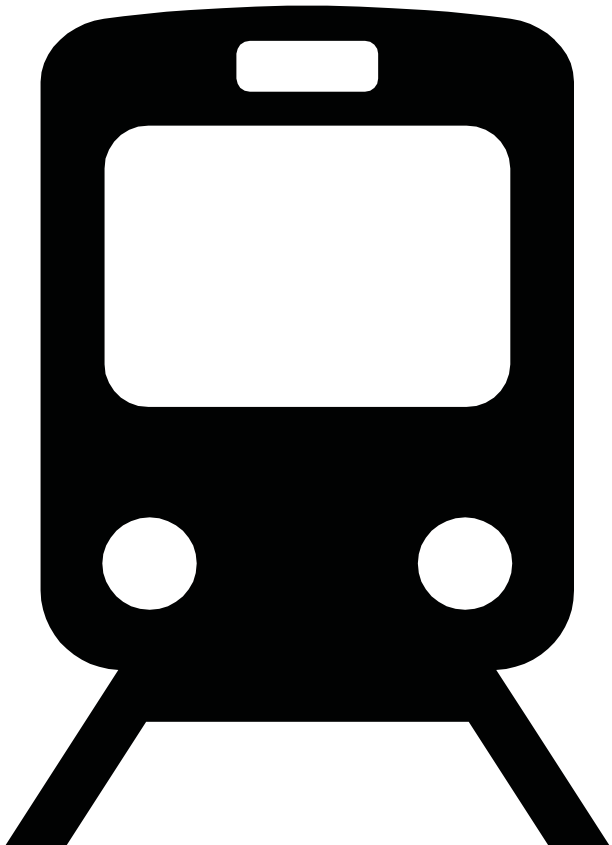
YONGE NORTH SUBWAY EXTENSION

ENVIRONMENTAL PROJECT REPORT ADDENDUM

Final Natural Environment Existing Conditions & Impact Assessment Report

April 14, 2022



METROLINX

	Name, Title	Signature/Date
On behalf of Metrolinx IO:		
On behalf of Metrolinx IO:		
On behalf of Metrolinx IO:		

Yonge North Subway Extension (YNSE) Environmental Project Report Addendum (2022)

Natural Environment Existing Conditions & Impact Assessment Report

FOR

CONTRACTING AUTHORITY METROLINX IO

Role	Name	Title	Signature	Date
Prepared by	Michael Godard	Senior Env. Biologist		March 14, 2022
Prepared by	Samantha Hughes	Senior Biologist		March 14, 2022
Prepared by	Nathan Hellinga	Habitat Specialist		March 14, 2022
Reviewed by	Andrew Roberts	Environmental Lead		March 24, 2022
Reviewed by	Gregory Lau	Technical Manager		March 31, 2022
Approved by	Donald Verbanac	Project Manager		April 01, 2022
Approved by	Charlie Hoang	Project Director	Charlie Hoang	April 04, 2022

This document is submitted under WBS No/Task: 2215 – EA/TPAP Natural Environment Study

Document No.	**219214Y-OTP-ENV-RPT-00007**	Revision.	**0**

March 14, 2022

PART A – YNSE EPR ADDENDUM EXISTING CONDITIONS REPORT

LIST OF FIGURES

LIST OF TABLES

APPENDICES

References and Supporting Documents

Reference	Title
Bat Conservation International (BCI). 2019.	Species Profiles. http://www.batcon.org/resources/media-education/species-profiles.
Bird Studies Canada (BSC), Environment Canada's Canadian Wildlife Service, and the United States Environmental Protection Agency. 2008a.	Marsh Monitoring Program Participant's Handbook For Surveying Amphibians.
Bird Studies Canada (BSC), Environment Canada's Canadian Wildlife Service, Ontario Nature, Ontario Field Ornithologists and Ontario Ministry of Natural Resources. 2008b.	Ontario Breeding Bird Atlas Database, 31 January 2008. Ontario Breeding Bird Atlas Database, 31 January 2008. Data accessed via datasets imported into GIS.
Birds Canada. 2020.	Ontario SwiftWatch
Canada Food and Inspection Agency. 2014.	Directive D-03-08: Phytosanitary Requirements to Prevent the Introduction into and Spread within Canada of the Emerald Ash Borer, *Agrilus planipennis* (Fairmaire)
City of Markham. 2014.	City of Markham Official Plan
City of Toronto. 2019.	Toronto Official Plan: February 2019 Office Consolidation
City of Toronto. 2013.	Sustaining & Expanding the Urban Forest: Toronto's Strategic Forest Management Plan
City of Vaughan. 2010.	City of Vaughan Official Plan
Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2002.	COSEWIC assessment and status report on the Northern Map Turtle *Graptemys geographica* in Canada. COSEWIC. Ottawa. vi + 34 pp.
Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2005.	COSEWIC assessment and update status report on the Blanding's Turtle *Emydoidea blandingii* in Canada. COSEWIC. Ottawa. viii + 40 pp.
Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2006.	COSEWIC assessment and status report on the Rusty Blackbird *Euphagus carolinus* in Canada. COSEWIC. Ottawa. vi + 28 pp.
Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2007a.	COSEWIC assessment and status report on the Chimney Swift *Chaetura pelagica* in Canada. COSEWIC. Ottawa. vii + 49 pp.
Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2007b.	COSEWIC assessment and status report on the Common Nighthawk *Chordeiles minor* in Canada. COSEWIC. Ottawa. vi + 25 pp.
Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2007c.	COSEWIC assessment and status report on the Olive-sided Flycatcher *Contopus cooperi* in Canada. COSEWIC. Ottawa. vii + 25 pp.
Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2007d.	COSEWIC assessment and update status report on the Peregrine Falcon *Falco peregrinus* (pealei subspecies – *Falco peregrinus* and *pealei anatum/tundrius* – *Falco peregrinus anatum/tundrius*) in Canada. COSEWIC. Ottawa. vii + 45 pp.

Reference	Title
Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2007e.	COSEWIC assessment and update status report on the Red-headed Woodpecker *Melanerpes erythrocephalus* in Canada. COSEWIC. Ottawa. vii + 27 pp.
Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2007f.	COSEWIC assessment and update status report on the redside dace *Clinostomus elongatus* in Canada. COSEWIC. Ottawa. vii + 59 pp.
Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2008a.	COSEWIC assessment and status report on the Canada Warbler *Wilsonia canadensis* in Canada. COSEWIC. Ottawa. vi + 35 pp.
Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2008b.	COSEWIC assessment and status report on the Snapping Turtle *Chelydra serpentina* in Canada. COSEWIC. Ottawa. vii + 47 pp.
Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2008c.	COSEWIC assessment and update status report on the Western Chorus Frog *Pseudacris triseriata* Carolinian population and Great Lakes/St. Lawrence – Canadian Shield population in Canada. COSEWIC. Ottawa. vii + 47 pp.
Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2010a.	COSEWIC assessment and status report on the Bobolink *Dolichonyx oryzivorus* in Canada. COSEWIC. Ottawa. vi + 42 pp.
Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2010b.	COSEWIC assessment and status report on the Monarch *Danaus plexippus* in Canada. COSEWIC. Ottawa. vii + 43 pp.
Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2011a.	COSEWIC assessment and status report on the Barn Swallow *Hirundo rustica* in Canada. COSEWIC. Ottawa. ix + 37 pp.
Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2011b.	COSEWIC assessment and status report on the Eastern Meadowlark *Sturnella magna* in Canada. COSEWIC. Ottawa. x + 40 pp.
Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2013a.	COSEWIC assessment and status report on the Bank Swallow *Riparia* in Canada. COSEWIC. Ottawa. ix + 48 pp.
Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2013b.	COSEWIC assessment and status report on the Little Brown Myotis *Myotis lucifugus*, Northern Myotis *Myotis septentrionalis*, and Tri-colored Bat *Perimyotis subflavus* in Canada. COSEWIC. Ottawa. xxiv + 93 pp.
Conservation Ontario. 2019.	Conservation Authorities Act: Conservation Matters
Conservation Ontario. 2021.	Conservation Authorities
Cornell Lab of Ornithology (CLO). 2015.	Eastern Wood-Pewee Life History
Dobbyn, J.S. 1994.	Atlas of the Mammals of Ontario. Federation of Ontario Naturalists. Don Mills, ON viii + 120 pp.
eBird. 2020.	eBird: An online database of bird distribution and abundance. Checklists submitted 2014-2020 for the Project Study Area. Data accessed via datasets imported into GIS.
Ecoplans Limited Environmental Consultants (Ecoplans Ltd.). 2009.	Yonge Subway Extension Conceptual Design and Functional Planning Study: Natural Environment Report.
Environment and Climate Change Canada (ECCC). 2018.	General Nesting Periods of Migratory Birds: Zone C2 Nesting Calendar

