should enter or ford the Dorset Park Branch of Southwest Highland Creek at any time.

■ **Invasive Species Control**

Consideration should be given to limit the spread of invasive species. The *Clean Equipment Protocol* (Halloran *et al.*, 2013) should be implemented during construction activities.

■ **Environmental Mitigation and Monitoring Plan**

An Environmental Mitigation and Monitoring Plan will be developed for the Project and outline details on how to successfully implement mitigation measures and recommendations pertaining to Natural Heritage Features within the Study Area.

Table 6-2: Potential Impacts, Mitigation Measures and Monitoring Activities for the Proposed Works

Environmental Component	Potential Impacts	Mitigation Measures	Monitoring Activities
Natural Heritage Features	<ul style="list-style-type: none"> ■ Unevaluated wetlands. 	<ul style="list-style-type: none"> ■ Unevaluated wetlands are outside of the Construction Disturbance Area and are not anticipated to be impacted by construction activities. 	<ul style="list-style-type: none"> ■ None required.
Policy Area	<ul style="list-style-type: none"> ■ Vegetation removal within the City's Natural Heritage System. 	<ul style="list-style-type: none"> ■ Refer below to mitigation measures described for Vegetation Communities and Wildlife and Wildlife Habitat. 	<ul style="list-style-type: none"> ■ Refer below to monitoring described for Vegetation Communities and Wildlife and Wildlife Habitat.
Policy Area	<ul style="list-style-type: none"> ■ Vegetation removal within the City of Toronto Ravine and Natural Feature Protection. 	<ul style="list-style-type: none"> ■ Refer below to mitigation measures described for Vegetation Communities and Wildlife and Wildlife Habitat. 	<ul style="list-style-type: none"> ■ Refer below to monitoring described for Vegetation Communities.
Policy Area	<ul style="list-style-type: none"> ■ Vegetation removal within the Toronto and Region Conservation Authority regulated area. 	<ul style="list-style-type: none"> ■ Refer below to mitigation measures described for Vegetation Communities and Wildlife and Wildlife Habitat. 	<ul style="list-style-type: none"> ■ Refer below to monitoring described for Vegetation Communities and Wildlife and Wildlife Habitat.
Vegetation Communities	<ul style="list-style-type: none"> ■ Removal of vegetation communities. ■ Damage to adjacent vegetation or Ecological Land Classification communities as a result of accidental intrusion. 	<ul style="list-style-type: none"> ■ Vegetation removal will be kept to a minimum and limited to within the Construction Disturbance Area. ■ Construction fencing and/or silt fencing, where appropriate, will be installed and maintained to clearly define the construction footprint and prevent accidental damage or intrusion to adjacent vegetation or Ecological Land Classification communities. ■ Temporarily disturbed areas will be re-vegetated using non-invasive, native plantings and/or seed mix appropriate to the site conditions and adjacent vegetation communities. Seed mixes will be used in conjunction with an appropriate non-invasive cover crop as needed. ■ Vegetation removals will also consider and mitigate potential impacts to sensitive species (e.g., migratory birds and Species at Risk) and features (e.g., Significant Wildlife Habitat). Refer to the Wildlife, Significant Wildlife Habitat and Species at Risk mitigation measures described below. ■ Develop and implement mitigation measures and recommendations in the Environmental Mitigation and Monitoring Plan. 	<ul style="list-style-type: none"> ■ On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts.
Vegetation Communities	<ul style="list-style-type: none"> ■ City and private tree removal and injury. 	<ul style="list-style-type: none"> ■ An arborist report by an International Society of Arboriculture Certified Arborist may be prepared with regard to the Ontario <i>Forestry Act R.S.O 1990</i>, and other regulations and best management practices as applicable. ■ Trees protected under the City of Toronto's tree protection by-laws (refer to Table 2-1) are subject to tree protection zones and requirements laid out within the City of Toronto's <i>Tree Protection Policy and Specifications for Construction Near Trees (2016)</i>. Prior to the undertaking of any tree removals, a Tree Removal Strategy/Tree Preservation Plan may be developed during detailed design to document tree protection and mitigation measures that follow the City of Toronto's <i>Tree Protection Policy and Specifications for Construction Near Trees Guidelines (2016)</i> and adherence with best practices, standards, and regulations on safety, environmental and wildlife protections. ■ If a tree requires removal, compensation and permitting/approvals (as required) shall be undertaken in accordance with the City of Toronto by-law requirements. ■ Pruning of branches will be conducted through the implementation of proper arboricultural techniques. ■ Tree protection zone fencing will be established to protect and prevent tree injuries. Tree protection zones will be clearly staked prior to construction using barriers in accordance with local by-law requirements. 	<ul style="list-style-type: none"> ■ If a separate arborist report is warranted for tree removals, monitoring activities for tree protection measures will be outlined and adhered to.

Environmental Component	Potential Impacts	Mitigation Measures	Monitoring Activities
<p>Vegetation Communities & Southwest Highland Creek</p>	<ul style="list-style-type: none"> ■ Increased erosion and sedimentation. 	<ul style="list-style-type: none"> ■ Construction fencing and/or silt fencing, where appropriate, will be installed and maintained to clearly define the construction footprint and prevent accidental damage or intrusion to adjacent vegetation or Ecological Land Classification communities. ■ An Erosion and Sediment Control Plan, in accordance with the Erosion and Sediment Control Guideline for Urban Construction (Toronto and Region Conservation Authority, 2019), will be prepared prior to and implemented during construction to minimize the risk of sedimentation to the vegetation communities. The Sediment and Erosion Control Plan should include measures such as silt fencing and hay-bale check dams prior to construction activities. To mitigate dust deposition, a dust suppressant can be applied to areas of exposed soils and areas of concrete drilling/cutting to reduce or eliminate dust generation. ■ Ensure the work site is stabilized prior to removal of Erosion and Sediment Control Plan measures following construction. ■ Stockpiled materials or equipment will be stored within the construction footprint but shall be kept at least 30 m away from any watercourse or wetland. Signs will be put up on site to indicate the 30 metres setback from any watercourse or wetland. 	<ul style="list-style-type: none"> ■ On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts. ■ All fencing (silt, tree and wildlife exclusion) should be monitored during construction on a weekly basis and 24 hours after significant rain or wind events to ensure that all fencing is intact and functioning properly.
<p>Vegetation Communities</p>	<ul style="list-style-type: none"> ■ Soil or water contamination as a result of spills (e.g., grease and/or fuel) from equipment use. ■ Introduction or spread of invasive species. 	<ul style="list-style-type: none"> ■ A Spill Prevention and Contingency Plan will be developed and adhered to. Spills will be immediately contained and cleaned up in accordance with provincial regulatory requirements and the contingency plan. ■ Refuelling shall be done within refuelling stations lined with appropriate material to prevent seepage and fuel discharge. ■ Emergency spill-kits and drop trays should be kept on site and deployed as necessary for equipment working near water. ■ All machinery, construction equipment and vehicles arriving on site should be in clean condition (e.g., free of fluid leaks, soils containing seeds of plant material from invasive species) and be inspected and washed in accordance with the <i>Clean Equipment Protocol for Industry</i> (Halloran et al., 2013) prior to arriving and leaving the construction site in order to prevent the spread of invasive species to other locations. ■ Emerald Ash Borer (<i>Agrilus planipennis</i>) is an invasive pest that has decimated Ash species (<i>Fraxinus sp.</i>) in North America (Canadian Food Inspection Agency, 2024). Trees should be removed from site in a manner that will prevent the emergence and spread of Emerald Ash Borer from the infested tree material and such that no trees or wood chips shall be moved outside of the Emerald Ash Borer quarantine zone as defined by the Canadian Food Inspection Agency (2024). An arborist report should be produced during future study stages to outline mitigation measures to avoid/prevent the spread of Emerald Ash Borer. 	<ul style="list-style-type: none"> ■ On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts. ■ Ensure precautions are being taken to minimize the spread of invasive species by implementing the <i>Clean Equipment Protocol for Industry</i> (Halloran et al., 2013) on equipment and machinery prior to moving sites.

Environmental Component	Potential Impacts	Mitigation Measures	Monitoring Activities
<p>Southwest Highland Creek</p>	<ul style="list-style-type: none"> ■ Death of fish and harmful alteration, disruption, or disturbance to fish habitat through: <ul style="list-style-type: none"> - Sedimentation and erosion. - Leaks and spills. - Riparian vegetation removal. 	<ul style="list-style-type: none"> ■ No in-water works are proposed and therefore no machinery/equipment should enter or ford Southwest Highland Creek. ■ A Spill Prevention and Contingency Plan will be developed and adhered to. Spills will be immediately contained and cleaned up in accordance with provincial regulatory requirements and the contingency plan. ■ Emergency spill-kits and drop trays should be kept on site and deployed as necessary for equipment working near water. ■ Refuelling of equipment will occur at least 30 metres away from any watercourse or wetland. Signs will be put up on site to indicate the 30 metres setback from any watercourse or wetland. ■ All machinery, construction equipment and vehicles arriving on site should be in clean condition (e.g., free of fluid leaks, soils containing seeds or plant material from invasive species) and be inspected and washed in accordance with the Clean Equipment Protocol for Industry (Halloran et al., 2013) prior to arriving and leaving the construction site. ■ Construction fencing and/or silt fencing, where appropriate, will be installed and maintained to clearly define the construction footprint and prevent accidental damage or intrusion to riparian vegetation within 30 m of the watercourse or wetland. ■ An Erosion and Sediment Control Plan, in accordance with the Erosion and Sediment Control Guideline for Urban Construction (Toronto and Region Conservation Authority, 2019), will be prepared prior to and implemented during construction to minimize the risk of sedimentation to the vegetation communities. The Sediment and Erosion Control Plan should include measures such as silt fencing and hay-bale check dams prior to construction activities. To mitigate dust deposition, a dust suppressant can be applied to areas of exposed soils and areas of concrete drilling/cutting to reduce or eliminate dust generation. 	<ul style="list-style-type: none"> ■ On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts. ■ All fencing (silt, tree and wildlife exclusion) should be monitored during construction on a weekly basis and 24 hours after significant rain or wind events to ensure that all fencing is intact and functioning properly.
<p>Wildlife and Wildlife Habitat – General</p>	<ul style="list-style-type: none"> ■ Disturbance, displacement or mortality of wildlife. 	<ul style="list-style-type: none"> ■ If wildlife is encountered, measures will be implemented to avoid destruction, injury, or interference with the species, and/or its habitat. For example, construction activities will cease or be reduced and wildlife will be encouraged to move off-site and away from the construction area on its own. A qualified Biologist will be contacted to define the appropriate buffer required from wildlife. 	<ul style="list-style-type: none"> ■ Regular monitoring (field observations, on-site inspections) will be undertaken to ensure that there are no wildlife trapped in the construction work area.
<p>Wildlife and Wildlife Habitat – Species of Conservation Concern birds and Migratory Breeding Birds and Nests</p>	<ul style="list-style-type: none"> ■ Disturbance or destruction of migratory bird nests. ■ Although no nests belonging to Species of Conservation Concern and Migratory Birds Convention Act-protected birds were identified under the Mile 8.60 Bridge, there is potential for nesting under the bridge in subsequent years. 	<ul style="list-style-type: none"> ■ All works must comply with the Migratory Birds Convention Act, including removing trees and vegetation outside of the bird nesting period (April 1 to August 31 in Ontario). ■ If activities are proposed to occur during the general nesting period, a breeding bird and nest survey may be undertaken prior to required activities in simple habitat as identified by a qualified Biologist. Nest searches in simple habitats by an experienced searcher are required and will be completed by a qualified Biologist no more than 48 hours prior to vegetation removal. ■ If a nest of a migratory bird is found outside of this nesting period (including a ground nest) it still receives protection. 	<ul style="list-style-type: none"> ■ Regular monitoring (field observations, on-site inspections) will be undertaken to confirm that activities do not encroach into nesting areas or disturb active nesting sites.
<p>Wildlife and Wildlife Habitat – Significant Wildlife Habitat</p>	<ul style="list-style-type: none"> ■ Potential injury/mortality to wildlife, including Species of Conservation Concern. 	<ul style="list-style-type: none"> ■ Installation of exclusion fencing around upland work area and suitable stockpiled material prior to April 1 will prevent turtles from entering the work area following the Ministry of Natural Resources and Forestry’s Reptile and Amphibian Fencing Best Management Practices (2020). ■ Stockpiles of gravel and sand required for construction should not be placed in areas that are accessible to nesting turtles. If this is not possible, then exclusion fencing around stockpiled gravel and sand should be installed prior to May 1 and maintained until July 30. 	<ul style="list-style-type: none"> ■ On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts.

Environmental Component	Potential Impacts	Mitigation Measures	Monitoring Activities
Species at Risk - General	<ul style="list-style-type: none"> Disturbance and/or mortality to Species at Risk. 	<ul style="list-style-type: none"> No Species at Risk are anticipated to be found within the Construction Disturbance Area. However, on-site personnel will be provided with information (e.g., factsheets) that addresses the potential Species at Risk within the surrounding area and the procedure(s) to follow if an individual is encountered or injured. 	<ul style="list-style-type: none"> On-site inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts.
Species at Risk – Bat Species at Risk	<ul style="list-style-type: none"> Disturbance and/or mortality to Species at Risk. 	<ul style="list-style-type: none"> If tree removal is required within the Dry - Fresh Exotic Deciduous Forest Type (FODM4-12), tree removal should occur outside of the bat active season (April 1 to September 30) to avoid incidental take of roosting bats. The form and function of treed communities in the Study Area will be maintained for potential bat Species at Risk/maternity roosting. 	<ul style="list-style-type: none"> Regular inspection in areas of vegetation removal will be undertaken as required during construction to ensure that fencing is intact, only specified trees (if any) are removed and no damage is caused to the remaining trees and adjacent vegetation communities.

Notes: Regulations, standards and guidance documents referenced herein are current as of the time of writing and may be amended from time to time. If clarification is required regarding regulatory requirements, the appropriate regulatory agencies will be consulted

7. Anticipated Permits and Approvals

Based on the known background information and proposed works at this time, the permits and approvals that are anticipated for this project are summarized in **Table 7-1**.