Reference	Title
Evans, M., E. Gow, R.R. Roth, M.S. Johnson, and T.J. Underwood. 2011.	Wood Thrush (Hylocichla mustelina), The Birds of North America (P.G. Rodewald, Ed.). Ithaca: Cornell Lab of Ornithology
Fisheries and Oceans Canada (DFO). 2020.	Aquatic Species at Risk Mapping.
Humphrey, C. 2017.	Recovery Strategy for the Eastern Small-footed Myotis (*Myotis leibii*) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources and Forestry, Peterborough, Ontario. vii + 76 pp.
Humphrey, C. and H. Fotherby. 2019.	Recovery Strategy for the Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*) and Tri-colored Bat (*Perimyotis subflavus*) in Ontario. Ontario Recovery Strategy Series. Prepared by the Ministry of the Environment, Conservation and Parks, Peterborough, Ontario. vii + 35 pp. + Appendix. Adoption of the Recovery Strategy for the Little Brown Myotis (*Myotis lucifugus*), the Northern Myotis (*Myotis septentrionalis*), and the Tri-colored Bat (*Perimyotis subflavus*) in Canada (Environment and Climate Change Canada 2018).
iNaturalist. 2020.	Data in the vicinity of the Yonge North Subway Extension Project Study Area accessed via datasets imported into GIS.
Lee, H.T., W.D. Bakowsky, J. Riley, J. Bowles, M. Puddister, P. Uhlig and S. McMurry. 1998.	Ecological Land Classification for Southern Ontario: First approximation and its application. Ontario Ministry of Natural Resources, Southcentral Science Section, Science Development and Transfer Branch. SCSS Field Guide FG-02.
LGL Limited Environmental Research Associates (LGL). 2005.	Natural Sciences Report. Yonge Street Transitway from Steeles Avenue to 19th Avenue/Gamble Road. Individual Environmental Assessment.
LGL Limited Environmental Research Associates (LGL). 2018.	Natural Heritage Report: Improvements to 16th Avenue (Y.R.73) from Yonge Street (Y.R. 1) to Woodbine Avenue (Y.R. 8) York Region Schedule 'C' Municipal Class Environmental Assessment Study.
McCarty, J.P. 1996.	Eastern Wood-Pewee (*Contopus virens*), The Birds of North America (P.G. Rodewald, Ed.). Ithaca: Cornell Lab of Ornithology.
Metrolinx. 2020.	Metrolinx Vegetation Guideline.
Ministry of Municipal Affairs and Housing (MMAH). 2020.	Provincial Policy Statement, 2020
Ministry of Natural Resources (MNR). 2000.	Significant Wildlife Habitat Technical Guide. 151 pp.
Ministry of Natural Resources (MNR). 2010.	Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005. Second Edition. Toronto: Queen's Printer for Ontario. 249 pp.
Ministry of Natural Resources and Forestry (MNRF). 2013.	Reptile and Amphibian Exclusion Fencing: Best Practices, Version 1.1. Species at Risk Branch Technical Note. Prepared for the Ontario Ministry of Natural Resources, Peterborough, Ontario. 11 pp.
Ministry of Natural Resources and Forestry (MNRF). 2015.	Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E. MNRF Regional Operations Division: Peterborough, Ontario. 41 pp.
Ministry of Natural Resources and Forestry (MNRF). 2016a.	Ontario Recovery Strategy Series: Recovery Strategy for the Acadian Flycatcher (*Empidonax virescens*) in Ontario. Ontario Recovery Strategy Series. Prepared by the Ontario Ministry of Natural Resources and Forestry, Peterborough, Ontario. v + 5 pp. + Appendix.

Reference	Title
Ministry of Natural Resources and Forestry (MNRF). 2016b.	Butternut (Species at Risk)
Ministry of Natural Resources and Forestry (MNRF). 2016c.	Guidance for Development Activities in Redside Dace Protected Habitat.
Ministry of Natural Resources and Forestry (MNRF). 2017.	Survey Protocol for Species at Risk Bats within Treed Habitats Little Brown Myotis, Northern Myotis & Tri-Colored Bat.
Ministry of Natural Resources and Forestry (MNRF). 2019a.	Natural Heritage Information Centre database. Data accessed via datasets imported into GIS.
Ministry of Natural Resources and Forestry (MNRF). 2019b.	Eastern small-footed myotis (Species at Risk)
Ministry of Natural Resources and Forestry (MNRF). 2020.	Land Information Ontario (LIO) Mapping.
Ministry of Northern Development, Mines, Natural Resources and Forestry (MNDMNRF). 2021.	Bats and Bat Habitats: Guidelines for Wind Power Projects.
Ministry of the Environment, Conservation and Parks (MECP). 2019.	Species Profile Northern Brook Lamprey
MMM Group. 2014a.	Yonge Subway Extension – Finch Station to Richmond Hill Centre, Transit Project Assessment: Train Storage Facility Environmental Project Report Addendum.
MMM Group. 2014b.	Yonge Subway Extension Addendum: Natural Environment Existing Conditions, Impact Assessment and Mitigation Recommendations Technical Memo.
Naylor, B. and B. Watt. 2004.	Ontario Ministry of Natural Resources' Review of the Forest Management Guidelines for Bald Eagles, Ospreys, and Great Blue Herons in Ontario
OneT+. 2021a.	Preliminary Screening for Species at Risk Memorandum.
OneT+. 2021b.	YNSE Arborist Report.
Ministry of Transportation of Ontario (MTO). 2009.	Environmental Guide for Fish and Fish Habitat, Section 2: Implementing the Protocol, June 2009.
Ministry of Transportation of Ontario (MTO). 2020.	Environmental Guide for Fisheries.
Ontario Nature. 2020.	Ontario Reptile and Amphibian Atlas. Data accessed via datasets imported into GIS from the Toronto Entomologists' Association website.
Ontario Peregrine Falcon Recovery Team. 2010.	Recovery strategy for the Peregrine Falcon (*Falco peregrinus*) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources, Peterborough, Ontario. vi + 36 pp.
Regional Municipality of York (York Region). 2009.	Yonge Subway Extension – Finch Station to Richmond Hill Centre, Transit Project Assessment: Environmental Project Report.
Regional Municipality of York (York Region). 2019.	The Regional Municipality of York Official Plan: 2019 Office Consolidation
Richmond Hill. 2021	Richmond Hill Centre Secondary Plan - Draft
Richmond Hill. 2020.	Richmond Hill Official Plan: Office Consolidation to June 2020
Toronto and Region Conservation Authority (TRCA). 2018.	Guideline for Determining Ecosystem Compensation.

Reference	Title
Toronto and Region Conservation Authority (TRCA). 2019.	Erosion and Sediment Control Guide for Urban Construction.
Toronto Entomologists' Association (TEA). 2018.	Ontario Butterfly Atlas. Data accessed via datasets imported into GIS.

Acronyms, Abbreviations, and Measurement Units

Term	Definition
407 ETR	407 Express Toll Route
ANSI	Area of Natural and Scientific Interest
ARA	Aquatic Resource Area
Ave.	Avenue
BCI	Bat Conservation International
Blvd.	Boulevard
BSC	Bird Studies Canada
CAA	*Conservation Authorities Act, 1990*
CLO	Cornell Lab of Ornithology
cm	Centimetre(s)
CN	Canadian National Railway
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
COSSARO	Committee on the Status of Species at Risk in Ontario
CSP	Corrugated Steel Pipe
DBH	Diameter-at-breast height
DFO	Fisheries and Oceans Canada
ECCC	Environment and Climate Change Canada
ECLRT	Eglinton Crosstown Light Rail Transit
Ecoplans Ltd.	Ecoplans Limited Environmental
EEB	Emergency exit building
ELC	Ecological Land Classification
EPR	Environmental Project Report
ESA	*Endangered Species Act, 2007*
ESC	Erosion and Sediment Control
ETR	Express Toll Route
FFA	Fire fighter's access shaft
FWCA	*Fish and Wildlife Conservation Act, 1997*
GIS	Geographic information system
Greenlands	Regional Greenlands System
ha	Hectare(s)
HADD	Harmful alteration, disruption or destruction of fish habitat
IBC	Initial business case
km	Kilometre(s)
LGL	LGL Limited Environmental Research Associates
LIO	Land Information Ontario
m	Metre(s)
MBCA	*Migratory Birds Convention Act, 1994*
MECP	Ministry of Environment, Conservation and Parks
MMAH	Ministry of Municipal Affairs and Housing
MNR	Ministry of Natural Resources (renamed to Ministry of Natural Resources and Forestry in 2014 and Ministry of Northern Development, Mines, Natural Resources and Forestry in 2021)

Term	Definition
MNRF	Ministry of Natural Resources and Forestry (known as Ministry of Natural Resources prior to 2014 and renamed to Ministry of Northern Development, Mines, Natural Resources and Forestry in 2021)
MNDMNRF	Ministry of Northern Development, Mines, Natural Resources and Forestry (known as the Ministry of Natural Resources prior to 2014 and Ministry of Natural Resources and Forestry 2014 to 2021
MTO	Ontario Ministry of Transportation
NE	Northeast
NFPA	National Fire Protection Agency
NHIC	Natural Heritage Information Centre
NHS	Natural heritage system
O. Reg.	Ontario Regulation
OBBA	Ontario Breeding Bird Atlas
OPSS	Ontario Provincial Standard Specifications
ORAA	Ontario Reptile and Amphibian Atlas
Part A	The existing conditions portion of this report
Part B	The impact assessment portion of this report
pers. comm.	Personal communication (typically referring to email, phone, or in-person correspondence)
PPS	*Provincial Policy Statement*
PPUDO	Passenger pick-up and drop-off
PSW	Provincially Significant Wetland
PTE	Permission to enter
PTIZ	Potential Temporary Impact Zone (30 m buffer around the Project footprint)
ROW	Right-of-way
SAR	Species at Risk
SARA	*Species at Risk Act, 2002*
St.	Street
SW	Southwest
SWH	Significant Wildlife Habitat
TEA	Toronto Entomologists' Association
The Project	The proposed Yonge North Subway Extension Project
The SAR Desktop Study Area	The Project footprint (based on the currently available conceptual design information) plus a 300 m buffer to the Project footprint; used in the OneT+ (2021) *Preliminary Screening for Species at Risk Memorandum* and referenced within this report with respect to potential occurrence of Species at Risk.
The Study Area	The Yonge North Subway Extension Environmental Project Report Addendum Natural Environment Study Area; i.e., the Project footprint (based on the currently available conceptual design information) plus a 120 m buffer.
TPAP	Transit Project Assessment Process
TPSS	Traction power substation
TPZ	Tree protection zone
TRCA	Toronto and Region Conservation Authority
TSF	Train Storage Facility
TTC	Toronto Transit Commission
YDSS	York Durham Sanitary Sewer

Term	Definition
YNSE	Yonge North Subway Extension
York Region	Regional Municipality of York
YROP	*York Region Official Plan, 2010*

Glossary of Terms

Term	Definition
Anuran	Any amphibian of the order Anura, comprising the frogs and toads.
Area of Natural and Scientific Interest (ANSI)	An area of land and water containing natural landscapes or features that have been identified as having life science or earth science values related to protection, scientific study, or education.
Detailed Design	The detailed design phase of a project is defined as the phase of the project where design is refined past the conceptual phase, when plans, specifications, and estimates are created. This will take place after the TPAP is completed and before the construction phase.
Ecological Land Classification (ELC)	A term used in Ontario to describe various systems to indicate natural regions based on ecological factors.
Environmental Project Report (EPR)	The proponent is required to prepare an EPR to document the TPAP followed, including but not limited to: a description of the preferred transit project, a map of the project, a description of existing environmental conditions, an assessment of potential impacts, description of proposed mitigation measures, etc. The EPR is made available for public review and comment for a period of 30 calendar days. This is followed by a 35-day Minister's Decision Period.
Environmentally Significant Area	These are natural areas which are particularly significant or sensitive requiring additional protection to preserve their environmental qualities and significance.
Geographic Information System (GIS)	Systems that are designed to capture, store, visualize, manipulate, analyze, manage, and present spatial or geographical data.
L-Rank	A ranking system used by the TRCA to assess the rarity of species found within their jurisdiction. Higher numbers indicate more common species, with L5 being the most common and L1 being the least. L+ species are introduced.
Migratory Bird	A bird protected under the *Federal Migratory Birds Convention Act*.
Official Plan	An Official Plan is a policy document that guides the short-term and long-term development in a community. It applies to all lands within the municipal boundary and the policies within it provide direction for the size and location of land uses, provision of municipal services and facilities, and preparation of regulatory bylaws to control the development and use of land.
Potential Temporary Impact Zone	The 30 m buffer around Project footprint (based on the currently available conceptual design information) where construction activities may result in temporary impacts to the natural environment.
Preliminary Design	The design of a proposed project (including a detailed cost estimate) to a level that demonstrates that the project is buildable within the given parameters of the design scope.
Project Footprint	The area of permanent impacts based on the currently available conceptual design information.
Provincially Significant Wetland (PSW)	Wetlands that have been evaluated using the Ontario Wetland Evaluation System by a certified wetland evaluator and that have satisfied the Ontario Wetland Evaluation System criteria for significance.
Rail Right-of-Way	Land that is reserved, usually through legal designation, for transportation purposes, such as for railway line. A right-of-way is often reserved for the maintenance or expansion of existing services.

Term	Definition
Right-of-Way (ROW)	Land that is reserved, usually through legal designation, for transportation and/or utility purposes, such as for a hydro corridor, rail line, street, or highway. A right-of-way is often reserved for the maintenance or expansion of existing services. A permit or legal permission is generally required for any work or encroachment on a right-of-way.
Species at Risk (SAR) Screening	The suitability of an area to support habitat preferred by SAR species is based on a combination of factors; including, but not limited to: a species' requirements for critical life stages and adaptability, seasonal temperatures, precipitation, soils, vegetation, aquatic conditions, existing disturbances and land form.
Species at Risk (SAR)	A species, subspecies, variety or genetically or geographically distinct population of animal, plant or other organism, other than a bacterium or virus, that is native to Ontario. Species at Risk in Ontario are all the species that are classified by the Committee on the Status of Species at Risk in Ontario (COSSARO) or the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as either extirpated, endangered, threatened, or special concern.
S-Rank	A ranking system used by the NHIC to assess the rarity of species found in Ontario. Higher numbers indicate more common species, with S5 being the most common and S1 being the least.
Study Area	The area used in the EPR Addendum by the Natural Environment discipline to assess existing conditions in the vicinity of the Project; defined as all areas within 120 m of the proposed footprint.
Transit Project Assessment Process (TPAP)	This process is defined in sections 6 through 17 in *O. Reg 231/08*. It consists of various steps and requirements. It is a focused impact assessment process that includes consultation, an assessment of potential positive and negative impacts, an assessment of measures to mitigate negative impacts, and documentation.
Tree Protection Zone (TPZ)	Tree Protection Zones are the minimum required distances where tree protection is to be put in place so that no construction activity of any kind will take place inside the Tree Protection Zone.
Vicinity	Within the Study Area or in a source which overlaps the Study Area.
Wildlife Atlas	A publication or website that summarises occurrence data for wildlife species across Ontario, providing information on species present in a particular region (often a 10 km x 10 km square).

E.1 Executive Summary

Metrolinx and Infrastructure Ontario are undertaking an Addendum to the Environmental Project Report (EPR) for the Yonge North Subway Extension (YNSE). This study is following the requirements of the Transit Project Assessment Process (TPAP) under *O. Reg. 231/08* and will address a change to the subway extension alignment, stations, and associated facilities.

Previous studies followed the TPAP for the YNSE. An EPR was completed by the Regional Municipality of York (York Region), York Region Rapid Transit Corporation, the City of Toronto and the Toronto Transit Commission in 2009 for the new subway extension. A further addendum to the EPR was prepared in 2014 to assess the potential environmental impacts associated with the identified Train Storage Facility (TSF) location that would accommodate up to 14 trains within the vicinity of the Richmond Hill Centre.

E.1.1 Study Purpose

As part of the YNSE EPR Addendum process, this Existing Conditions and Impact Assessment Report has been prepared to document the current existing conditions within the Study Area, to undertake and assessment of the potential impacts associated with the currently proposed YNSE Project, and to identify mitigation and monitoring measures, as appropriate.

E.1.2 Existing Conditions

The existing environmental conditions in the Study Area described in the 2009 EPR and 2014 EPR Addendum were reviewed, and the relevant information has been included in this report, where more recent data was not available. To supplement this data, desktop and field studies were conducted to identify and review the natural environment existing conditions. Field studies included anuran (i.e., frog and toad) call surveys, breeding bird surveys, vegetation inventory and classification, fish habitat assessments and SAR/SAR habitat reconnaissance (leaf-on). Details are outlined in Part A of this report with a high level summary of findings below.