Table 7-1: Anticipated Permits and Approvals

Level of Legislation	Federal Legislation	Anticipated Permit and Approval Requirements
Federal	<i>Fisheries Act, 1985</i>	As no in-water works are proposed, the death of fish or the harmful alteration, disruption, or disturbance of fish habitat is not anticipated should all mitigation measures be followed to protect fish and fish habitat. As such, a Request for Review is not required. However, should any of the proposed works occur below the high water mark it is highly recommended that the impacts to fish habitat be reassessed and a Request for Review from Fisheries and Oceans Canada may be deemed necessary.
Federal	<i>Migratory Birds Convention Act, 1994</i>	Contravention of the Migratory Birds Convention Act is not anticipated provided vegetation removal occurs outside of the breeding bird season (April 1 to August 31).
Provincial	<i>Provincial Policy Statement, 2020</i>	There are no permits to be obtained under the Provincial Policy Statement; however, mitigation measures and best management practices will prevent negative impacts to Significant Wildlife Habitat.
Provincial	<i>Endangered Species Act, 2007</i>	No impacts to Species at Risk are anticipated and therefore no authorization under the Endangered Species Act are expected.
Provincial	<i>Fish and Wildlife Conservation Act, 1997</i>	No permits or approvals required as mitigation measures and best management practices will prevent negative impacts to wildlife.
Provincial	<i>Ontario Regulation 41/24</i>	A Section 28 permit is required as it relates to natural hazards in the Toronto and Region Conservation Authority's regulated area.
Municipal	<i>City of Toronto Official Plan Policies</i>	Tree removal and injury permits may be required if the following tree removals required for the proposed work: <ul style="list-style-type: none"> ■ Trees of any size within municipal streets and/or City of Toronto Ravine and Natural Feature Protection Area. ■ Trees with a diameter of 30 cm or more on private property.

8. Future Opportunities, Constraints and Other Considerations

The following outlines potential opportunities, constraints, and other considerations that should be assessed during future works once the selection of the preferred solution becomes available:

General:

- Due to the records of provincially and federally listed Species at Risk within the Study Area it is recommended that screening for Species at Risk continues to be conducted during future study stages of this Project since species can be added to or removed from the scheduled list of protected species under the Endangered Species Act or Species at Risk Act on a periodic basis.
- Regulatory agencies should also be consulted at the time of the Species at Risk screening to confirm the presence of Species at Risk and the requirement for permits under the provincial Endangered Species Act and/or the federal Species at Risk Act.
- An Erosion and Sediment Control Plan should be developed during future study stages and implemented to contain/isolate exposed soils, stockpiled materials and unstable areas in the work zone and to prevent the release of sediment to all waterbodies.
- A Spill Prevention and Contingency Plan should be developed during future study stages and implemented to contain and clean up spills in accordance with provincial regulatory requirements.
- An Environmental Mitigation and Monitoring Plan will be developed for the Project and outline details on how to successfully implement mitigation measures and recommendations pertaining to Natural Heritage Features within the Study Area.

Aquatic Environment:

- The Ministry of Natural Resources and Forestry provided an in-water work timing window of **July 1 to March 31** for all tributaries to Highland Creek identified in LGL's Natural Heritage Report (2017). As the Dorset Park Branch of Southwest Highland Creek is within the Highland Creek watershed and shares a similar fish community as the tributaries discussed in LGL's Natural Heritage Report (2017), the same in-water work timing window is expected to apply. However, should in-water works be required, correspondence with the

Ministry of Natural Resources and Forestry should be refreshed to provide confirmation.

- Aquatic Habitat Assessments during future study stages should be conducted, as applicable to Project sites, to characterize and confirm existing aquatic conditions.
- As no in-water works are proposed at this time, the death of fish or the harmful alteration, disruption, or disturbance of fish habitat is not anticipated should all mitigation measures be followed to protect fish and fish habitat. As such, a Request for Review is not required. However, if the proposed works change to involve any work below the high water mark the potential impacts to fish and fish habitat will need to be reassessed and a Request for Review may need to be submitted to Fisheries and Oceans Canada.

Terrestrial Environment:

- Vegetation removal activities should be limited to outside of the breeding bird nesting period (**April 1 to August 31**) in all types of vegetation communities and bat active season (**April 1 to September 30**) in treed or forested communities of any given year. Other wildlife sensitive periods may need to be considered as well based on the results of field investigations to be completed during future study stages as applicable.
- The proposed work may require tree removals and/or may result in the harm or mortality of trees adjacent to the Construction Disturbance Area. As such, an arborist report will likely be required to document tree removals and identify tree protection measures.

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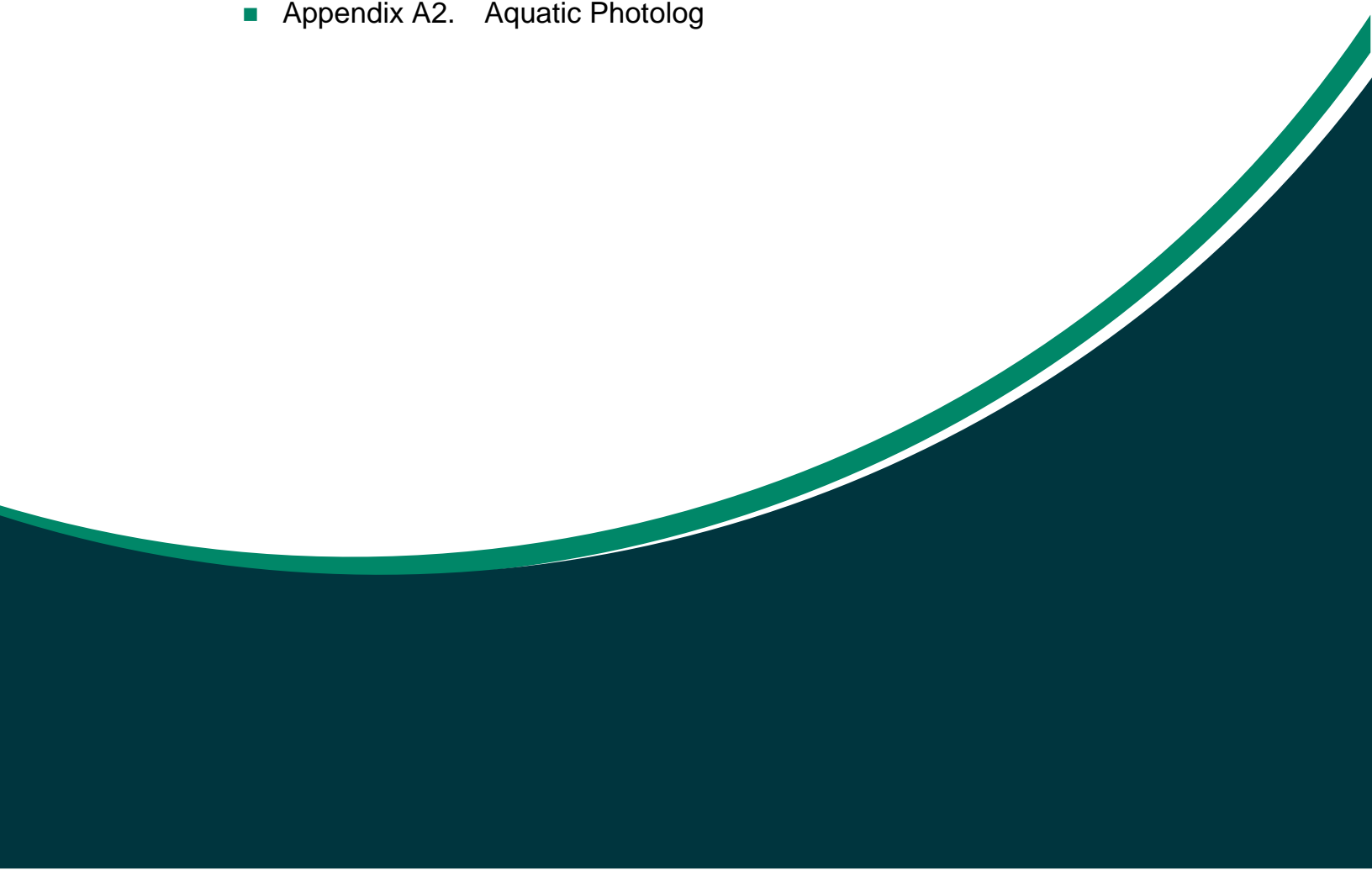
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Appendix A

Photologs

- Appendix A1. Terrestrial Photolog
 - Appendix A2. Aquatic Photolog
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Appendix A1. Terrestrial Photolog



Client Name: Toronto Transit Commission	Report Name Scarborough Rapid Transit Busway Conversion Transit and Rail Project Assessment Process Natural Environment Report	Project No. 60729927
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Photo No. 1	Date 5/9/2024
Direction Photo Taken Southwest	
Description One of three Treed Hedgerows (CUH1-A) found within Jack Goodlad Park and the Scarborough Hydro Green Space.	



Photo No. 2	Date 5/9/2024
Direction Photo Taken Northeast	
Description The Dry – Moist Old Field Meadow (CUM1-1a) located adjacent to the Fieldstone Commons Care Community.	



Client Name: Toronto Transit Commission	Report Name Scarborough Rapid Transit Busway Conversion Transit and Rail Project Assessment Process Natural Environment Report	Project No. 60729927
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Photo No. 3	Date 5/9/2024
Direction Photo Taken Southeast	
Description The Dry – Moist Old Field Meadow (CUM1-1b) located within Arsandco Park.	



Photo No. 4	Date 5/9/2024
Direction Photo Taken East	
Description One of two Dry – Moist Old Field Meadows (CUM1-1c) located in Jack Goodlad Park.	



Client Name: Toronto Transit Commission	Report Name Scarborough Rapid Transit Busway Conversion Transit and Rail Project Assessment Process Natural Environment Report	Project No. 60729927
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Photo No. 5	Date 5/9/2024
Direction Photo Taken Southeast	
Description One of two Dry – Moist Old Field Meadows (CUM1-1d) located in Jack Goodlad Park.	



Photo No. 6	Date 5/9/2024
Direction Photo Taken Southeast	
Description The Dry – Moist Old Field Meadow (CUM1-1e) that comprises the majority of the Scarborough Hydro Green Space.	



Client Name: Toronto Transit Commission	Report Name Scarborough Rapid Transit Busway Conversion Transit and Rail Project Assessment Process Natural Environment Report	Project No. 60729927
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Photo No. 7	Date 5/9/2024
Direction Photo Taken North	
Description A Sumac Cultural Thicket (CUT1-1) located in various pockets along Lawrence Avenue E.	



Photo No. 8	Date 5/9/2024
Direction Photo Taken Northeast	
Description A Native Deciduous Sapling Regeneration Thicket (CUT1-A1) located east of Nantucket Boulevard.	



Client Name: Toronto Transit Commission	Report Name Scarborough Rapid Transit Busway Conversion Transit and Rail Project Assessment Process Natural Environment Report	Project No. 60729927
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Photo No. 9	Date 5/9/2024
Direction Photo Taken Southwest	
Description A Mineral Cultural Woodland (CUW1a) located within a fenced off area adjacent to Arsandco Park.	



Photo No. 10	Date 5/9/2024
Direction Photo Taken North	
Description A Mineral Cultural Woodland (CUW1b) located within a fenced off area north of Jack Goodlad Park adjacent to the Hydro One Scarborough Transmission Station.	

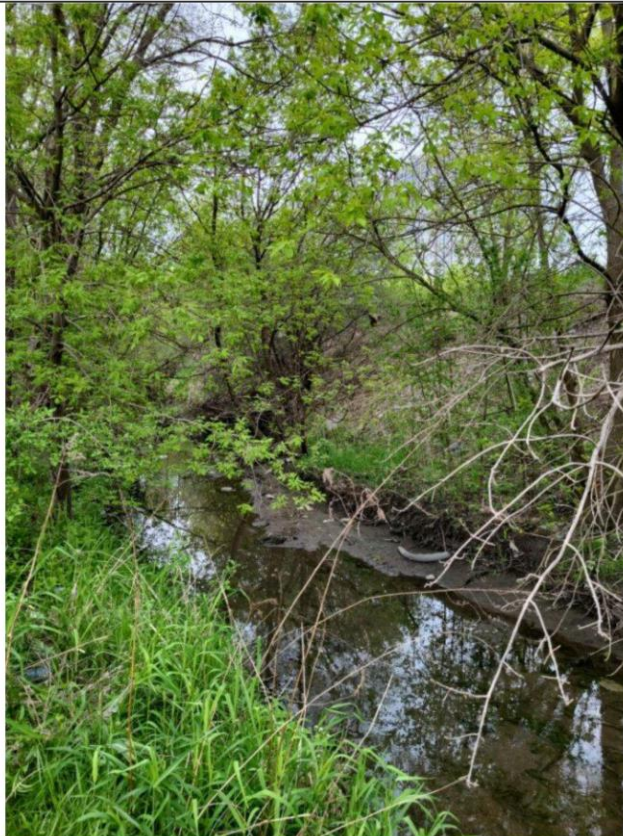


Client Name: Toronto Transit Commission	Report Name Scarborough Rapid Transit Busway Conversion Transit and Rail Project Assessment Process Natural Environment Report	Project No. 60729927
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Photo No. 11	Date 5/9/2024
Direction Photo Taken South	
Description Lord Roberts Woods, a Dry - Fresh Sugar Maple Deciduous Forest (FOD5-1) located on either side of a pedestrian path adjacent to Lord Roberts Junior Public School.	



Photo No. 12	Date 5/9/2024
Direction Photo Taken East	
Description The Dry - Fresh Manitoba Maple Deciduous Forest (FODM4-5) located within a channel southwest of Midwest Road.	



Client Name: Toronto Transit Commission	Report Name Scarborough Rapid Transit Busway Conversion Transit and Rail Project Assessment Process Natural Environment Report	Project No. 60729927
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Photo No. 13	Date 5/9/2024
Direction Photo Taken Southeast	
Description The Dry - Fresh Exotic Deciduous Forest Type (FODM4-12) located within a channel east of Nantucket Boulevard.	

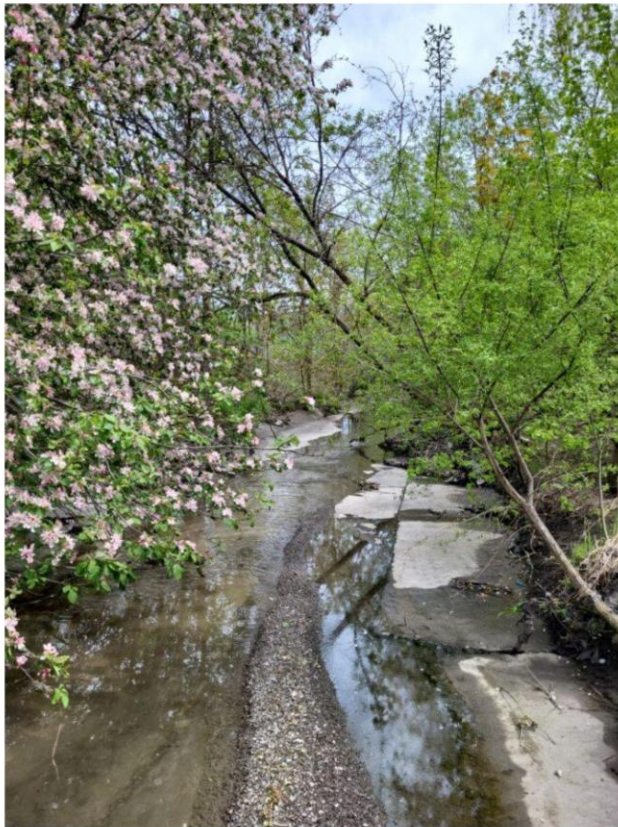


Photo No. 14	Date 5/9/2024
Direction Photo Taken South	
Description Arsandco Pond, a Cattail Mineral Shallow Marsh (MAS2-1) located within Arsandco Park. Canada Geese (<i>Branta canadensis</i>) observed with goslings at the time of field investigations.	