- The YNSE Study Area is highly urbanized with limited natural vegetation cover present, associated mainly with the watercourses and parklands.
- The Study Area provides limited wildlife habitat with low connectivity to nearby natural features. The Study Area does not feature any provincially or locally significant wetlands or areas of natural and scientific interest. The woodlands and valleylands are designated in corresponding official plans as Natural Heritage Systems (NHS), including York Region Official Plan (e.g., Woodland and Greenland System, Richmond Hill Official Plan (e.g., Natural Core and Greenway), City of Markham Official Plan (e.g., Woodland and Greenway 2014) and City of Vaughan Official Plan (e.g., Core Feature).
- Species of Special Concern including Common Nighthawk, Eastern Wood-pewee, Peregrine Falcon, Wood Thrush, Northern Map Turtle, Snapping Turtle, and Monarch; and Species at Risk including Barn Swallow, Chimney Swift, Butternut and Bat Species at Risk may occur.
- Fish habitat is limited to three watercourses within the YNSE Study Area: East Don River, Pomona Creek and German Mills Creek with all three watercourses identified as permanent features providing for warm, cool and

coldwater fish communities. The assessed reaches provide habitat for migration, spawning, feeding and rearing and are generally non-limiting throughout.

E.1.3 Summary of Potential Impacts, Mitigation Measures & Monitoring Activities

The impact assessment portion of this report (Part B) includes an analysis of the Project's potential to interact with the natural environment based on the current understanding of the existing conditions and proposed Project works at the time of this analysis. Based on the results of the impact assessment, mitigation measures and monitoring activities have been identified to ensure adherence to applicable legislation and to reduce impacts to the natural environment.

Potential impacts, mitigation measures and monitoring activities are outlined in Part B **Table B 4-1**.

For reporting purposes and to better characterize the findings of the various environmental and technical studies, the EPR Addendum Study Area was further sub-divided into three (3) geographic segments:

- Segment 1 – Finch Station to Clark Station (Below Grade)
- Segment 2 – Clark Station to Portal/Launch Shaft (Below Grade); and
- Segment 3 – Portal/Launch Shaft to Moonlight Lane (At Grade).

Within Segment 1 the physical environment is almost entirely urban, and the Study Area is dominated by residential and commercial buildings. The only anticipated impact on existing vegetation communities within Segment 1 is associated with the proposed bus loop on Drewry Avenue. The only identified natural heritage feature is a narrow belt of woodland along the rail corridor at the north end of the segment and direct impacts to this woodland are not anticipated.

Within Segment 2 there are a number of natural heritage features and vegetation communities focused around the Don River East Branch and Pomona Creek. As the YNSE alignment is below grade, impacts within Segment 2 are expected to be primarily associated with staging of equipment and less significant at grade project activities with a relatively small footprint (e.g., emergency exit building (EEB) construction).

The majority of the potential impacts to the natural environment will be associated with at grade Project activities within Segment 3. The primary area of activity is German Mills Creek where project activities may include in-water works and any potential impacts to fish and fish habitat must be mitigated. Other at grade works will require vegetation removal and grubbing adjacent to the existing rail tracks where vegetation disturbance is already high and vegetation communities and are not highly sensitive or rare. Stations and ancillary buildings such as Emergency Exit Buildings and Traction Power Substations (TPSSs) will similarly be constructed in urban areas along Yonge Street where there is significant existing disturbance.

A 1.0 Introduction

In 2009, the Regional Municipality of York, York Region Rapid Transit Corporation, the City of Toronto and the Toronto Transit Commission completed an Environmental Project Report (EPR) in accordance with the Transit Project Assessment Process (TPAP), as per *Ontario Regulation 231/08*, to assess the potential environmental impacts of the proposed Yonge North Subway Extension (YNSE) project. The Study Area was defined along Yonge Street from Finch Avenue in the City of Toronto to Richmond Hill Centre Terminal at Highway 7 in the City of Richmond Hill, York Region. Notice to Proceed was given by the Minister of Environment, Conservation and Parks (MECP) (formerly known as the Minister of Environment and Climate Change) and Statement of Completion was issued in April 2009.

In 2014, an EPR Addendum was carried out by the York Region Rapid Transit Corporation, in partnership with the Regional Municipality of York, Toronto Transit Commission (TTC), and the City of Toronto to assess the potential environmental impacts associated with the identified Train Storage Facility (TSF) location that would accommodate up to 14 trains within the vicinity of the Richmond Hill Centre. Statement of Completion was issued in November 2014.

Subsequently in April 2019, the Government of Ontario announced a $28.5 billion expansion to Ontario's transit network. This rapid transit project plan includes four (4) key initiatives including: the Ontario Line (OL), the Scarborough Subway Extension (SSE), the Eglinton West Extension (EWE), as part of the Eglinton Crosstown Light Rail Transit (ECLRT) Project, and the Yonge North Subway Extension **(Figure A 1-1)** from its current terminus at Finch Station in the City of Toronto to north of 16th Avenue in the City of Richmond Hill.

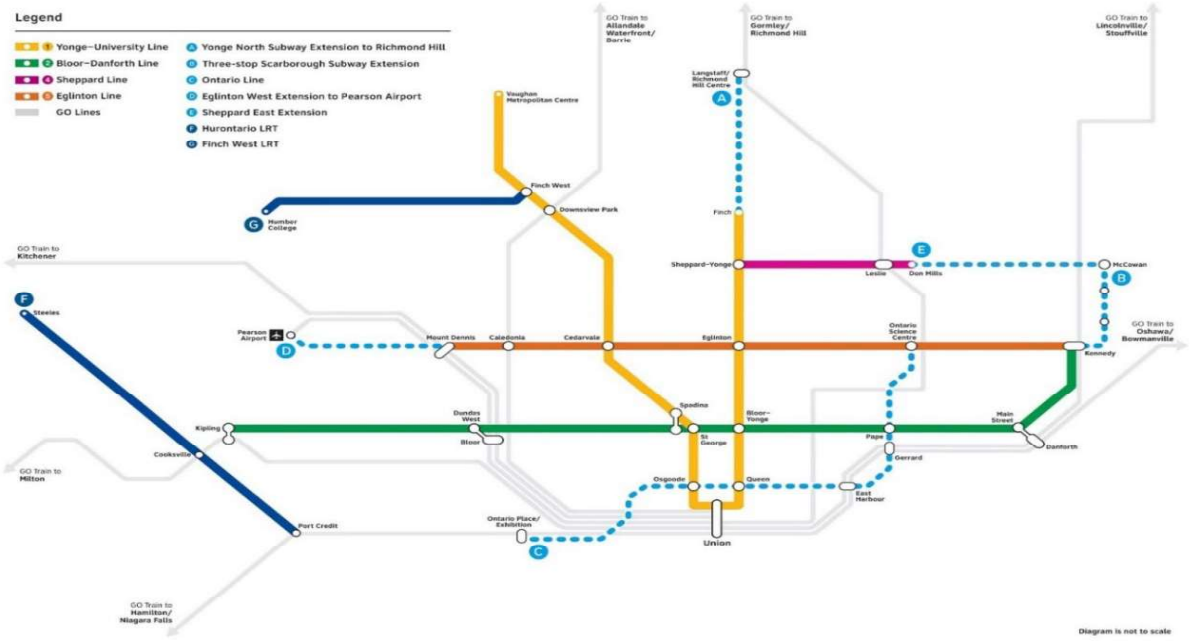


Figure A 1-1: Ontario Rapid Transit Expansion Plan (source: Infrastructure Ontario - 2019)

A 1.1 Initial Business Case

Metrolinx published the Yonge North Subway Extension Initial Business Case (IBC) and accompanying supplementary analysis on March 18, 2021. The IBC demonstrates how the Yonge North Subway Extension will significantly reduce travel times, grow the number of people who use public transit and serve the heart of major growth centres in Toronto and York Region. The scope and key objectives of the IBC were as follows:

- Document the details of the Project, as contemplated at the time it was brought under the management of Metrolinx;
- Compare alternative alignments of the extension with a Business-As-Usual scenario;
- Investigate and evaluate options that might have additional transit benefits and/or reduced capital or operating costs; and
- Evaluate the performance of stations.

The Yonge North Subway Extension will bring higher-order rapid transit closer to a large number of residents and jobs in the intensification areas along the corridor, while providing a seamless connection between those areas. The business case introduces innovative design options in order deliver the most benefits possible within the funding envelope of $5.6 billion.

The IBC generally provides recommendations for next steps in the Metrolinx Business Case process. The IBC notes:

- The Yonge North Subway Extension is one of four priority transit projects announced by the Government of Ontario, along with the Scarborough Subway Extension, the Ontario Line and the Eglinton Crosstown West Extension. The Ontario Line will provide relief to Line 1 by helping to spread demand across the transit network as it grows. The YNSE won't come online until the Ontario Line goes into service.
- The extension will bring rapid transit closer to residents' destinations in the northern portions of Toronto and across York Region. The IBC highlights the need to prioritize access for bus passengers while focusing on walk-in access at each of the contemplated subway stations.
- Next steps will include refining the design of the selected alternative engineering to maximize benefits and address risks, developing a Preliminary Design Business Case, seeking required Environmental Assessment Act approvals and proceeding toward delivery.

A 1.2 Background

A 1.2.1 2009 EPR

The *Yonge Subway Extension - Finch Station to Richmond Hill Centre Transit Project Assessment- Environmental Project Report (2009)* included the assessment of approximately 6.8 km of subway alignment via twin-bored tunnel, six (6) subway stations, associated track work, one (1) major bus terminal, one (1) bus loop, four (4) traction power substations, six (6) emergency exit buildings (EEBs) and one (1) bridge structure. **Figure A 1-2** provides a key map depicting the 2009 EPR scope (the red section of the proposed alignment is located in the City of Toronto; the blue section is located in York Region).

In April 2009, MECP issued a Notice to Proceed in accordance with the proposed Project as documented in the 2009 EPR.

Figure A 1-2: Finch Station to Richmond Hill Centre - 2009 YNSE EPR Scope

A 1.2.2 2014 EPR Addendum

Subsequent to the 2009 EPR, an EPR Addendum was undertaken in 2014 to assess the potential environmental impacts associated with the following design changes:

- Extension of the subway alignment to approximately 1 km north of the previously approved Richmond Hill Centre Station.
- Underground Train Storage Facility (TSF) for 14 trains **(Figure A 1-3)** north of the previously approved Richmond Hill Centre Station; and
- Two (2) Emergency Exit Buildings associated with the TSF.

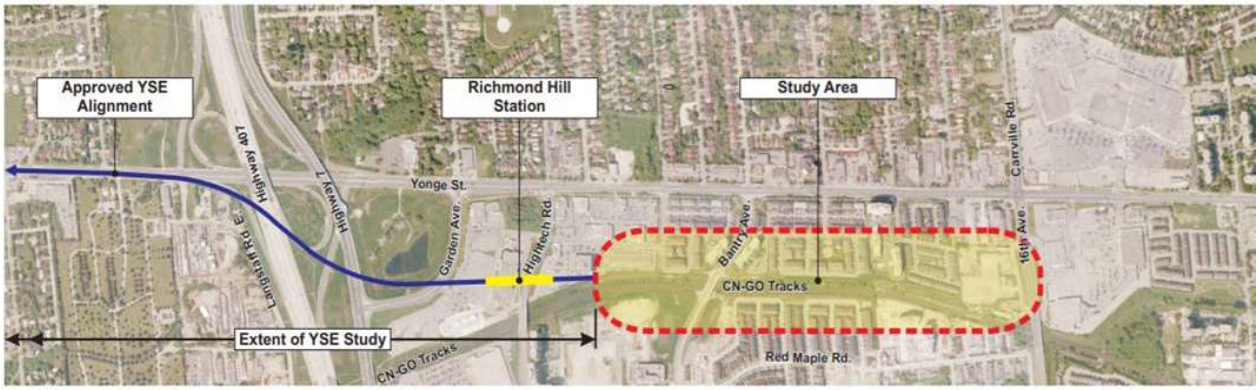


Figure A 1-3: Proposed Train Storage Facility Location - 2014 EPR Addendum

A 1.3 Study Purpose – Current EPR Addendum

Since the completion of the 2009 EPR and 2014 EPR Addendum, further changes to the proposed YNSE Project have been identified that will result in modifications to the plans presented in the previously approved 2009 EPR and 2014 EPR Addendum. These changes are summarized in **Section A 2.0** that follows.

In accordance with *Section 15 of O. Reg. 231/08*, Metrolinx has determined that the changes to the Project (as described in Section 2 of the YNSE EPR Addendum document and within Section 2.0 below) are Significant and therefore necessitate completion of an EPR Addendum to: evaluate and document the updates to the Project description, update existing conditions, carry out associated environmental impact assessment studies, identify mitigation and monitoring requirements, and undertake public, stakeholder and Indigenous Nations consultation.

Furthermore, as per *Section 16 of O. Reg. 231/08*, since the construction of the Project has not commenced within 10 years of the issuance of the Statement of Completion (originally issued in 2009), Metrolinx is required to re-examine existing conditions as well as potential environmental impacts and mitigation measures documented in the previously approved EPR to ensure they are still valid and subsequently carry out additional environmental studies as appropriate.

A 1.4 Report Purpose

This report entails a review and update to existing conditions within the current EPR Addendum Study Area (contained within Part A) as well as an assessment of potential impacts and proposed mitigation measures and monitoring activities (contained within Part B) based on the currently proposed YNSE project components.

The purpose of this Natural Environment Existing Conditions and Impact Assessment Report is two-fold:

- ***Part A*** – provides a review of and outlines the natural environment (i.e., terrestrial and aquatic) existing conditions within and surrounding the Study Area; and
- ***Part B*** - provides an assessment of potential impacts to the natural environment, proposed mitigation measures and monitoring activities based on the natural environment existing conditions and the currently proposed YNSE infrastructure components.

A 1.5 Natural Heritage Policy Context

Information pertaining to the natural heritage legislation, policies, and planning components relative to federal, provincial, and municipal sections associated with the Study Area are summarized in the sub-sections below. Metrolinx, as a Crown Agency of the Province of Ontario, is exempt from certain municipal processes and requirements. In these instances, Metrolinx will engage with the municipalities to incorporate municipal requirements as a best practice, where practical, and may obtain associated permits and approvals. In general, the Official Plans explained below all have policies and maps (schedules) which outline the policies protecting each delineated natural heritage system (NHS). The primary function and vision of the policies are to protect the features and encourage and protect the connectivity of the NHS locally and on the landscape scale.

A 1.5.1 Species at Risk Act, 2002 (as amended)

The purpose of the *Species at Risk Act* (SARA) is to prevent wildlife species in Canada from disappearing, to provide for the recovery of wildlife species, and to manage species to prevent further risk to their status. Only species listed as Threatened, Endangered, or Extirpated under Schedule 1 are afforded both individual and habitat protection under SARA on Federal lands and the following:

- Migratory birds (i.e., those species listed under Article I of the *Migratory Birds Convention Act, 1994*) that also fall under Schedule 1 of SARA. This does not include the species' critical habitat however does include residences of migratory birds which have residence descriptions; and
- Aquatic species that fall under Schedule 1 of SARA.

Applicability to the Project

The proposed Project footprint is not located on federal lands; however, three (3) watercourses are present (i.e., Don River East Branch, Pomona Creek, and German Mills Creek). SARA applies to this Project with respect to federally listed aquatic SAR and federally listed migratory birds. The Project will be required to achieve compliance under both Endangered Species Act (ESA, 2007) and SARA.

A 1.5.2 Migratory Birds Convention Act, 1994 (as amended)

The federal *Migratory Birds Convention Act* (MBCA) was passed in 1917 and updated in 1994. The MBCA protects migratory bird populations by regulating potentially harmful anthropogenic activities. The MBCA and the *Migratory Birds Regulations* are federal legislative requirements that are binding on members of the public and all levels of government, including federal and provincial.

Protected species are listed under Article I of the MBCA. These species are native or naturally occurring in Canada and are species that are known to occur regularly in Canada. The legislation protects certain species, controls the harvest of others, and prohibits the commercial sale of all species. As described in Section 6 of the associated *Migratory Bird Regulations*:

> *"Subject to subsection 5(9), no person shall:*
>
> *(a) Disturb, destroy or take a nest, egg, nest shelter, Eider Duck shelter or duck box of a migratory bird, or*
>
> *(b) Have in his possession a live migratory bird, or a carcass, skin, nest or egg of a migratory bird except under authority of a permit therefor."*

The "incidental take" of migratory birds and the disturbance, destruction or taking of the nest of a migratory bird is prohibited. No permit can be issued for the incidental take of migratory birds.

Bird species not regulated under the MBCA include Rock Dove, American Crow, Brown-headed Cowbird, Common Grackle, House Sparrow, Red-winged Blackbird, and European Starling. Conversely, if the species identified is protected under Ontario's *Endangered Species Act, 2007* or Canada's *Species at Risk Act, 2002*, additional restrictions may apply.

Applicability to the Project

The MBCA applies to all of Canada. As such, the MBCA applies to the entire Project footprint and Study Area. Therefore, if a protected species or their nest is encountered during Project activities, the Project must comply with the prohibitions of the MBCA. Tree removals should follow appropriate timing windows or Best Management Practices.

A 1.5.3 Fisheries Act, 1985 (as amended)

The federal *Fisheries Act* was established in 1985, with the most recent amendments coming into effect on August 28, 2019. The *Fisheries Act* provides protection to fish and fish habitat such that:

> *"No person shall carry on any work, undertaking or activity that results in the harmful alteration, disruption or destruction of fish habitat" (Section 35 (1)).*

Fish habitat is defined by the *Fisheries Act* as:

> *"water frequented by fish and any other areas on which fish depend directly or indirectly to carry out their life processes, including spawning grounds and nursery, rearing, food supply and migration areas" (Section 2 (1)).*

The *Fisheries Act* requires that any work, undertaking, or activity avoid harmful alteration, disruption or destruction of fish habitat (HADD) unless authorized by Fisheries and Oceans Canada (DFO) (*Fisheries Act* Section 35.1).