Client Name: Toronto Transit Commission	Report Name Scarborough Rapid Transit Busway Conversion Transit and Rail Project Assessment Process Natural Environment Report	Project No. 60729927
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Photo No. 15	Date 5/9/2024
Direction Photo Taken South	
Description A Narrow-Leaved Cattail Mineral Shallow Marsh (MAS2-1b) located within a ditch in the green space adjacent to the Hydro One Scarborough Transmission Station.	



Photo No. 16	Date 5/9/2024
Direction Photo Taken South	
Description Arsandco Pond, delineated as a Turbid Open Aquatic (disturbed unvegetated; OAO1-T) community located in Arsandco Park.	



Client Name: Toronto Transit Commission	Report Name Scarborough Rapid Transit Busway Conversion Transit and Rail Project Assessment Process Natural Environment Report	Project No. 60729927
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Photo No. 17	Date 5/9/2024
Direction Photo Taken North	
Description A Willow Mineral Thicket Swamp (SWT2-2) located within the green space adjacent to the Hydro One Scarborough Transmission Station	



Photo No. 18	Date 5/9/2024
Direction Photo Taken East	
Description A Red-osier Mineral Thicket Swamp (SWT2-5) located within the green space adjacent to Jack Goodlad Park.	



Client Name: Toronto Transit Commission	Report Name Scarborough Rapid Transit Busway Conversion Transit and Rail Project Assessment Process Natural Environment Report	Project No. 60729927
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Photo No. 19	Date 5/9/2024
Direction Photo Taken East	
Description A potential woodpecker cavity located within Lord Roberts Woods (Dry - Fresh Sugar Maple Deciduous Forest; FOD5-1)	



**Appendix A2.
Aquatic Photolog**



Client Name: Toronto Transit Commission	Report Name Scarborough Rapid Transit Busway Conversion Transit and Rail Project Assessment Process Natural Environment Report	Project No. 60729927
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Photo No. 1	Date 5/9/2024
Direction Photo Taken East	
Description Southwest Highland Creek Dorset Park Branch. Downstream Reach. Facing downstream at debris jam outside of Study Area.	



Photo No. 2	Date 5/9/2024
Direction Photo Taken South	
Description Southwest Highland Creek Dorset Park Branch. Downstream Reach. Facing downstream at debris jam outside of Study Area.	

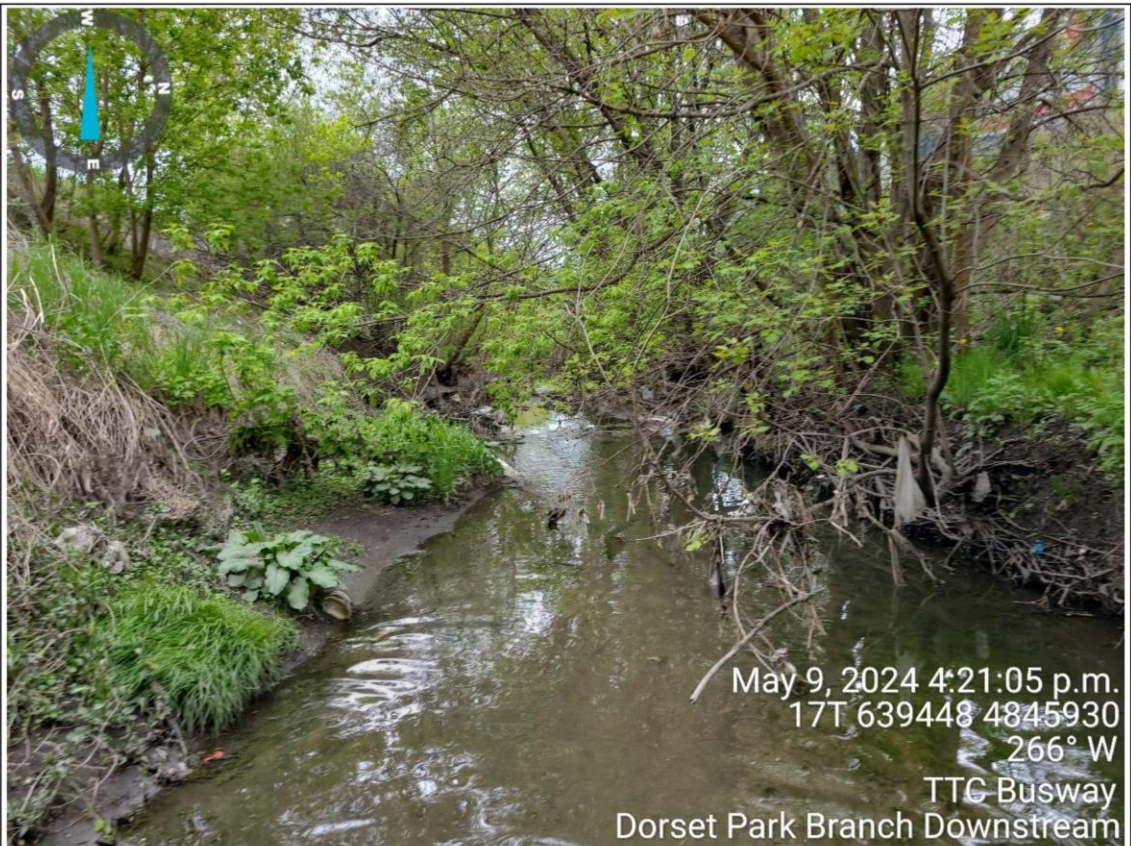


Client Name: Toronto Transit Commission	Report Name Scarborough Rapid Transit Busway Conversion Transit and Rail Project Assessment Process Natural Environment Report	Project No. 60729927
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Photo No. 3	Date 5/9/2024
Direction Photo Taken North	
Description Southwest Highland Creek Dorset Park Branch. Downstream Reach. Facing into Midwest Road stormwater box culvert outlet. Downstream of Study Area. Box culvert contributes flow to Southwest Highland Creek.	



Photo No. 4	Date 5/9/2024
Direction Photo Taken West	
Description Southwest Highland Creek Dorset Park Branch. Downstream Reach. Example of channel facing upstream. Wide run, with steep vegetated upper banks and eroding lower banks.	



Client Name: Toronto Transit Commission	Report Name Scarborough Rapid Transit Busway Conversion Transit and Rail Project Assessment Process Natural Environment Report	Project No. 60729927
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Photo No. 5	Date 5/9/2024
Direction Photo Taken North	
Description Southwest Highland Creek Dorset Park Branch. Downstream Reach. More household waste within the channel.	



Photo No. 6	Date 5/9/2024
Direction Photo Taken West	
Description Southwest Highland Creek Dorset Park Branch. Downstream Reach. Facing upstream. Sand/gravel bar within the channel surrounded by weak riffle. Note abundance of green algae overlaying substrate.	



Client Name: Toronto Transit Commission	Report Name Scarborough Rapid Transit Busway Conversion Transit and Rail Project Assessment Process Natural Environment Report	Project No. 60729927
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Photo No. 7	Date 5/9/2024
Direction Photo Taken Northwest	
Description Southwest Highland Creek Dorset Park Branch. Downstream Reach. Oil sheen on surface of water and within the substrate.	



Photo No. 8	Date 5/9/2024
Direction Photo Taken Northwest	
Description Southwest Highland Creek Dorset Park Branch. Downstream Reach. Facing upstream. More waste in channel including garden shed on right bank.	



Client Name: Toronto Transit Commission	Report Name Scarborough Rapid Transit Busway Conversion Transit and Rail Project Assessment Process Natural Environment Report	Project No. 60729927
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Photo No. 9	Date 5/9/2024
Direction Photo Taken West	
Description Southwest Highland Creek Dorset Park Branch. Downstream Reach. Eroding left bank with waste falling down the bank.	

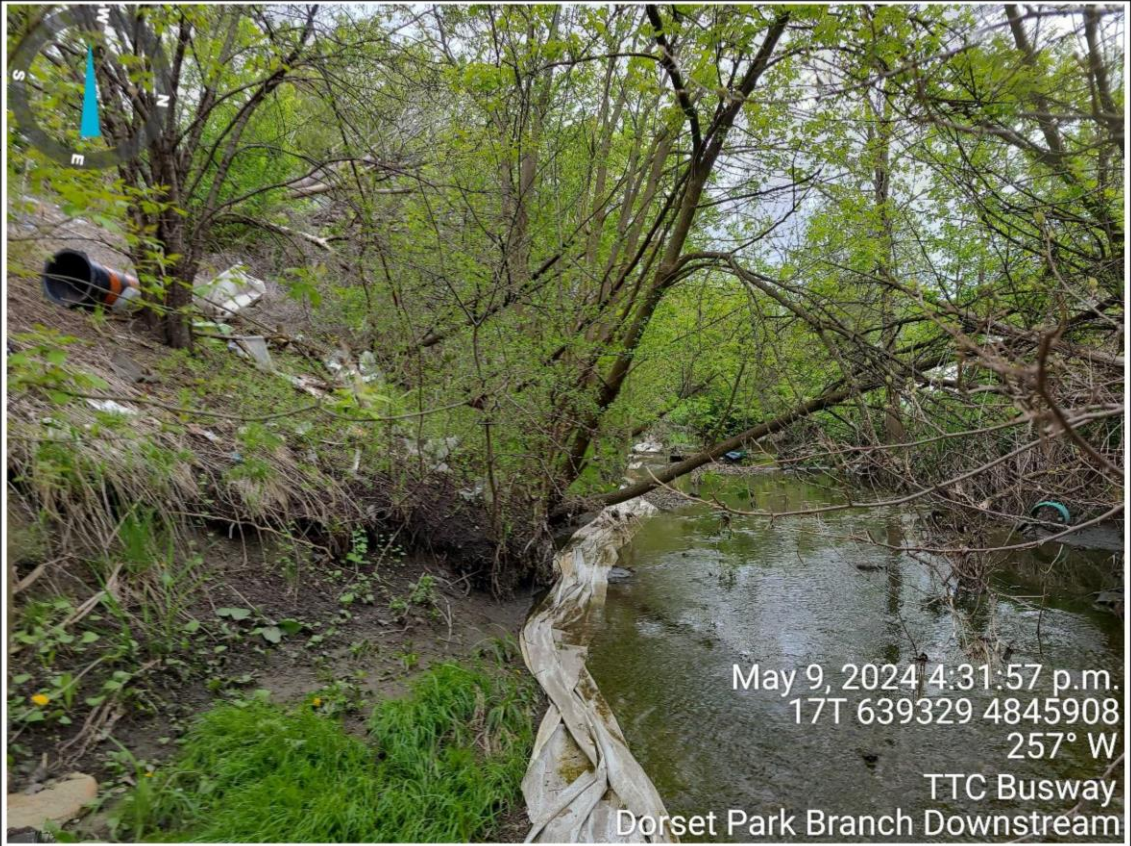


Photo No. 10	Date 5/9/2024
Direction Photo Taken South	
Description Southwest Highland Creek Dorset Park Branch. Downstream Reach. Dumpsters at top of left bank may be the source of some waste within the creek.	



Client Name: Toronto Transit Commission	Report Name Scarborough Rapid Transit Busway Conversion Transit and Rail Project Assessment Process Natural Environment Report	Project No. 60729927
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Photo No. 11	Date 5/9/2024
Direction Photo Taken Southwest	
Description Southwest Highland Creek Dorset Park Branch. Downstream Reach. Example of substrate and abundant green algae.	



Photo No. 12	Date 5/9/2024
Direction Photo Taken West	
Description Southwest Highland Creek Dorset Park Branch. Downstream Reach. Facing upstream. Within 25 m of the TTC crossing the banks becomes protected by a concrete slope and the channel becomes lined by concrete.	



Client Name: Toronto Transit Commission	Report Name Scarborough Rapid Transit Busway Conversion Transit and Rail Project Assessment Process Natural Environment Report	Project No. 60729927
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Photo No. 13	Date 5/9/2024
Direction Photo Taken Northwest	
Description Southwest Highland Creek Dorset Park Branch. Downstream Reach. Facing upstream at TTC crossing. The banks and channel are concrete-lined. Earth has been deposited on the right bank supporting growth of herbaceous plants. Note the left bank concrete coming apart.	



Photo No. 14	Date 5/9/2024
Direction Photo Taken South	
Description Southwest Highland Creek Dorset Park Branch. Downstream Reach. Left bank concrete failing.	



Client Name: Toronto Transit Commission	Report Name Scarborough Rapid Transit Busway Conversion Transit and Rail Project Assessment Process Natural Environment Report	Project No. 60729927
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Photo No. 15	Date 5/9/2024
Direction Photo Taken West	
Description Southwest Highland Creek Dorset Park Branch. Downstream Reach. Corrugated steel pipe discharge into creek.	



Photo No. 16	Date 5/9/2024
Direction Photo Taken Northwest	
Description Southwest Highland Creek Dorset Park Branch. Downstream Reach. Culvert perch and shallow flows could impede fish passage upstream.	



Client Name: Toronto Transit Commission	Report Name Scarborough Rapid Transit Busway Conversion Transit and Rail Project Assessment Process Natural Environment Report	Project No. 60729927
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Photo No. 17	Date 5/9/2024
Direction Photo Taken West	
Description Southwest Highland Creek Dorset Park Branch. Upstream Reach. Facing upstream at Nantucket Boulevard crossing under construction.	



Photo No. 18	Date 5/9/2024
Direction Photo Taken Southwest	
Description Southwest Highland Creek Dorset Park Branch. Upstream Reach. Facing across channel at left bank under construction.	



Client Name: Toronto Transit Commission	Report Name Scarborough Rapid Transit Busway Conversion Transit and Rail Project Assessment Process Natural Environment Report	Project No. 60729927
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Photo No. 19	Date 5/9/2024
Direction Photo Taken South	
Description Southwest Highland Creek Dorset Park Branch. Upstream Reach. Facing downstream inside concrete-lined channel with shrubby riparian cover.	