Applicability to the Project

The *Fisheries Act* governs all fish habitat (as defined above) within Canada. The *Fisheries Act* applies to the Project footprint and Study Area with respect to three (3) watercourses (i.e., Don River East Branch, Pomona Creek, and German Mills Creek).

A 1.5.4 Endangered Species Act, 2007 (as amended)

The Ontario *Endangered Species Act* (ESA) was passed into law in 2007 and came into effect on June 30, 2008. Under the ESA, there are more than 200 species in Ontario that are identified as Extirpated, Endangered, Threatened, or of Special Concern. Section 9 of the ESA generally prohibits the killing or harming of a Threatened or Endangered species. Section 10 of the ESA prohibits the damage or destruction of the habitat of all Endangered and Threatened species. "Habitat" is broadly characterized within the ESA as the area comprised of the habitat of the species or an area on which the species depends directly or indirectly, to carry on its life processes, including reproduction, rearing of young, hibernation, migration, or feeding. A permit, or authorization, for activities that would otherwise not be allowable under Sections 9 or 10 of the ESA can be obtained.

In 2019 duties regarding administration of the ESA passed from MNRF to MECP. The act was amended, resulting in various changes in the governance and permitting in the ESA.

Species at Risk (SAR) that are defined as species listed as either Threatened or Endangered provincially, as well as their habitat, are afforded protection under the Endangered Species Act (2007). Species listed as Special Concern Provincially are not afforded protection under the ESA but have been included should the status of these species change under the ESA (2007).

Applicability to the Project

The ESA is applicable to the Project if provincially listed SAR and their critical habitat (in the case of Extirpated, Endangered, and Threatened species) are present. A number of such provincially listed SAR have been identified as potentially impacted by the Project (discussed in Part B). As a result, the Project will be required to comply with the ESA requirements.

A 1.5.5 Conservation Authorities Act, 1990 (as amended)

The *Conservation Authorities Act* (CAA) authorizes the formation of conservation authorities in Ontario and addresses their roles, responsibilities, and governance in resource management and environmental protection. The purpose of the CAA is:

> *"to provide for the organization and delivery of programs and services that further the conservation, restoration, development and management of natural resources in watersheds in Ontario."*

Section 28 of the CAA sets out prohibited activities that include development in areas that could be unsafe for development because of natural processes associated with flooding or erosion, and interference with, or alterations to, watercourses, wetlands, or shorelines.

Each of Ontario's 36 conservation authorities has its own Section 28 Ontario Regulation (O. Reg.). The core mandate of conservation authorities is to undertake watershed-based programs to protect people and property from flooding and other natural hazards and conserve natural resources for economic, social, and environmental benefits (Conservation

Ontario 2019; 2021). In the Project area, the CAA is applied via TRCA: Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses *O. Reg. 166/06*.

Applicability to the Project

Proposed Project activities within the TRCA regulated area will primarily be below grade, with a proposed culvert replacement at German Mills Creek being a notable exception. Metrolinx will continue its consultation with the TRCA for the Project with regards to construction activities in regulated areas in relation to *O. Reg. 166/06.*

A 1.5.6 Fish and Wildlife Conservation Act, 1997 (as amended)

The *Fish and Wildlife Conservation Act* (FWCA), applies to 'wildlife' which is defined as:

> *"an animal that belongs to a species that is wild by nature and includes game wildlife and specially protected wildlife" (Section 1 (1)).*"

Those species considered "specially protected wildlife" include those specially protected amphibians, birds, invertebrates, mammals, and reptiles, as identified within Schedules 6 to 11 under the FWCA. The FWCA is managed by the Ministry of Northern Development, Mines, Natural Resources and Forestry (MNDMNRF) and applies to all wildlife as defined under the FWCA. In instances where wildlife will require collection or relocation at any point in the Project (i.e., through trapping/collection and relocation), permits and approvals under the FWCA may be required.

Applicability to the Project

The probability of wildlife being found in the Project footprint (and not leaving on their own accord) is low. However, in the case that any wildlife protected under the FWCA are present on site the FWCA will apply.

A 1.5.7 Planning Act, 1990 (as amended) and the Provincial Policy Statement, 2020

The *Planning Act* was passed into law in 1990 and was last amended in September 2019. The *Planning Act* is provincial legislation that sets out the ground rules for land use planning in Ontario. The *Provincial Policy Statement* (PPS) is issued under Section 3 of the *Planning Act* by the Ministry of Municipal Affairs and Housing (MMAH). The PPS came into effect in 1995 and has been amended several times since - in 1997, 2005, 2014, and 2019. The latest PPS came into effect on May 1, 2020. The PPS provides policy direction on matters of provincial interest related to land use planning and development (MMAH 2014).

In Ontario, the long-term social and environmental health of the province is dependent on conserving biodiversity and protecting natural heritage and water resources, amongst others. The PPS defines seven (7) natural heritage features and provides planning policies for each under *Natural Heritage, Policy 2.1*. The *Natural Heritage Reference Manual* (MNR 2010) is a technical document used to help assess the seven (7) natural heritage features in addition to the MNRF's (2015) *Significant Wildlife Habitat Ecoregion Criteria Schedule* for each respective ecoregion (e.g., 5E, 6E, and 7E). Those natural heritage features identified within the PPS (MMAH 2014) include:

- Significant wetlands (including coastal wetlands);
- Significant habitat of endangered and threatened species;
- Fish habitat;
- Significant woodlands;
- Significant valley lands;

- Significant areas of natural and scientific interest (ANSI); and
- Significant Wildlife Habitat (SWH).

Each of these features is afforded varying levels of protection subject to guidelines and, in some cases, regulations. Municipalities are the primary lead for implementing provincial policies, such as the PPS and other planning-related policies, through their official plans. Generally, special buffers and studies are prescribed based on these natural heritage features and the land use proposed.

Applicability to the Project

Segment 3 of this Project which contains surface works associated with the TSF and EEB works associated with Segment 2 may result in alteration to natural heritage features under the *Planning Act*. Compliance with the PPS Policy 2.1 should be confirmed at detailed design.

A 1.5.8 York Region Official Plan, 2010 (as amended)

The York Region Council adopted the current *York Region Official Plan, 2010* (YROP) in 2009; the MMAH approved the YROP in 2010. The YROP currently includes six (6) amendments, the most recent adopted on February 20, 2014. The policies of the YROP guide new planning and development in York Region. The north end of the Study Area, which is located in the Region, is primarily designated Urban Area in Map 1 'Regional Structure' outside of the *Greenbelt Plan* and *Oak Ridges Moraine Conservation Plan*. The Project is symbolized as 'Regional Corridor' and as 'Subway/Subway Extension' until 16th Avenue in Map 1. A few sections along the existing Study Area are designated as Regional Greenlands System (Greenlands; the Regions Natural Heritage System). The northernmost location is the riparian corridor associated with German Mills Creek, where the existing rail corridor crosses 16th Avenue. Pomona Creek, which crosses the Project at Yonge Street and the 407 Express Toll Route (ETR), is also designated Greenlands. Lastly, the location where the Don River East Branch crosses Yonge Street is also a part of the Greenlands. As part of the Greenland areas, Woodlands is identified on Map 5 'Woodlands'. No Environmentally Significant Areas, ANSIs, and Key Hydrologic Features occur in the Study Area in the Official Plan mapping.

York Region includes the Town of Richmond Hill, the City of Markham, and the City of Vaughan in the Study Area. These three (3) municipalities have their own Official Plans, which are discussed below.

A 1.5.9 Richmond Hill Official Plan, 2010 (as amended)

The Richmond Hill Council adopted the current *Richmond Hill Official Plan* in July 2010. The *Richmond Hill Official Plan* was later modified by York Region Council on May 19, 2011, and the Ontario Municipal Board partially approved it on January 23, 2018. The north end of the Study Area, located in Richmond Hill, falls into several lands uses, as indicated on Schedule A2 "Land Use". The Urban Structure includes Utility Corridor, Parkwaybelt West, Richmond Hill Centre, Key Development Area, the Greenway System and neighbourhood. Natural Core (NHS) also occurs as a Land Use and contains Significant Woodlands. The woodlot at the corner of High Tech Road and Yonge Street, as well as the residential woodlot between the houses on Boyle Drive and Yonge Street, are considered Significant Woodlands within the Natural Core. The Natural Core areas are the riparian corridors associated with German Mills Creek, where the existing rail corridor crosses 16th Avenue and Pomona Creek, which crosses the Project at Yonge Street and 407 ETR.

Lastly, the Key Development Area is Yonge Street and 16th Avenue intersection area. It will be an intensification area and major node of retail and commercial development on the Yonge Street Regional Rapid Transit corridor. A draft

Secondary Plan and draft Implementing Zoning By-law have been prepared and should be included in planning considerations.

A 1.5.10 City of Markham Official Plan, 2014 (as amended)

For the City of Markham, the most western city boundary is Yonge Street, and the most southern city boundary is Steeles Avenue East. Meaning, any activities on the east side of Yonge Street north of Steeles Avenue East and south of 407 ETR will be subject to the *City of Markham's Official Plan*.

The new *City of Markham Official Plan* provides a vision for growth in Markham to 2031, based on the principles of protecting the natural environment and agricultural lands, building healthy communities, increasing travel options and maintaining a strong economy. The 2014 *City of Markham Official Plan* was adopted by Council on December 10, 2013, and approved by York Region on 12 June 12, 2014.

The 2014 *City of Markham Official Plan* has been appealed to the Ontario Municipal Board and is not fully in force. On November 24, 2017, the Ontario Municipal Board issued a Partial Approval Order, which was updated on April 9, 2018, by the Local Planning Appeal Tribunal, bringing parts of this Plan into force. Until a Tribunal decision to approve all or part of the 2014 *City of Markham Official Plan* has been made, the 1987 Official Plan will continue to remain in force.

Schedule 'A Land Use, of the 1987 *City of Markham Official Plan*, indicates that the four (4) types of Land Use occur in the Study Area. Urban Residential and Commercial are the dominant uses, followed by Cemetery and Hazard Lands. Hazard Lands are the watercourses Don River East Branch and Pomona Creek and are part of an Environmental Protection Area (Valleylands) and an Activity Linkage corridor. The 2014 Official Plan terminology will be updated, and these lands will be called 'Greenway' (the term for the NHS).

A 1.5.11 City of Vaughan Official Plan, 2010 (as amended)

For the City of Vaughan, the most eastern city boundary is Yonge Street, and the most southern city boundary is Steeles Avenue East. Meaning, any activities on the west side of Yonge Street north of Steeles Avenue East and south of the 407 ETR will be subject to the City of Vaughan's Official Plan.

The City of Vaughan undertook an ambitious three-year project to create a new Official Plan as part of the City's integrated Growth Management Strategy. On September 7, 2010, Council adopted a new Official Plan and endorsed with modifications by the Region of York on June 28, 2012. It was appealed to the Ontario Municipal Board and has subsequently received partial approval. It addresses all elements of effective, sustainable, and successful city-building while managing projected growth to 2031.

Schedule 13 Land Use of the Official Plan indicates Natural Areas, Parks, Private Open Spaces, Low-Rise Residential, Low-Rise Mixed-Use, Mid-Rise Mixed-Use, and the Yonge Street Corridor Secondary Plan area. The Natural Areas is designated as Core Features (the City's NHS) on Schedule 2 Natural Heritage Network and is associated with the Don River East Branch and The Thornhill Club. Additionally, the City of Vaughan's Official Plan Schedule 4 Oak Ridges Moraine Conservation Plan & Greenbelt Plan Areas indicates this section of Don River East Branch in the Study Area is considered a Greenbelt Plan External Linkage.

A 1.5.12 City of Toronto Official Plan, 2019 (as amended)

The remainder of the Study Area south of Steeles Avenue East falls within the City of Toronto, including the ROW on the north side of Steeles Avenue East. The *City of Toronto Official Plan* is intended to ensure that the City of Toronto evolves, improves and realizes its full potential in transit, land use development, and the environment. The most recent *City of Toronto Official Plan* consolidation of Chapters 1 to 5 and Schedules 1 to 4 is in effect as of February 2019. The most recent consolidation of Chapters 6 and 7 is in effect as of June 2015.

Map 16 Land Use Plan designates the Study Area directly adjacent to Yonge Street as Mixed Use Areas. Beyond the Mixed Use Areas, the Map indicates Neighbourhoods, Parks, Other Open Space Areas, and a Utility Corridor. No Natural Areas (the City's NHS) are indicated in the Study Area.

Applicability to the Project

The lands surrounding the Don River East Branch and some of its tributaries have been identified and designated as part of the NHS for four (4) of the five (5) Municipal and Regional Official Plans that occur in the area (the City of Toronto being the one that does not designate this area as part of the NHS). These natural heritage features are connected to other natural heritage features and provide linkages that facilitate wildlife movement.

Exemptions for infrastructure development typically exist in Official Plans, and as the Official Plans designate the section of Yonge Street as a Subway extension, it is not expected these policies will hinder the progress.

For any works taking place within the NHS where impacts to NHS may occur, Metrolinx will implement appropriate natural environment mitigation measures to reduce or eliminate the potential impacts (further discussed in Part B).

A 2.0 Update to the Project Description

A 2.1 Summary of Design Changes

This section provides a detailed description of the changes to the YNSE Project since completion of the 2009 EPR and 2014 EPR Addendum. **Table A 2-1** provides a high-level overview depicting the 2009 EPR project components, 2014 EPR Addendum project components, and currently proposed YNSE project components for comparison purposes.

A 2.2 EPR Addendum Study Area

The YNSE EPR Addendum Study Area generally encompasses the proposed project components (i.e., subway alignment, Stations, Train Storage Facility, launch and extraction shafts, and related ancillary components) and extends approximately 9 kms in length, commencing at the existing Finch Station along the existing Line 1 Yonge–University in the City of Toronto, and extends northerly through the City of Vaughan (to the west) and City of Markham (to the east), to Moonlight Lane (just north of the proposed TSF) in the City of Richmond Hill, York Region.

A 30 m buffer was applied to the proposed alignment to delineate a sufficient EPR Addendum Study Area to comprehensively document existing environmental conditions beyond the scope of this report. The YNSE EPR Addendum Study Area Key Map is included as **Figure A 2-1**.

With respect to this Natural Environment Report, the Natural Environment Study Area (the Study Area) fully encompasses the EPR Addendum Study Area, as defined above. The Study Area has been defined as the Project footprint (based on the currently available conceptual design information) plus a 120 m buffer **(Figure A 2-2)**, as recommended by the *Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005* (MNR 2010). However, it is important to note that a number of the secondary source data search areas extend well beyond the Study Area (e.g., wildlife atlases, such as the Ontario Breeding Bird Atlas use a 10 km grid system, as illustrated in **Figure A 2-3**).

Additionally, in order to ensure any potential impacts relating to Species at Risk were identified, this report incorporates text and findings from the OneT+ (2021) *Preliminary Screening for Species at Risk Memorandum* which applies a 300 m buffer to the Project footprint (hereafter “SAR Desktop Study Area”). Due to the extent of the SAR Desktop Study Area, not all records can be directly correlated to a single Study Area Segment. Project Segments are identified in the following sub-sections (i.e., **Sections A 1.1.1, A 2.2.2, and A 2.2.3**).

For reporting purposes and to better characterize the findings of the various environmental and technical studies, the EPR Addendum Study Area was further sub-divided into three (3) geographic segments. The three (3) break lines for the Segments remain consistent between the EPR Addendum Study Area and the Natural Environment Study Area.