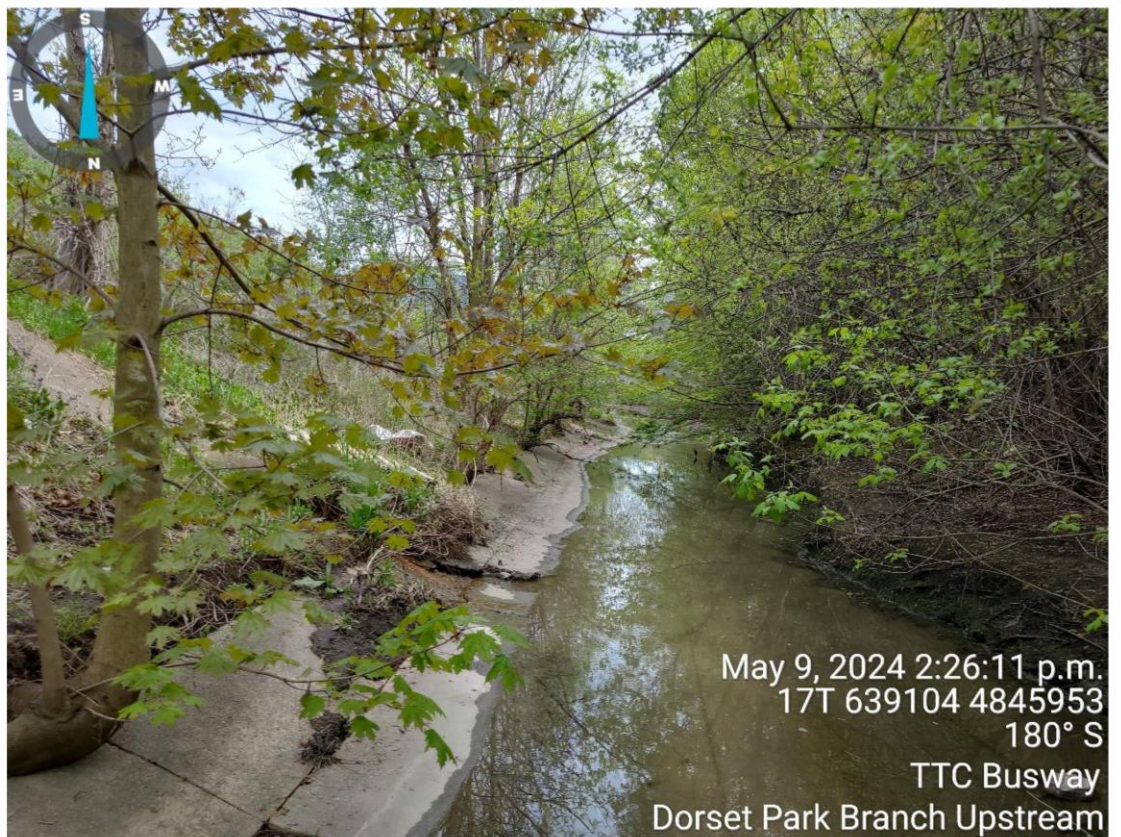
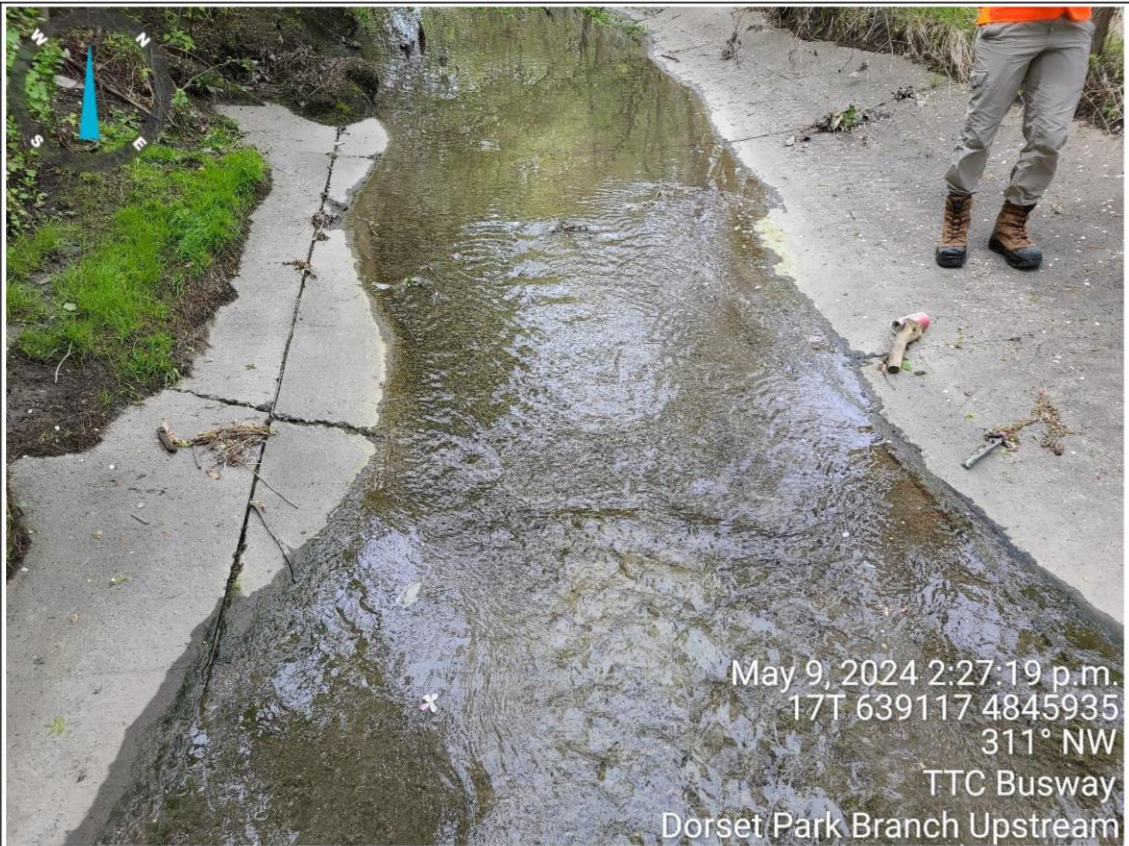


Photo No. 20	Date 5/9/2024
Direction Photo Taken Northwest	
Description Southwest Highland Creek Dorset Park Branch. Upstream Reach. Facing upstream at shallow "riffle" over concrete.	



Client Name: Toronto Transit Commission	Report Name Scarborough Rapid Transit Busway Conversion Transit and Rail Project Assessment Process Natural Environment Report	Project No. 60729927
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Photo No. 21	Date 5/9/2024
Direction Photo Taken West	
Description Southwest Highland Creek Dorset Park Branch. Upstream Reach. Channel perch creating impediment to fish passage upstream.	



Photo No. 22	Date 5/9/2024
Direction Photo Taken East	
Description Southwest Highland Creek Dorset Park Branch. Upstream Reach. Facing downstream at TTC crossing. Earth bar in river supports only riparian vegetation. The right bank is now lined within interlocking stone.	



Client Name: Toronto Transit Commission	Report Name Scarborough Rapid Transit Busway Conversion Transit and Rail Project Assessment Process Natural Environment Report	Project No. 60729927
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Photo No. 23	Date 5/9/2024
Direction Photo Taken West	
Description Southwest Highland Creek Dorset Park Branch. Upstream Reach. Looking upstream from TTC crossing.	



Photo No. 24	Date 5/9/2024
Direction Photo Taken East	
Description Southwest Highland Creek Dorset Park Branch. Upstream Reach. Facing into TTC crossing twin corrugated steel pipe inlets.	



Appendix B

Vascular Plant List



Appendix B: Vascular Plant List



Botanical Name		Plant Species Information											Local Ranks:		Plant Form		Climate		ELC Code																	
Common Name	Scientific Name	Family	CC (2023)	CW (2023)	Native Status	Invasive (Y/N)	SRANK	NRANK	GRank	COSEWIC	SARO	CZ	CZRESTR	TRCA L-Rank (2021)	7E4	Type	Flowering Season	CCVI	CCVI Confidence	CUH1-A	CUM1-1a	CUM1-1b	CUM1-1c	CUM1-1d	CUM1-1e	CUT1-1	CUT1-A1	CUW1a	CUW1b	FOD5-1	FODM4-5	FODM4-12	MAS2-1	MAS2-1b	SWT2-2	SWT2-5
Floristic Summary and Analysis for Entire Study Area																				Floristic Summary and Analysis Per ELC																
Summary																																				
Total Species:		155	N/A																																	
Native Species:		71	46%																																	
Introduced Species:		73	47%																																	
Invasive Species:		31	20%																																	
ESA Status																																				
END		0	0%																																	
THR		0	0%																																	
SC		0	0%																																	
COSEWIC Status																																				
END		0	0%																																	
THR		0	0%																																	
SC		0	0%																																	
Provincially Rare (S-rank of S1-S3)																																				
S1		0	0%																																	
S1?		0	0%																																	
S1S2		0	0%																																	
S1S3		0	0%																																	
S2		0	0%																																	
S2?		0	0%																																	
S2S3		0	0%																																	
S2S4		0	0%																																	
S3		0	0%																																	
S3?		0	0%																																	
S3S4		0	0%																																	
Total S1-S3:		0	0%																																	
Local Rank																																				
L1		0	0%																																	
L2		1	1%																																	
L3		6	4%																																	
L4		17	11%																																	
L5		29	19%																																	
LX		0	0%																																	
L+		65	42%																																	
L+?		4	3%																																	
LU		0	0%																																	
Co-efficient of Conservatism and Floral Quality Index																																				
Co-efficient of Conservatism (CC) (average):		3.61																																		
CC 0 to 3		lowest sensitivity	25	35%																																
CC 4 to 6		moderate sensitivity	36	51%																																
CC 7 to 8		high sensitivity	2	3%																																
CC 9 to 10		highest sensitivity	1	1%																																
Floral Quality Index (FQI)																																				
FQI:		30.41																																		
Presence of Wetland Species																																				
Wetness Value (CW) (average):		2.037313433																																		
upland		5	37	24%																																
facultative upland		2 to 4	51	33%																																
facultative		1 to -1	27	17%																																
facultative wetland		-2 to -4	15	10%																																
obligate wetland		-5	4	3%																																
Physiognomy																																				
Plant Form		No. of Total Species	% of Total Species																																	
Fern		1	1%																																	
Forb		66	47%																																	
Grass		5	4%																																	
RU		1	1%																																	
Sedge		5	4%																																	
Shrub		27	19%																																	
Trees		29	21%																																	
Vine		2	1%																																	
Woody Vine		3	2%																																	
(blank)			0%																																	
Grand Total		139	100%																																	

Glossary

Rarity Ranks	
COSEWIC Status	
RANK	DEFINITION
EXP	Extirpated - A wildlife species that no longer exists in the wild in Canada, but exists elsewhere.
END	Endangered - A wildlife species facing imminent extirpation or extinction.
THR	Threatened - A wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.
SC	Special Concern - A wildlife species that may become threatened or endangered because of a combination of biological characteristics and identified threats.

SARO Status	
RANK	DEFINITION
EXP	Extirpated - A species that no longer exists in the wild in Ontario but still occurs elsewhere.
END	Endangered - A species facing imminent extinction or extirpation in Ontario.
THR	Threatened - A species that is at risk of becoming endangered in Ontario if limiting factors are not reversed.
SC	Special Concern - A species with characteristics that make it sensitive to human activities or natural events.

Global (G) Conservation Status Ranks	
GLOBAL	DEFINITION
GX	Presumed Extinct (species) - Not located despite intensive searches and virtually no likelihood of rediscovery Presumed Eliminated (ecosystems, i.e., ecological communities and systems) - Eliminated throughout its range, due to loss of key dominant and characteristic taxa and/or elimination of the sites and ecological processes on which the type depends
GH	Possibly Extinct (species) or Possibly Eliminated (ecosystems) - Known from only historical occurrences but still some hope of rediscovery. Examples of evidence include (1) that a species has not been documented in approximately 20-40 years despite some searching and/or some evidence of significant habitat loss or degradation; (2) that a species or ecosystem has been searched for unsuccessfully, but not thoroughly enough to presume that it is extinct or eliminated throughout its range.
G1	Critically Imperiled - At very high risk of extinction or elimination due to very restricted range, very few populations or occurrences, very steep declines, very severe threats, or other factors.
G2	Imperiled - At high risk of extinction or elimination due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.
G3	Vulnerable - At moderate risk of extinction or elimination due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.
G4	Apparently Secure - At fairly low risk of extinction or elimination due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.
G5	Secure - At very low risk of extinction or elimination due to a very extensive range, abundant populations or occurrences, and little to no concern from declines or threats.

Variant Global Conservation Status Ranks	
RANK	DEFINITION
G#G#	Range Rank - A numeric range rank (e.g., G2G3, G1G3) is used to indicate uncertainty about the exact status of a taxon or ecosystem type. Ranges cannot skip more than two ranks (e.g., GU should be used rather than G1G4).
GU	Unrankable - Currently unrankable due to lack of information or due to substantially conflicting information about status or trends. NOTE: Whenever possible (when the range of uncertainty is three consecutive ranks or less), a range rank (e.g., G2G3) should be used to delineate the limits (range) of uncertainty.
GNR	Unranked - Global rank not yet assessed.
GNA	Not Applicable - A conservation status rank is not applicable because the species or ecosystem is not a suitable target for conservation activities. A global conservation status rank may be not applicable for several reasons, related to its relevance as a conservation target. For species, typically the species is a hybrid without conservation value, or of domestic origin. For ecosystems, the type is typically non-native (e.g. many ruderal vegetation types), agricultural (e.g. pasture, orchard) or developed (e.g. lawn, garden, golf course).

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

Plant Form or Type Codes		
CODE	FORM	DESCRIPTION
FE	Fern	non-flowering, vascular plant, reproducing by spores - Pteridophytes. Including the fern allies such as horsetail, club-moss and quillwort.
FO	Forb	herbaceous broad-leaved plant
GR	Grass	graminoid plants in the Poaceae
RU	Rush	graminoid plants in the Juncaceae
SE	Sedge	graminoid plants in the Cyperaceae
SH	Shrub	plants with erect, reclining or prostrate woody stems (usually with more than one stem)
TR	Tree	woody perennial plant having a single (1-3) stem, usually with an elongate main stem (trunk)
VI	Vine	herbaceous plant that trail, cling, or twine, and requires support to grow vertically
VW	Woody Vine	a vine with a perennial woody stem

Coefficient of Wetness				
CW VALUE	ABBRV.	INDICATOR STATUS	% OCCUR. IN WETLANDS	DEFINITION
-5	OBL	Obligate Wetland	99	Almost always occur in wetlands. With few exceptions, these plants (herbaceous or woody) are found in standing water or seasonally saturated soils (14 or more consecutive days) near the surface.
-4	FACW+			
-3	FACW	Facultative Wetland	67-99	Usually occur in wetlands, but may occur in non-wetlands. These plants predominately occur with hydric soils, often in geomorphic settings where water saturates the soils or floods the soil surface at least seasonally.
-2	FACW-			
-1	FAC+			
0	FAC	Facultative	34-66	Occur in wetlands and nonwetlands. These plants can grow in hydric, mesic, or xeric habitats. The occurrence of these plants in different habitats represents responses to a variety of environmental variables other than just hydrology, such as shade tolerance, soil pH, and elevation, and they have a wide tolerance of soil moisture conditions.
1	FAC-			
2	FACU+			
3	FACU	Facultative Upland	1-33	Usually occur in non-wetlands, but may occur in wetlands. These plants predominately occur on drier or more mesic sites in geomorphic settings where water rarely saturates the soils or floods the soil surface seasonally.
4	FACU-			
5	UPL	Obligate Upland	1	Almost never occur in wetlands. These plants occupy mesic to xeric non-wetland habitats. They almost never occur in standing water or saturated soils. Typical growth forms include herbaceous, shrubs, woody vines, and trees.

"+" or "-" signs have been attached to the three Facultative categories to express exaggerated tendencies for those species. The "+" sign denotes that the species generally has a greater estimated probability of occurring in wetlands than species having the general indicator category, but a lesser estimated probability of occurring in wetlands than those having the next higher general indicator. The "-" sign denotes that the species generally has a lesser estimated probability of occurring in wetlands than those having the general indicator status, but a greater estimated probability of occurring in wetlands than those having the next lowest general indicator.

Flowering Season		
CODE	FORM	DESCRIPTION
Win	Winter	Flowers from from December through March.
Spr	Spring	Flowers from mid-March through to about mid-June.
Sum	Summer	Flowers from about early June through to the end of August.
Aut	Autumn	Flowers from late August through to the end of November.

The flowering seasons, as they are used within the 'Species List' worksheet, utilize the convention applied by the Ontario Wildflowers website. The seasons are not defined in the strict calendar sense (i.e., summer starting on June 21, etc). Rather, a looser definition is used in order to more accurately characterize a species flowering phenology for southern Ontario. Species with longer flowering periods are listed as flowering during multiple seasons (e.g., Spr-Sum - flowers in the Spring and Summer seasons if it typically blooms from late May through mid June).

Climate Change Vulnerability Index (CCVI)	
CCVI Score Abbreviations	
CODE	DEFINITION
EV	Extremely Vulnerable - Abundance and/or range extent within geographical area assessed extremely likely to substantially decrease or disappear by 2050.
HV	Highly Vulnerable - Abundance and/or range extent within geographical area assessed likely to decrease significantly by 2050.
MV	Moderately Vulnerable - Abundance and/or range extent within geographical area assessed likely to decrease by 2050.
LV	Less Vulnerable - Available evidence does not suggest that abundance and/or range extent within the geographical area assessed will increase/decrease substantially by 2050. Actual range boundaries may change.

Intraspecific Taxon Global Conservation Status Ranks

RANK	DEFINITION
T#	Intraspecific Taxon (trinomial) - The status of intraspecific taxa (subspecies or varieties) are indicated by a "T-rank" following the species' global rank. Rules for assigning T-ranks follow the same principles outlined above. For example, the global rank of a critically imperiled subspecies of an otherwise widespread and common species would be G5T1. A T subrank cannot imply the subspecies or variety is more abundant than the species, for example, a G1T2 subrank should not occur. A vertebrate animal population (e.g., listed under the U.S. Endangered Species Act or assigned candidate status) may be tracked as an intraspecific taxon and given a T rank; in such cases a Q is used after the T-rank to denote the taxon's informal taxonomic status.

National (N) and Subnational (S) Conservation Status Ranks

RANK	DEFINITION
NX	Presumed Extirpated - Species or ecosystem is believed to be extirpated from the jurisdiction (i.e., nation, or state/province). Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered. [equivalent to "Regionally Extinct" in IUCN Red List terminology]
SX	
NH	Possibly Extirpated - Known from only historical records but still some hope of rediscovery. There is evidence that the species or ecosystem may no longer be present in the jurisdiction, but not enough to state this with certainty. Examples of such evidence include (1) that a species has not been documented in approximately 20-40 years despite some searching and/or some evidence of significant habitat loss or degradation; (2) that a species or ecosystem has been searched for unsuccessfully, but not thoroughly enough to presume that it is no longer present in the jurisdiction.
SH	
N1	Critically Imperiled - At very high risk of extirpation in the jurisdiction due to very restricted range, very few populations or occurrences, very steep declines, severe threats, or other factors.
S1	
N2	Imperiled - At high risk of extirpation in the jurisdiction due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.
S2	
N3	Vulnerable — At moderate risk of extirpation in the jurisdiction due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.
S3	
N4	Apparently Secure - At a fairly low risk of extirpation in the jurisdiction due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.
S4	
N5	Secure - At very low or no risk of extirpation in the jurisdiction due to a very extensive range, abundant populations or occurrences, with little to no concern from declines or threats.
S5	

Variant National and Subnational Conservation Status Ranks

RANK	DEFINITION
N#	Range Rank - A numeric range rank (e.g., S2S3 or S1S3) is used to indicate any range of uncertainty about the status of the species or ecosystem. Ranges cannot skip more than two ranks (e.g., SU is used rather than S1S4).
S#	
NU	Unrankable - Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
SU	
NNR	Unranked - National or subnational conservation status not yet assessed.
SNR	
NNA	Not Applicable - A conservation status rank is not applicable because the species or ecosystem is not a suitable target for conservation activities (e.g., long distance aerial and aquatic migrants, hybrids without conservation value, and non-native species or ecosystems (see Master et al. 2012, Appendix A, pg 70 for further details).
SNA	
Not Provided	Species or ecosystem is known to occur in this nation or state/province. Contact the appropriate NatureServe network program for assignment of conservation status.

Rank Qualifier

RANK	DEFINITION
N#?	Inexact Numeric Rank - Denotes inexact numeric rank; this should not be used with any of the Variant National or Subnational Conservation Status Ranks, or NX, SX, NH, or SH.
S#?	

CCVI Confidence Levels

LEVEL	DEFINITION
VH	Very High - >90% confidence.
High	High - 80–90% confidence.
Mod	Moderate - 60 - 80% confidence.
Low	Low - <60% confidence.

L-rank: TRCA local rank (assigned June 2021)	DEFINITION
L1-L3	species of regional conservation concern
L4	species of conservation concern in urban area
L5	species not of conservation concern at this time
LX	species is extirpated from TRCA
L+	introduced species, not native to TRCA
L+?	species is likely introduced to TRCA
LU	presence of species in TRCA unverified/unknown

L-rank: TRCA local rank	DEFINITION
L1-L3	species of regional conservation concern
L4	species of conservation concern in urban area
L5	species not of conservation concern at this time
LX	species is extirpated from TRCA
L+	introduced species, not native to TRCA
L+?	species is likely introduced to TRCA
LU	presence of species in TRCA unverified/unknown

Appendix C

**Species at Risk and Species
of Conservation Concern
Habitat Screening**



Appendix C. Species at Risk and Species of Conservation Concern Habitat Screening

Taxonomy	Species	S-Rank	ESA Status	SARA Status	COSEWIC Status	Preferred Habitat ^{1, 2, 3}	Associated ELC Communities	Known Species Range ^{1, 2, 3}	Source Identifying Species Record	Likelihood of Species/Habitat Presence Based on Field Investigations
Birds	Bank Swallow <i>Riparia riparia</i>	S4B	THR	THR Schedule 1	THR	<ul style="list-style-type: none"> Bank Swallows nest in burrows in natural and human-made settings where there are vertical faces in silt and sand deposits. Many nests are on banks of rivers and lakes, but they are also found in active sand and gravel pits or former ones where the banks remain suitable. The birds breed in colonies ranging from several to a few thousand pairs. The Bank Swallow breeds in a wide variety of natural and artificial sites with vertical banks, including riverbanks, lake and ocean bluffs, aggregate pits, road cuts, and stock piles of soil. Sand-silt substrates are preferred for excavating nest burrows. Breeding sites tend to be somewhat ephemeral due to the dynamic nature of bank erosion. Breeding sites are often situated near open terrestrial habitat used for aerial foraging (e.g., grasslands, meadows, pastures, and agricultural cropland). Large wetlands are used as communal nocturnal roost sites during post-breeding, migration, and wintering periods. 		<ul style="list-style-type: none"> The Bank Swallow is found all across southern Ontario, with sparser populations scattered across northern Ontario. The largest populations are found along the Lake Erie and Lake Ontario shorelines, and the Saugeen River (which flows into Lake Huron). In North America, it breeds widely across the northern two-thirds of the U.S., north to the treeline. It breeds in all Canadian provinces and territories, except perhaps Nunavut. 	OBBA	Low Probability: No vertical banks of appropriate substrate within Study Area.
Birds	Barn Swallow <i>Hirundo rustica</i>	S4B	SC	THR Schedule 1	SC	<ul style="list-style-type: none"> Barn Swallows often live in close association with humans, building their cup-shaped mud nests almost exclusively on human-made structures such as open barns, under bridges, and in culverts. The species is attracted to open structures that include ledges where they can build their nests, which are often re-used from year to year. They prefer unpainted, rough-cut wood, since the mud does not adhere as well to smooth surfaces. Before European colonization, Barn Swallows nested mostly in caves, holes, crevices, and ledges in cliff faces. Following European settlement, they shifted largely to nesting in and on artificial structures, including barns and other outbuildings, garages, houses, bridges, and road culverts. Barn Swallows prefer various types of open habitats for foraging, including grassy fields, pastures, various kinds of agricultural crops, lake and river shorelines, cleared rights-of-way, cottage areas and farmyards, islands, wetlands, and subarctic tundra. 	TPO, CUM1, MAM, MAS, OAO, SAS1, SAM1, SAF1; containing or adjacent structures that are suitable for nesting.	<ul style="list-style-type: none"> The Barn Swallow may be found throughout southern Ontario and can range as far north as Hudson Bay, wherever suitable locations for nests exist. The Barn Swallow has become closely associated with human rural settlements. It breeds across much of North America south of the treeline, south to central Mexico. In Canada, it is known to breed in all provinces and territories. 	OBBA, AECOM 2020, eBird	Medium Probability: This species was observed by AECOM as documented in the 2020 Addendum. Individuals were observed within the hydro transmission corridor along the west side of McCowan Road north of Lawrence Avenue East, however, this location is not within the NER Study Area. The species was not observed during field investigations on May 9, 2024, but suitable nest habitat may be present on buildings with suitable ledges and attachment sites.

Appendix C. Species at Risk and Species of Conservation Concern Habitat Screening

Taxonomy	Species	S-Rank	ESA Status	SARA Status	COSEWIC Status	Preferred Habitat ^{1, 2, 3}	Associated ELC Communities	Known Species Range ^{1, 2, 3}	Source Identifying Species Record	Likelihood of Species/Habitat Presence Based on Field Investigations
Birds	Bobolink <i>Dolichonyx oryzivorus</i>	S4B	THR	THR Schedule 1	THR	<ul style="list-style-type: none"> Historically, Bobolinks lived in North American tallgrass prairie and other open meadows. With the clearing of native prairies, Bobolinks moved to living in hayfields. Bobolinks often build their small nests on the ground in dense grasses. Both parents usually tend to their young, sometimes with a third Bobolink helping. Most of this prairie was converted to agricultural land over a century ago, and at the same time the forests of eastern North America were cleared to hayfields and meadows that provided habitat for the birds. Since the conversion of the prairie to cropland and the clearing of the eastern forests, the Bobolink has nested in forage crops (e.g., hayfields and pastures dominated by a variety of species, such as clover, Timothy, Kentucky Bluegrass, and broadleaved plants). The Bobolink also occurs in various grassland habitats including wet prairie, graminoid peatlands, and abandoned fields dominated by tall grasses, remnants of uncultivated virgin prairie (tall-grass prairie), no-till cropland, small-grain fields, restored surface mining sites, and irrigated fields in arid regions. It is generally not abundant in short-grass prairie, Alfalfa fields, or in row crop monocultures (e.g., corn, soybean, wheat), although its use of Alfalfa may vary with region. 	TPO, TPS, CUM1 and MAM2.	<ul style="list-style-type: none"> The Bobolink breeds across North America. In Ontario, it is widely distributed throughout most of the province south of the boreal forest, although it may be found in the north where suitable habitat exists. The breeding range of the Bobolink in North America includes the southern part of all Canadian provinces from British Columbia to Newfoundland and Labrador and south to the northwestern, north-central and northeastern U.S. 	NHIC, OBBA	Low Probability: No suitable large meadows were identified in the Study Area.
Birds	Chimney Swift <i>Chaetura pelagica</i>	S4B,S4N	THR	THRSchedule 1	THR	<ul style="list-style-type: none"> Before European settlement, Chimney Swifts mainly nested on cave walls and in hollow trees or tree cavities in old growth forests. However, due to the land clearing associated with colonization, hollow trees became increasingly rare, which led Chimney Swifts to move into house chimneys. Today, they are more likely to be found in and around urban settlements where they nest and roost (rest or sleep) in chimneys and other manmade structures. It is likely that a small portion of the population continues to use hollow trees. They also tend to stay close to water as this is where the flying insects they eat congregate. The Chimney Swift spends the major part of the day in flight feeding on insects. In the northern part of the breeding range, the Chimney Swift favours sites where the ambient temperature is relatively stable. 	TPO, CUM1, MAM, MAS, OAO, SAS1, SAM1, SAF1 containing or adjacent structures with suitable nesting habitat (i.e. chimneys).	<ul style="list-style-type: none"> The Chimney Swift breeds in eastern North America, possibly as far north as southern Newfoundland. In Ontario, it is most widely distributed in the Carolinian zone in the south and southwest of the province, but has been detected throughout most of the province south of the 49th parallel. The Chimney Swift breeds mainly in eastern North America, from southern Canada down to Texas and Florida. The species breeds in east central Saskatchewan, southern Manitoba, southern Ontario, southern Quebec, New Brunswick, Nova Scotia, and possibly in Prince Edward Island and southwestern Newfoundland. 	OBBA, eBird	Medium Probability: Buildings with potentially suitable chimneys for nests may be present within Study Area.

Appendix C. Species at Risk and Species of Conservation Concern Habitat Screening

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Birds	Common Nighthawk <i>Chordeiles minor</i>	S4B	SC	THR Schedule 1	SC	<ul style="list-style-type: none"> Traditional Common Nighthawk habitat consists of open areas with little to no ground vegetation, such as logged or burned-over areas, forest clearings, rock barrens, peat bogs, lakeshores, and mine tailings. Although the species also nests in cultivated fields, orchards, urban parks, mine tailings, and along gravel roads and railways, they tend to occupy natural sites. The Common Nighthawk nests in a wide range of open, vegetation-free habitats, including dunes, beaches, recently harvested forests, rocky outcrops, grasslands, pastures, marshes, and river banks. This species also inhabits mixed and coniferous forests. The Common Nighthawk probably benefited from the newly-opened habitats created by the massive deforestation associated with the arrival of European settlers in eastern Canada and United States. The appearance of gravel roofs contributed to the expansion of the Common Nighthawk's habitat in North America. 	SD, BB, RB, CUM, BO, FOM, FOC and FOD with openings with little vegetation.	<ul style="list-style-type: none"> The range of the Common Nighthawk spans most of North and Central America. In Canada, the species is found in all provinces and territories except Nunavut. In Ontario, the Common Nighthawk occurs throughout the province except for the coastal regions of James Bay and Hudson Bay. 	OBBA	Medium Probability: Potentially suitable buildings with flat, gravel roofs may be present within Study Area.
Birds	Eastern Meadowlark <i>Sturnella magna</i>	S4B	THR	THR Schedule 1	THR	<ul style="list-style-type: none"> Eastern Meadowlarks breed primarily in moderately tall grasslands, such as pastures and hayfields, but are also found in alfalfa fields, weedy borders of croplands, roadsides, orchards, airports, shrubby overgrown fields, or other open areas. Small trees, shrubs, or fence posts are used as elevated song perches. Eastern Meadowlarks prefer grassland habitats, including native prairies and savannahs, as well as non-native pastures, hayfields, weedy meadows, herbaceous fencerows, and airfields. 	TPO, TPS, CUM1, CUS, and MAM2 with elevated song perches.	<ul style="list-style-type: none"> In Ontario, the Eastern Meadowlark is primarily found south of the Canadian Shield but it also inhabits the Lake Nipissing, Timiskaming, and Lake of the Woods areas. Including all subspecies, the Eastern Meadowlark's global breeding range extends from central and eastern North America, south through parts of South America. However, there is only one subspecies in Canada and the neighbouring northeastern U.S. In Canada, the bulk of the population breeds in southern Ontario. 	NHIC, OBBA	Low Probability: No suitable large meadows were identified in the Study Area.
Birds	Eastern Wood-pewee <i>Contopus virens</i>		SC	SC Schedule 1	SC	<ul style="list-style-type: none"> The Eastern Wood-pewee lives in the mid-canopy layer of forest clearings and edges of deciduous and mixed forests. It is most abundant in intermediate-age mature forest stands with little understory vegetation. During migration, a variety of habitats are used, including forest edges and early successional clearings. 	FOC, FOM, FOD, SWD, SWM and CUW.	<ul style="list-style-type: none"> The Eastern Wood-pewee is found across most of southern and central Ontario, and in northern Ontario as far north as Red Lake, Lake Nipigon, and Timmins. The breeding range of the Eastern Wood-pewee covers much of south-central and eastern North America. 	NHIC, eBird	Medium Probability Treed communities may provide suitable nesting habitat.

Appendix C. Species at Risk and Species of Conservation Concern Habitat Screening

Taxonomy	Species	S-Rank	ESA Status	SARA Status	COSEWIC Status	Preferred Habitat ^{1, 2, 3}	Associated ELC Communities	Known Species Range ^{1, 2, 3}	Source Identifying Species Record	Likelihood of Species/Habitat Presence Based on Field Investigations
Birds	Great Egret <i>Ardea alba</i>	S2B	No Status	No Status	No Status	<ul style="list-style-type: none"> "Marshes, ponds, shores, mud flats. Usually forages in rather open situations, as along edges of lakes, large marshes, shallow coastal lagoons and estuaries; also along rivers in wooded country. Usually nests in trees or shrubs near water, sometimes in thickets some distance from water, sometimes low in marsh."⁵ 		<ul style="list-style-type: none"> Within Ontario, EcoRegion 6E and 7E. "Withdraws in winter from northern breeding areas, wintering only where waters remain open. After breeding season, often wanders far to north in late summer."⁵ 	iNat	Low Probability: Suitable nesting habitat was not present within the Study Area.
Birds	Peregrine Falcon <i>Falco peregrinus</i> Peregrine Falcon (anatum/tundrius) <i>Falco peregrinus anatum/tundrius</i>	S3B	SC	SC Schedule 1	Not At Risk	<ul style="list-style-type: none"> Peregrine Falcons usually nest on tall, steep cliff ledges close to large bodies of water. Although most people associate Peregrine Falcons with rugged wilderness, some of these birds have adapted well to city life. Urban peregrines raise their young on ledges of tall buildings, even in busy downtown areas. Cities offer peregrines a good year-round supply of pigeons and starlings to feed on. The Peregrine Falcon is found in various types of habitats, from Arctic tundra to coastal areas and from prairies to urban centres. It usually nests alone on cliff ledges or crevices, preferably 50 to 200 m in height, but sometimes on the ledges of tall buildings or bridges, always near good foraging areas. Suitable nesting sites are usually dispersed, but can be common locally in some areas. The natural nesting habitat has not changed significantly since the population crash and is still largely available. In addition, structures built by humans in both rural and urban areas provide the Peregrine Falcon with other potential nesting sites. And though urbanization and other land uses have had a significant impact on some areas where they feed, Peregrine Falcons can usually modify their diet based on the prey species present in a given area. 	CLO	<ul style="list-style-type: none"> The historic North American distribution of the eastern subspecies is east of the Rocky Mountains and south of the tree line. Although Peregrine Falcons now nest in and around Toronto and several other southern Ontario cities, the majority of Ontario's breeding population is found around Lake Superior in northwestern Ontario. The anatum Peregrine Falcon breeds in the interior of Alaska and throughout northern Canada up to southern Greenland, and across continental North America up to northern Mexico. In Canada it is found in all territories and provinces except Prince Edward Island, Nunavut, and the Island of Newfoundland. The tundrius Peregrine Falcon breeds in Alaska and throughout northern Canada up to Greenland. In Canada, it breeds from northern Yukon, the low Arctic islands, northern Northwest Territories, and northern Nunavut up to Baffin Island, Hudson Bay, Ungava, and northern Labrador. 	NHIC, OBBA, iNat	Medium Probability: Suitable nest habitat may be present on tall buildings within the Study Area. Presence outside of Study Area near Kennedy Station has been confirmed through observation logged on iNaturalist. No individuals or nests observed during field investigations.

Appendix C. Species at Risk and Species of Conservation Concern Habitat Screening

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Birds	Purple Martin <i>Progne subis</i>	S3S4B	No Status	No Status	No Status	<ul style="list-style-type: none"> "Towns, farms, semi-open country near water; in west, also mountain forest, saguaro desert. In the east, breeds in any kind of semi-open area where nest sites are provided, especially near a pond or river. More local in the west, with isolated colonies breeding around woodland edges, clearings in mountain forest, and lowland desert with giant saguaro cactus."⁵ 		<ul style="list-style-type: none"> Commonly breeds in Ontario up to Ecoregion 5E as well as closely along the shores of the Great Lakes northwest to Manitoba. "Usually nests in colonies, especially in east, where almost all are in multiple-roomed nest boxes put up for them. Western martins may nest in looser colonies or as isolated pairs. Male will sometimes have more than one mate. Nest: Natural sites are in cavities, mostly old woodpecker holes, in trees (or in giant cactus in southwest). In the east, most martins now use nest boxes. Sometimes nests in holes in buildings or cliffs."⁵ 	OBBA	<p>Low Probability: Suitable semi-open habitat may be present above the rail corridor and adjacent CUM communities, however no nesting boxes have been provided for this species and suitable forested areas containing cavities are limited.</p>
Birds	Red-headed Woodpecker <i>Melanerpes erythrocephalus</i>	S3	SC	THR Schedule 1	END	<ul style="list-style-type: none"> The Red-headed Woodpecker lives in open woodland and woodland edges, and is often found in parks, golf courses, and cemeteries. These areas typically have many dead trees, which the bird uses for nesting and perching. A few of these birds will stay the winter in woodlands in southern Ontario if there are adequate supplies of nuts. The Red-headed Woodpecker is found in a variety of habitats, including oak and beech forests, grasslands, forest edges, orchards, pastures, riparian forests, roadsides, beaver ponds, and burns. 	<p>TPS, TPW, CUW, FOD1, FOD2, FOD4-1, FOD6, FOD7, and FOD9 that are open and have an abundance of dead trees.</p>	<ul style="list-style-type: none"> The Red-headed Woodpecker is found across southern Ontario, where it is widespread but rare. In Canada, its range includes southern Saskatchewan, Manitoba, Ontario, and Quebec. 		<p>Medium Probability: Cavity trees did not exist within the CDA, or field-assessed ELC communities. However, there is a moderate probability for cavity trees to exist within the Study Area in communities that were not searched.</p>
Birds	Wood Thrush <i>Hylocichla mustelina</i>	S4B	SC	THRSchedule 1	THR	<ul style="list-style-type: none"> The Wood Thrush lives in mature deciduous and mixed (conifer-deciduous) forests. They seek moist stands of trees with well-developed undergrowth and tall trees for singing perches. These birds prefer large forests, but will also use smaller stands of trees. They build their nests in living saplings, trees, or shrubs, usually in Sugar Maple or American Beech. In Canada, the Wood Thrush nests mainly in second-growth and mature deciduous and mixed forests, with saplings and well-developed understory layers. This species prefers large forest mosaics, but may also nest in small forest fragments. 	<p>FOD and FOM that are greater than 1 ha in size.</p>	<ul style="list-style-type: none"> The Wood Thrush is found all across southern Ontario. It is also found, but less common, along the north shore of Lake Huron, as far west as the southeastern tip of Lake Superior. There is a very small population near Lake of the Woods in northwestern Ontario, and there have been scattered sightings in the mixed forest of northern Ontario. The Wood Thrush breeds in southeastern Canada from southern Ontario east to Nova Scotia. 	NHIC, OBBA, AECOM 2017	<p>Medium Probability: This species was observed by AECOM (2020) within Frank Faubert Woods, however, this location is not within the NER Study Area. No alternative forested area with a developed understory is present within the current Study Area.</p>

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Insects	American Burying Beetle <i>Nicrophorus americanus</i>	SH	EXP	EXP Schedule 1	EXP	<ul style="list-style-type: none"> American Burying Beetles prefer undisturbed deciduous forest, but have been found in many kinds of habitat. They seem to have three requirements – soil in which they can dig a chamber for their eggs and larvae, enough carcasses for food, and few enough competitors for these carcasses. The species requires well-drained humic or loamy soils without impediments to digging in order to quickly excavate the brood chamber in which to lay its eggs. In eastern North America, soils of this type occur principally in primary, undisturbed deciduous forest. Toward the west side of its range these soils are available in grassland ecotypes as well. There is, as yet, no consensus on whether the species is obligate on particular habitat types. 		<ul style="list-style-type: none"> This beetle was once found north of lakes Erie and Ontario from Windsor to Toronto. It has not been seen in Ontario since 1972, despite extensive surveys. The species occurs only in North America, where its historical range extended from Nebraska and South Dakota east to the Atlantic Coast, and from southern Ontario south to Texas. In Canada, it is known definitely only from Ontario; however, all reports are historic. It appears very unlikely that the American Burying Beetle has been present but undocumented anywhere within its range in the last quarter century. 	NHIC	<p>Low Probability: Suitable undisturbed forest not present within Study Area. All records of species are historical.</p>
Insects	Meske's Underwing <i>Catocala meskei</i>	S3	No Status	No Status	No Status	<ul style="list-style-type: none"> This species is found in riparian areas where its host plants, cottonwood and willow trees, grow, including suburban areas. The larvae feed on Populus and Salix species. Adult Catocala moths feed primarily on non-nectar sugar sources, although some species visit flowers occasionally to feed on nectar 	FOD7, FOD8, and SWT, SWD communities dominated by poplars or willows. Can include urban environments, and riparian areas.	<ul style="list-style-type: none"> This species occurs across southeastern Canada from southern Alberta to Nova Scotia and throughout the northern United States east of the Rocky Mountains from Idaho to Vermont, south to Long Island, New York in the east and Colorado in the west. 	OMA	<p>Medium Probability: The SWT2-2 community contains host plants for this species and may therefore provide potential habitat.</p>

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Insects	Monarch <i>Danaus plexippus</i>	S2N,S4 B	SC	SCSchedule 1	END	<p>■ Throughout their life cycle, Monarchs use three different types of habitat. Only the caterpillars feed on milkweed plants and are confined to meadows and open areas where milkweed grows. Adult butterflies can be found in more diverse habitats where they feed on nectar from a variety of wildflowers. Milkweeds (numerous species) are the sole food plant for Monarch caterpillars. These plants grow predominantly in open and periodically disturbed habitats such as roadsides, fields, wetlands, prairies, and open forests. Milkweeds are often planted outside their native range, and sometimes wayward Monarchs are observed at these patches. Monarchs require staging areas which are used to rest, feed, and avoid inclement weather during migration. In Canada, they are found along the north shores of the Great Lakes where Monarchs roost in trees before crossing large areas of open water.</p>	AI, TP, and CUM where milkweed plants are present.	<p>■ The Monarch's range extends from Central America to southern Canada. In Canada, Monarchs are most abundant in southern Ontario and Quebec where milkweed plants and breeding habitat are widespread. During late summer and fall, Monarchs from Ontario migrate to central Mexico where they spend the winter months. During migration, groups of Monarchs numbering in the thousands can be seen along the north shores of Lake Ontario and Lake Erie. The overall native range of the Monarch occurs from Central America northward through the continental United States to southern Canada, and from the Atlantic Coast westward to the Pacific Coast. The Canadian range of occurrence includes portions of all ten provinces and the Northwest Territories. Monarchs are loosely divided into eastern and western subgroups based on their migratory routes and overwintering sites. Eastern Monarchs breed from Alberta east to Nova Scotia and migrate south to overwinter in the mountains of Central Mexico. The breeding range in Canada is south of the 50° latitude in Ontario, Quebec, and the Maritimes. Each fall hundreds of thousands of Monarchs migrate through Long Point in southern Ontario but it's unknown what proportion of the Canadian population these individuals represent.</p>	OBA, iNat	<p>High Probability: Suitable habitat may be present within the CUM1-1e community within the Study Area as Common Milkweed (<i>Asclepias syriaca</i>) was observed, albeit in very limited numbers. Presence within the Study Area south of this community has been confirmed through observation logged on iNaturalist. Multiple other observations of the species have been logged in the areas surrounding the Study Area on iNaturalist.</p>

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Insects	Mottled Duskywing (Great Lakes Plains population) <i>Erynnis martialis</i>	S2	END	No Status	END	<ul style="list-style-type: none"> While many butterflies thrive in lush meadows, the Mottled Duskywing tends to live in dry habitats with sparse vegetation. These include open barrens, sandy patches among woodlands, and alvars. (Alvars are areas of limestone with shallow soil and sparse vegetation of grasses, shrubs, and wildflowers.) In Ontario, the Mottled Duskywing will only deposit their eggs on two closely-related plants: New Jersey Tea and Prairie Redroot. Larvae build silk leaf-nests and spend the winter as mature larvae, emerging as adults between mid-May and late June. In southwestern Ontario, a second brood matures in early July and takes flight between mid-July and late August. The Mottled Duskywing requires its host plants, New Jersey Tea (Great Lakes Plains DU) and Prairie Redroot (Boreal DU), during its life cycle. In Canada, these plants grow in dry, well-drained soils or alvar habitat within oak woodland, pine woodland, roadsides, riverbanks, shady hillsides, and tall grass prairies. The butterfly is frequently absent from apparently suitable host plant patches, suggesting additional limiting factors play a role in the species' site occupancy. The host plants also appear to be declining throughout most of the butterfly's range and the habitats may also be imperiled. 	TP, FOM1, FOM2, FOD1	<ul style="list-style-type: none"> Scattered populations of this butterfly occur throughout southern Ontario. They have recently been documented in the Burlington and Oakville areas, and in Marmora (east of Peterborough). Some documented sites are within protected areas, including provincial parks and land set aside for conservation. The species extends into Canada in southeastern Manitoba and southern Ontario with populations in each region being separate designatable units (DU): the Boreal population (southern Manitoba) and Great Lakes Plains population (southern Ontario and historically Québec). 	OBA	<p>Low Probability: This species was last observed in 1896 and has since been locally extirpated. Its host plant, New Jersey Tea (<i>Ceanothus americanus</i>), was not detected during botanical inventories.</p>
Insects	Phyllira Tiger Moth <i>Apantesis phyllira</i>	S3	No Status	No Status	No Status	<ul style="list-style-type: none"> This species is found in dry grassland, savannas, and open woodlands, including old fields, and in prairies with sandy soils. The larvae feed on various low-growing plants, including corn, lupine and tobacco. 	TP, CUS	<ul style="list-style-type: none"> This species has a spotty occurrence across its range and is known to occur in Alberta and southeastern Ontario, Canada and generally throughout the United States east of the Rocky Mountains from Montana to Maine south to northern Florida and west to Colorado. 	OMA	<p>Low Probability: Although meadows are present within the Study Area, these are not considered to be quality dry grass lands and are unlikely to support this species. .</p>

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Insects	Swamp Darner <i>Epiaschna heros</i>	S2S3	No Status	No Status	No Status	■ Swamp Darner nymphs in habitat shaded ponds, streams, swamps, and vernal pools. Adults are migratory and can travel far distances.	SW, OAO in wooded areas.	■ Swamp Darners range from the southern United States up to central Ontario, and from the central United States eastward to the Atlantic Coast.	iNat	Low Probability: This species was observed in Lord Roberts Woods in mid-May. Given the time of the observation this record likely represents a spring migrant. Lord Roberts Woods does not offer habitat for oviposition, and the surrounding stormwater management ponds are anticipated to be of too poor quality to support this species.
Insects	The Betrothed <i>Catocala innubens</i>	S3	No Status	No Status	No Status	■ Exact habitat associations for this species are undescribed, but this species larval host plants are honey locust and black walnut, so it is likely associated with woodland and forested areas and has been found in old fields containing those trees.	FOD with abundant honey locust or walnut.	■ This species occurs in southeastern Ontario and in Quebec, Canada as well as throughout the United States east of the Rocky Mountains.	OMA	Low Probability: Honey locust and black walnut communities are not present within the Study Area.
Insects	Youthful Underwing <i>Catocala subnata</i>	S3	No Status	No Status	No Status	■ This species has been found in forests. The larvae feed on <i>Carya cordiformis</i> , <i>Juglans cinerea</i> , and <i>Juglans nigra</i> . Adult <i>Catocala</i> moths feed primarily on non-nectar sugar sources, although some species visit flowers occasionally to feed on nectar.	FOD with abundant hickory or walnut.	■ This species occurs in southern Ontario and Quebec, Canada and throughout the United States east of the Central Plains from Wisconsin and Iowa to New Hampshire and Massachusetts, south to North Carolina and west to Oklahoma.	OMA	Low Probability: Honey locust, hickory, and walnut communities are not present within the Study Area.
Mammals	Eastern Small-footed Myotis (Eastern Small-footed Bat) <i>Myotis leibii</i>	S2S3	END	N/A	N/A	■ In the spring and summer, Eastern Small-footed Bats will roost in a variety of habitats, including in or under rocks, in rock outcrops, in buildings, under bridges, or in caves, mines, or hollow trees. These bats often change their roosting locations every day. At night, they hunt for insects to eat, including beetles, mosquitos, moths, and flies. In the winter, these bats hibernate, most often in caves and abandoned mines. They seem to choose colder and drier sites than similar bats and will return to the same spot each year.	FOC, FOM, FOD, SWC, SWM, and SWD where suitable roosting (i.e. cavity trees and trees with loose bark) habitat is available.	■ The Eastern Small-footed Bat has been found from south of Georgian Bay to Lake Erie and east to the Pembroke area. There are also records from the Bruce Peninsula, the Espanola area, and Lake Superior Provincial Park. Most documented sightings are of bats in their winter hibernation sites.	BCI	Medium Probability: Suitable forested habitat may be present within the FOD5-1 community that makes up Lord Roberts Woods, the FODM4-5 and FODM4-12 communities, and the two CUW1 communities within the Study Area.

Appendix C. Species at Risk and Species of Conservation Concern Habitat Screening

Taxonomy	Species	S-Rank	ESA Status	SARA Status	COSEWIC Status	Preferred Habitat ^{1, 2, 3}	Associated ELC Communities	Known Species Range ^{1, 2, 3}	Source Identifying Species Record	Likelihood of Species/Habitat Presence Based on Field Investigations
Mammals	Little Brown Myotis (Little Brown Bat) <i>Myotis lucifugus</i>	S3	END	END Schedule 1	END	<ul style="list-style-type: none"> Bats are nocturnal. During the day they roost in trees and buildings. They often select attics, abandoned buildings, and barns for summer colonies where they can raise their young. Bats can squeeze through very tiny spaces (as small as six millimetres across) and this is how they access many roosting areas. Little Brown Bats hibernate from October or November to March or April, most often in caves or abandoned mines that are humid and remain above freezing. Their specific physiological requirements limit the number of suitable sites for overwintering. In the east, large numbers (i.e., >3000 bats) of several species typically overwinter in relatively few hibernacula. In the west, there are fewer known hibernacula, and numbers appear lower per site. Females establish summer maternity colonies, often in buildings or large-diameter trees. Foraging occurs over water, along waterways, and forest edges. Large open fields or clearcuts generally are avoided. In autumn, bats return to hibernacula, which may be hundreds of kilometres from their summering areas, swarm near the entrance, mate, and then enter that hibernaculum, or travel to different hibernacula to overwinter. 	FOC, FOM, FOD, SWC, SWM, and SWD where suitable roosting (i.e. cavity trees and trees with loose bark) habitat is available.	<ul style="list-style-type: none"> The Little Brown Bat is widespread in southern Ontario and found as far north as Moose Factory and Favourable Lake. In Canada, <i>Myotis lucifugus</i> occurs from Newfoundland to British Columbia, and northward to near the treeline in Labrador, Northwest Territories and Yukon. 	BCI	Medium Probability: Suitable forested habitat may be present within the FOD5-1 community that makes up Lord Roberts Woods, the FODM4-5 and FODM4-12 communities, and the two CUW1 communities within the Study Area.
Mammals	Northern Myotis(Northern Long-eared Bat) <i>Myotis septentrionalis</i>	S3	END	END Schedule 1	END	<ul style="list-style-type: none"> Northern Long-eared Bats are associated with boreal forests, choosing to roost under loose bark and in the cavities of trees. These bats hibernate from October or November to March or April. The Northern Long-eared Bat overwinters in cold and humid hibernacula (caves/mines). Their specific physiological requirements limit the number of suitable sites for overwintering. In the east, large numbers (i.e., >3000 bats) of several species typically overwinter in relatively few hibernacula. In the west, there are fewer known hibernacula, and numbers appear lower per site. Females establish summer maternity colonies in buildings or large-diameter trees. Foraging occurs along waterways, forest edges, and in gaps in the forest. Large open fields or clearcuts generally are avoided. In autumn, bats return to hibernacula, which may be hundreds of kilometres from their summering areas, swarm near the entrance, mate, and then enter that hibernaculum, or travel to different hibernacula to overwinter. 	FOC, FOM, FOD, SWC, SWM, and SWD where suitable roosting (i.e. cavity trees and trees with loose bark) habitat is available.	<ul style="list-style-type: none"> The Northern Long-eared Bat is found throughout forested areas in southern Ontario, to the north shore of Lake Superior and occasionally as far north as Moosonee, and west to Lake Nipigon. In Canada, <i>Myotis septentrionalis</i> occurs from Newfoundland to British Columbia, and northward to near the treeline in Labrador, Northwest Territories, and Yukon. 	BCI	Medium Probability: Suitable forested habitat may be present within the FOD5-1 community that makes up Lord Roberts Woods, the FODM4-5 and FODM4-12 communities, and the two CUW1 communities within the Study Area.

Appendix C. Species at Risk and Species of Conservation Concern Habitat Screening

Taxonomy	Species	S-Rank	ESA Status	SARA Status	COSEWIC Status	Preferred Habitat ^{1, 2, 3}	Associated ELC Communities	Known Species Range ^{1, 2, 3}	Source Identifying Species Record	Likelihood of Species/Habitat Presence Based on Field Investigations
Mammals	Tri-colored Bat <i>Perimyotis subflavus</i>	S3?	END	END Schedule 1	END	<ul style="list-style-type: none"> ■ During the summer, the Tri-colored Bat is found in a variety of forested habitats. It forms day roosts and maternity colonies in older forest and occasionally in barns or other structures. They forage over water and along streams in the forest. Tri-colored Bats eat flying insects and spiders gleaned from webs. At the end of the summer they travel to a location where they swarm; it is generally near the cave or underground location where they will overwinter. They overwinter in caves where they typically roost by themselves rather than part of a group. ■ The Tri-colored Bat overwinters in cold and humid hibernacula (caves/mines). Their specific physiological requirements limit the number of suitable sites for overwintering. In the east, large numbers (i.e., >3000 bats) of several species typically overwinter in relatively few hibernacula. In the west, there are fewer known hibernacula, and numbers appear lower per site. Females establish summer maternity colonies in buildings or large-diameter trees. Foraging occurs over water, along waterways, and forest edges. Large open fields or clearcuts generally are avoided. In autumn, bats return to hibernacula, which may be hundreds of kilometres from their summering areas, swarm near the entrance, mate, and then enter that hibernaculum, or travel to different hibernacula to overwinter. 	FOC, FOM, FOD, SWC, SWM, and SWD where suitable roosting (i.e. cavity trees and trees with loose bark) habitat is available.	<ul style="list-style-type: none"> ■ This bat is found in southern Ontario and as far north as Espanola near Sudbury. Because it is very rare, it has a scattered distribution. It is also found from eastern North America down to Central America. ■ In Canada, <i>Perimyotis subflavus</i> occurs in Nova Scotia, New Brunswick, Quebec, and Ontario. 	BCI	<p>Medium Probability: Suitable forested habitat may be present within the FOD5-1 community that makes up Lord Roberts Woods, the FODM4-5 and FODM4-12 communities, and the two CUW1 communities within the Study Area.</p>
Plants	Black Ash <i>Fraxinus nigra</i>	S3	END		THR	<ul style="list-style-type: none"> ■ "Black Ash is predominantly a wetland species found in swamps, floodplains and fens."⁹ 		<ul style="list-style-type: none"> ■ "Black Ash occurs from western Newfoundland to southeastern Manitoba and North Dakota, ranging southward to Iowa, Illinois, Virginia and Delaware. Black Ash's range extends farther north than any other ash and approximately 51% of the species' global range is within Canada."⁹ 	NHIC	<p>Medium Probability: Suitable wetland habitat may be present within the inaccessible SWD community adjacent to Arsandco Park within the Study Area.</p>

Appendix C. Species at Risk and Species of Conservation Concern Habitat Screening

Taxonomy	Species	S-Rank	ESA Status	SARA Status	COSEWIC Status	Preferred Habitat ^{1, 2, 3}	Associated ELC Communities	Known Species Range ^{1, 2, 3}	Source Identifying Species Record	Likelihood of Species/Habitat Presence Based on Field Investigations
Plants	Butternut <i>Juglans cinerea</i>	S2?	END	END Schedule 1	END	<ul style="list-style-type: none"> In Ontario, Butternut usually grows alone or in small groups in deciduous forests. It prefers moist, well-drained soil and is often found along streams. It is also found on well-drained gravel sites and rarely on dry, rocky soil. This species does not do well in the shade, and often grows in sunny openings and near forest edges. Butternut occurs primarily in neutral to calcareous soils of pH 5.5 to 8, often in regions with underlying limestone, and is generally absent from acidic regions. It tends to reach greatest abundance in rich well-drained mesic loams in floodplains, streambanks, terraces, and ravine slopes, but can occur in a wide range of other situations. In closed-canopy stands, it must be in the overstory to thrive. Seedling establishment, growth, and survival to maturity are most frequent in stand openings, riparian zones, and forest edges. 	FOD and mature hedgerows; Soil: dry rocky or moist (4, 5, 6) to fresh (2, 3).	<ul style="list-style-type: none"> Butternut can be found throughout central and eastern North America. In Ontario, this species is found throughout the southwest, north to the Bruce Peninsula, and south of the Canadian Shield. Butternut's native Canadian range is restricted to southern Ontario and Quebec (primarily south of the area bounded by Georgian Bay, the Ottawa Valley, and the Quebec City region), and western and southern portions of New Brunswick. 	AECOM, 2017	Medium Probability: This species was observed by AECOM (2017) within the Gatineau Hydro Corridor Trail, however, this location is no longer within the Study Area. The species was not observed during field investigations on May 9, 2024, but may still be present within forested communities within the Study Area.
Plants	Great Lakes Sand Cherry <i>Prunus pumila var. pumila</i>	S3	No Status	No Status	No Status	"Shores of the Great Lakes on sandy, gravelly, or rocky beaches, dunes, interdunal flats" ⁸		Observations of the species have been made in Ontario and in the United States surrounding the Great Lakes. ⁸	NHIC	Low Probability: Suitable gravel/dune habitat not present within the Study Area.
Plants	Kentucky Coffee-tree <i>Gymnocladus dioica</i>	S2	THR	THR Schedule 1	THR	<ul style="list-style-type: none"> Kentucky Coffee-tree is found in a variety of habitats, but grows best on moist, rich soil. Consequently, it is often found in floodplains, though it will tolerate shallow rocky or sandy soils. It is shade-intolerant, and therefore grows along the edges of woodlots or relies on canopy openings in forests and woodlots. Kentucky Coffee-trees occur in an area of Canada that has one of the warmest climates and longest growing seasons in the country and where climate is moderated year round by the proximity of lakes Erie and Huron. Within this area, the Kentucky Coffee-tree inhabits open areas of floodplains and the edges of wetlands. In these habitats, the trees do not usually suffer from shading because occasional flooding inhibits canopy closure by competing species. 	FOD typically on moist rich soils along forest edges or in forest openings.	<ul style="list-style-type: none"> The Kentucky Coffee-tree is rare throughout its range, which extends from the southern Great Lakes region east to New York in scattered localities, south to Oklahoma and Arkansas, and west to Kansas and Nebraska. In Canada, it is only found in southwest Ontario where it was documented at 20 locations in 2000. There are currently 25 known native populations of the Kentucky coffee-tree in Canada. Because the species is quite conspicuous, it is unlikely that it has been missed in recent attempts to locate it, and no additional occurrences are likely to be found in Canada. 	LGL, 2015	Medium Probability: This species was observed by LGL (2017) within the Gatineau Hydro Corridor Trail, however, this location is no longer within the Study Area. As the species is often planted within cities, there is still a possibility that it has been planted within the current Study Area. However, as of January 2023, Kentucky Coffee-tree was reclassified as threatened in Elgin, Essex, Lambton, Middlesex, Norfolk and Oxford Counties and in the Municipality of Chatham-Kent. In all other jurisdictions this species is not classified as at risk or afforded protection under the ESA.

Appendix C. Species at Risk and Species of Conservation Concern Habitat Screening

Taxonomy	Species	S-Rank	ESA Status	SARA Status	COSEWIC Status	Preferred Habitat ^{1, 2, 3}	Associated ELC Communities	Known Species Range ^{1, 2, 3}	Source Identifying Species Record	Likelihood of Species/Habitat Presence Based on Field Investigations
Reptiles	Blanding's Turtle (Great Lakes / St. Lawrence population) <i>Emydoidea blandingii</i>	S3	THR	THR Schedule 1	END	<ul style="list-style-type: none"> Blanding's Turtles live in shallow water, usually in large wetlands and shallow lakes with lots of water plants. It is not unusual, though, to find them hundreds of metres from the nearest water body, especially while they are searching for a mate or traveling to a nesting site. Blanding's Turtles hibernate in the mud at the bottom of permanent water bodies from late October until the end of April. In the Great Lakes/St. Lawrence population, Blanding's Turtles are often observed using clear water, eutrophic wetlands. Blanding's Turtles have strong site fidelity but may use several connected water bodies throughout the active season. Females nest in a variety of substrates including sand, organic soil, gravel, cobblestone, and soil-filled crevices of rock outcrops. Adults and juveniles overwinter in a variety of water bodies that maintain pools averaging about 1 m in depth; however, hatchling turtles have been observed hibernating terrestrially during their first winter. Reported mean home ranges generally fall between 10-60 ha (maximum 382 ha) or 1000-2500 m (maximum 7000 m); however, most studies likely underestimate Blanding's Turtle home range size because few have utilized GPS loggers to track daily movements throughout one or more entire active seasons. 	SWT2, SWT3, SWD, SWM, MAS2, SAS1, SAM1, where open water is present.	<ul style="list-style-type: none"> The Blanding's Turtle is found in and around the Great Lakes Basin, with isolated populations elsewhere in the United States and Canada. In Canada, the Blanding's Turtle is separated into the Great Lakes-St. Lawrence population and the Nova Scotia population. Blanding's Turtles can be found throughout southern, central, and eastern Ontario. In its Canadian range, the Great Lakes/St. Lawrence population of the Blanding's Turtle occurs primarily in southern Ontario (with isolated reports as far north as Timmins) and southern Québec (with isolated reports occurring as far north as the Abitibi-Témiscamingue region and as far east as the Capitale-Nationale region in Québec). Across the North American range, Blanding's Turtles mainly occur in small, isolated subpopulations that maintain a few dozen to approximately 100 turtles. 	NHIC, ORAA, iNat	Low Probability: An observation of this species was logged on iNaturalist west of the Study Area within Dorset Park, however, suitable highly vegetated wetland habitat is not present within the Study Area.
Reptiles	Eastern Musk Turtle (Stinkpot) <i>Sternotherus odoratus</i>	S3	SC	SC Schedule 1	SC	<ul style="list-style-type: none"> Eastern Musk Turtles are found in ponds, lakes, marshes, and rivers that are generally slow-moving and have abundant emergent vegetation and muddy bottoms that they burrow into for winter hibernation. Nesting habitat is variable, but it must be close to the water and exposed to direct sunlight. Nesting females dig shallow excavations in soil, decaying vegetation, and rotting wood or lay eggs in muskrat lodges, on the open ground, or in rock crevices. The Eastern Musk Turtle is a highly aquatic species inhabiting littoral zones of waterways such as bays, streams, canals, and swamps with slow to no current and soft bottoms. During their active season, Eastern Musk Turtles prefer shallow water. 	MAS, OAO, SAS, SAM, and SAF. Nesting habitat can be any upland areas adjacent these areas that are exposed to direct sunlight.	<ul style="list-style-type: none"> In Canada, the Eastern Musk Turtle is found mostly along the southern edge of the Canadian Shield in Ontario and Quebec. In Ontario, it also occurs at various locations throughout southwestern and eastern Ontario. The limited data available indicate that the Stinkpot has disappeared from much of its original range in southwestern Ontario. The Eastern Musk Turtle is restricted to eastern North America. The species ranges from Florida, north to Ontario and Québec, and west to Wisconsin and central Texas. In Canada, the Eastern Musk Turtle is found in southern Ontario, the southeastern edge of northeastern Ontario, and the southwestern edge of Québec. 	ORAA	Low Probability: Suitable highly vegetated wetland habitat is not present within the Study Area.

Appendix C. Species at Risk and Species of Conservation Concern Habitat Screening

Taxonomy	Species	S-Rank	ESA Status	SARA Status	COSEWIC Status	Preferred Habitat ^{1, 2, 3}	Associated ELC Communities	Known Species Range ^{1, 2, 3}	Source Identifying Species Record	Likelihood of Species/Habitat Presence Based on Field Investigations
Reptiles	Northern Map Turtle <i>Graptemys geographica</i>	S3	SC	SC Schedule 1	SC	<ul style="list-style-type: none"> The Northern Map Turtle inhabits rivers and lakeshores where it basks on emergent rocks and fallen trees throughout the spring and summer. In winter, the turtles hibernate on the bottom of deep, slow-moving sections of river. They require high-quality water that supports the female's mollusc prey. Their habitat must contain suitable basking sites, such as rocks and deadheads, with an unobstructed view from which a turtle can drop immediately into the water if startled. The Northern Map Turtle inhabits both lakes and rivers, showing a preference for slow moving currents, muddy bottoms, and abundant aquatic vegetation. These turtles need suitable basking sites (such as rocks and logs) and exposure to the sun for at least part of the day. 	<p>OA, SA with emergent rocks and fallen trees suitable habitat for prey.</p>	<ul style="list-style-type: none"> The Northern Map Turtle's range extends from the Great Lakes region west to Oklahoma and Kansas, south to Louisiana, and east to the Adirondack and Appalachian mountain barrier. In Canada, it is found in southwestern Quebec and southern Ontario. In southern Ontario, it lives primarily on the shores of Georgian Bay, Lake St. Clair, Lake Erie, and Lake Ontario, and along larger rivers including the Thames, Grand, and Ottawa. It reaches its northern limit in southern Ontario and southwestern Quebec, where it is associated with the Great Lakes Basin and the St. Lawrence River. 	ORAA	<p>Low Probability: No rivers or lakes are present within the Study Area.</p>
Reptiles	Queensnake <i>Regina septemvittata</i>	S2	END	END Schedule 1	END	<ul style="list-style-type: none"> The Queensnake is an aquatic species that is seldom found more than a few metres from the water. It prefers rivers, streams, and lakes with clear water, rocky or gravel bottoms, lots of places to hide, and an abundance of crayfish. Queensnakes will often hibernate in groups with other snakes, amphibians, and even crayfish. Suitable hibernation sites (called hibernacula) include abutments of old bridges and crevices in bedrock. Queensnakes are most commonly associated with rocky streams and rivers, but are also occasionally found in marsh, pond, and lake shore habitats. This highly aquatic species is usually found within 3 m of the shoreline and only at sites where there is an abundance of crayfish, its primary food source. 	<p>OA with clear water and rocky or gravel bottoms with lots of places to hide and abundance of crayfish.</p>	<ul style="list-style-type: none"> In Ontario, the Queensnake is found only in the southwest in Middlesex, Brant, Huron, and Essex counties, and on the Bruce Peninsula. There are fewer than 25 sites where it is known to occur in these areas. The extremely specialized habitat requirements of the Queensnake restrict this species to particular areas, with large gaps of unfavourable habitat in between populations. The snake's home range is quite small, making Queensnakes less likely to move into new areas or areas where it was historically found. The Queensnake is relatively widespread in eastern North America, ranging from southeastern Pennsylvania, western New York and southwestern Ontario, west to southeastern Wisconsin, and south to the Gulf Coast from the Florida panhandle to eastern Mississippi. The Queensnake occurs west of the Niagara Escarpment, from the northern portion of the Bruce Peninsula, south to Lake Erie, and west to Essex County. 	NHIC	<p>Low Probability: Suitable rivers, lakes, and streams with clear water and gravel bottoms are not present within the Study Area.</p>

Appendix C. Species at Risk and Species of Conservation Concern Habitat Screening

Taxonomy	Species	S-Rank	ESA Status	SARA Status	COSEWIC Status	Preferred Habitat ^{1, 2, 3}	Associated ELC Communities	Known Species Range ^{1, 2, 3}	Source Identifying Species Record	Likelihood of Species/Habitat Presence Based on Field Investigations
Reptiles	Snapping Turtle <i>Chelydra serpentina</i>	S4	SC	SCSchedule 1	SC	<p>■ Snapping Turtles spend most of their lives in water. They prefer shallow waters so they can hide under the soft mud and leaf litter, with only their noses exposed to the surface to breathe. During the nesting season, from early to mid summer, females travel overland in search of a suitable nesting site, usually gravelly or sandy areas along streams. Snapping Turtles often take advantage of man-made structures for nest sites, including roads (especially gravel shoulders), dams, and aggregate pits. Although Snapping Turtles have been observed in shallow water in almost every kind of freshwater habitat, the preferred habitat of the species is characterized by slow-moving water with a soft mud bottom and dense aquatic vegetation. Established populations are most often located in ponds, sloughs, shallow bays or river edges, and slow streams, or areas combining several of these wetland habitats. Individual turtles will persist in urbanized water bodies, such as golf course ponds and irrigation canals, but it is unlikely that a population could become established in such habitats. The Snapping Turtle can occur in highly polluted waterways, but environmental contamination is known to reduce the already low reproductive output of this species. Basking on offshore logs and protruding rocks can be common in Snapping Turtles, depending on environmental temperature. Females generally nest on sand or gravel banks along waterways. Upon emergence from the nest in early fall, hatchling Snapping Turtles usually move to water, after which they bury themselves under leaf litter or debris. Snapping Turtles overwinter underwater, buried beneath logs, sticks or overhanging banks in small streams that flow continuously throughout the winter. They can also hibernate buried in deep mud in marshy areas or beneath floating mats of vegetation. Snapping Turtle habitat is diminishing in both quantity and quality in Canada, with losses primarily due to conversion of wetlands to agriculture and urban development.</p>	<p>OA0, SA near gravelly or sandy areas.</p>	<p>■ The Snapping Turtle's range extends from Ecuador to Canada. The Snapping Turtle's range is contracting. In Canada, the species is widespread from Nova Scotia to southeastern Saskatchewan, though it is absent from northwestern Ontario, where summers are likely too cool for Snapping Turtle embryos to complete development successfully. The Snapping Turtle is therefore present in mainland Nova Scotia, southern New Brunswick, southern and central Quebec, southern and central Ontario, southern Manitoba, and southeastern Saskatchewan, primarily in the Qu'Appelle watershed.</p>	<p>NHIC, ORAA</p>	<p>Medium Probability: Potentially suitable wetland habitat may be present within the OA01-T and MAS2-1b communities in Arsandco Park within the Study Area.</p>

Appendix C. Species at Risk and Species of Conservation Concern Habitat Screening

Glossary

EXP	ESA - Extirpated - a species that no longer exists in the wild in Ontario but still occurs elsewhere. SARA - Extirpated - a wildlife species that no longer exists in the wild in Canada, but exists elsewhere in the wild.
END	ESA - Endangered - a species facing imminent extinction or extirpation in Ontario which is a candidate for regulation under Ontario's Endangered Species Act. SARA - Endangered - a wildlife species that is facing imminent extirpation or extinction.
THR	ESA - Threatened - a species that is at risk of becoming endangered in Ontario if limiting factors are not reversed. SARA - Threatened - a wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.
SC	ESA - Special Concern (formerly Vulnerable) - a species with characteristics that make it sensitive to human activities or natural events. SARA - Special Concern - a wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.
OMNR	Ontario Ministry of Natural Resources
ESA	Endangered Species Act
SARA	Species at Risk Act (Federal)
Schedule 1	The official list of species that are classified as extirpated, endangered, threatened, and of special concern.
Schedule 2	Species listed in Schedule 2 are species that had been designated as endangered or threatened, and have yet to be re-assessed by COSEWIC using revised criteria. Once these species have been re-assessed, they may be considered for inclusion in Schedule 1.
Schedule 3	Species listed in Schedule 3 are species that had been designated as special concern, and have yet to be re-assessed by COSEWIC using revised criteria. Once these species have been re-assessed, they may be considered for inclusion in Schedule 1.
COSEWIC	Committee on the Status of Endangered Wildlife in Canada - a committee of experts that assesses and designates which wild species are in some danger of disappearing from Canada.

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