Table A 2-1: Summary of YNSE Design Components, Changes & Rationale

Project Component	2009 EPR	2014 EPR Addendum	Current EPR Addendum	Rationale for Change
1. Proposed Subway Horizontal Alignment	Approximately 6.8 km underground subway alignment from the existing Finch Station to the proposed Richmond Hill Center Station (in the vicinity of Highway 7 and Yonge Street in the City of Richmond Hill). From Finch Station to just south of the Holy Cross Catholic Cemetery, the alignment follows Yonge Street underground. North of the Holy Cross Catholic Cemetery, the subway alignment swings slightly eastward, crossing the northwest corner of the Langstaff development lands. The alignment then turns northward under Highway 407/Highway 7. North of the Richmond Hill Centre Station, the alignment terminates at the end of subway tail tracks in the transit corridor on the west side of the CN Bala Richmond Hill GO Line.	Extension of the subway alignment by approximately 1 km from previous terminus at Richmond Hill Centre Station to 16th Avenue in the City of Richmond Hill.	The proposed YNSE subway alignment is approximately 9.5 km in total commencing at the existing Finch Station in the City of Toronto northerly to just beyond the limit of the proposed TSF (at Moonlight Lane) in the City of Richmond Hill. The proposed revenue portion of the alignment is approximately 8 km in length, while the remaining trackwork services the TSF. The proposed below grade portion of the subway alignment is approximately 6.5 km, beginning at Finch Station and extending to the proposed tunnel portal structure just south of Langstaff Road. Between Finch Station and Royal Orchard Blvd, the underground alignment is proposed to run under Yonge Street. It then curves to reach Bay Thorn Drive and continue to the east, before turning northwards where the alignment generally follows the existing CN Rail ROW until the proposed portal structure (just south of Langstaff Road) where the subway alignment emerges to at grade. The proposed at grade portion of the subway alignment is approximately 3 km in length beginning just south of Langstaff Road (from the proposed portal structure), with tracks located within and adjacent to the CN rail corridor ROW and terminating just beyond the limit of the proposed TSF (at Moonlight Lane) in the City of Richmond Hill. The at grade subway alignment generally follows the existing CN rail corridor ROW; however, the westernmost subway track is situated immediately outside the CN Rail ROW boundary for the majority of the at grade segment.	While the YNSE was previously envisioned to terminate just north of Highway 7, the area to the north was identified by Metrolinx as an area where refinement could enhance Project benefits and reduce capital costs. The proposed alignment that forms the basis for this EPR Addendum specifically addresses the challenges and opportunities of serving these areas and their future residents and employees.
2. Proposed Subway Vertical Profile	Below grade vertical profile design with a crossing above grade (bridge) over the East Don River. Proposed station and alignment depths were not presented within the 2009 EPR.	N/A	The subway alignment vertical profile was designed to reduce the depth of the stations along the route, except at the potential Royal Orchard Station, which is located approximately 500 m north of the deep East Don River Valley. The depth of the station platform at this location ranges from approximately 40 to 50 m below the existing ground surface, to account for tunneling south of the station below the East Don River.	The current YNSE vertical profile changes from below grade to at grade south of Langstaff Road, thereby eliminating the above grade (bridge) crossing over the Don River. The currently proposed profile reduces the depth of the stations along the route (except at Royal Orchard Station), while meeting applicable tunnel grade requirements (e.g., TTC Design Manual DM-0204-04).
3. Tunnels	Approximately 6.8 km underground tunneled alignment from the existing Finch Station to the proposed Richmond Hill Center Station in the vicinity of Highway 7 and Yonge Street in the City of Richmond Hill. For the purposes of determining the potential environmental effects of the Transit Project, the following approach was assumed within the 2009 EPR: • Richmond Hill Centre Station and surrounding area would provide sufficient space for the southbound launch of the TBM and as well as storage of tunnel liners and other tunnelling materials and equipment. • Existing surface parking in the southwest quadrant of the Yonge Street / Steeles Avenue intersection could also provide sufficient space	The underground Train Storage Facility assessed in the 2014 EPR Addendum would be located adjacent to the CN Rail corridor, beginning approximately 100 m north of the Richmond Hill Centre Station. Cut and cover construction methodology was assumed for this work, during which the ground surface is opened (cut) a sufficient depth to construct the subway tunnel structure.	The proposed conceptual design involves the construction of tunnels for the underground alignment portion of the current YNSE alignment with the following key parameters: • Approximately 6 kms of twin 5.6 m internal diameter TBM tunnels. • Twin tunnels run from Finch Transition Box Structure to proposed portal location. • Reference YNSE Alignment assumes all tunneling undertaken using two (2) TBMs. • Launched at the North Portal Launch Shaft, located immediately west of CN/GO rail tracks and south of Langstaff Road. • Both TBM's are to be removed at the Finch Transition Box Structure where the extraction shaft is to be located.	There is no change to the need for tunneling as part of the project. The currently proposed YNSE alignment still entails the construction of approximately 6 kms of tunnels; whereas the approximate length of tunnelling in the 2009 EPR was 6.8 km.

Project Component	2009 EPR	2014 EPR Addendum	Current EPR Addendum	Rationale for Change
	for the southbound launch of the TBM and storage of tunnel liners; and other tunnelling materials and equipment. The 2009 EPR Identified the East Don River crossing as the TBM extracting shaft location (one at each end of the crossing). Cummer/ Drewry Station was also identified as a potential location to remove the TBM in the 2009 EPR. The 2009 EPR assumed a twin-bored tunnelling method for the entire running structure from Finch Station to the Richmond Hill Centre Station, with the exception of the section between the existing Finch Station tail tracks and Cummer/Drewry Station and the approaches to the proposed East Don River bridge.			
4. Finch Station Modifications	N/A	N/A	Modifications to existing Finch Station as follows: • Upgrading existing tail track to support future revenue service. • Construction of the Finch Transition Box Structure, which is an underground structure that provides the transition between the existing Finch Station tail track structure and the new YNSE twin tunnels. • Upgrading operational and support systems (e.g., signal upgrades) within the existing tail track area. • Upgrade to the existing electrical and communication back-of-house room at the station. • Upgrade to the existing Hendon Avenue Traction Power Substation located approximately 130 m west of the station. • An approximately 130 m long underground duct bank extending westerly along Hendon Avenue from the existing Finch Station.	Modifications to the existing Finch Station and nearby/associated facilities such as the existing Hendon Avenue Traction Power Substation are required to enable YNSE project implementation and future revenue service beyond Finch Station.
5. Stations	Total of six (6) below grade stations proposed.	No new or modified stations were proposed.	Total of Four (4) below grade stations and two (2) at grade stations are proposed, as follows: • Cummer Station (below grade). • Steeles Station (below grade) and bus terminal. • Clark Station (below grade) and bus terminal. • Royal Orchard Station (below grade). • Bridge Station and bus terminal (at grade). • High Tech Station (at grade). Specific infrastructure associated with each proposed station is further detailed within the rows below.	Two stations, Bridge and High Tech Stations, are proposed at grade due to change in proposed subway alignment (i.e., at grade). The current station alignment maximizes the benefits of the subway extension while achieving the lowest cost for the acceptable Project scope. Of all considered alignments, the currently proposed route is the only one that provides the opportunity for one Neighbourhood Station to be included in the Project scope while maintaining costs within the funding envelope.
	Cummer / Drewry Station: Location: Yonge Street & Cummer / Drewry Avenue, approximately 800 m north of Finch Station. Station components: below grade station box, concourse, bicycle facilities, ventilation shaft, Bus loop located at Drewry Avenue. Four (4) pedestrian entrances: ○ Main entrances located at the Northeast and southwest quadrants of the		***Potential* Cummer Station (below grade)** Location: Slight shift to the southwest. The proposed station is an in-line underground station located at the intersection of Cummer/Drewry Avenue and Yonge Street and includes a bus loop on Drewry Avenue west of Yonge Street with associated bus operators' facilities. Station components include:	The proposed location shift is primarily to avoid utility conflicts. The reduced number of station entrances minimizes potential property impacts while maintaining access and circulation in a way that accommodates future ridership requirements.

Project Component	2009 EPR	2014 EPR Addendum	Current EPR Addendum	Rationale for Change
	intersection of Cummer Avenue and Yonge Street. ○ Southeast corner of Cummer Avenue/Drewry Avenue and Yonge Street. ○ East side of Yonge Street at the north end of the station box.		• A below grade, two-level station box with one central platform at track level and a public concourse level above. • Up to two (2) at-grade pedestrian entrances (locations to be determined as part of further design development). • Up to two (2) Fire Fighter's Access Shafts (FFA). • Secured bicycle storage.	
	Steeles Avenue Station and bus terminal Location: Yonge Street and Steeles Avenue, approx. 1.2 km north of Cummer/ Drewry Avenue. Station components: below grade station box, concourse, bicycle facilities, ventilation shaft. • five (5) pedestrian entrances: ○ Two (2) street entrances located north of the station box on each side of Yonge Street. ○ Two (2) street entrances located south of the station box on each side of Yonge Street. ○ One (1) entrance from median located on Steeles Avenue. • Underground bus terminal below Steeles Avenue West. • Passenger Pick-up and Drop-Off (PPUDO). • Below grade bus terminal with three (3) bus access ramps and a bus platform for 25 buses.		**Steeles Station (below grade) and bus terminal** Location: Yonge Street at the intersection with Steeles Avenue, shifted south from 2009 EPR. Station components changes include: • Three (3) pedestrian entrances (locations to be determined as part of further design development): • One (1) FFA. • Secured bicycle storage. • At grade bus terminal at the southwest quadrant of Yonge Street and Steeles Avenue • Potential road modifications to accommodate curbside bus platforms located at the Yonge Street and Steeles Avenue intersection.	The bus terminal at Steeles Station is proposed to be an at grade terminal to avoid conflicts with the existing York Durham Sanitary Sewer. The reduced number of station entrances minimizes potential property impacts while maintaining access and circulation in a way that accommodates future ridership requirements.
	Clark Avenue Station • Location: Yonge Street and Clark Avenue approximately 1 km north of Steeles Avenue. • Station components: below grade station box, concourse, bicycle facilities, ventilation shaft. • Five (5) Pedestrian entrances: ○ One (1) main entrance southwest corner of Clark Avenue and Yonge Street. ○ One (1) main entrance northeast corner of Clark Avenue and Yonge Street. ○ One (1) north end of the station and on the west side of Yonge Street. ○ One (1) entrance at the east side of Yonge Street.	No new stations were proposed.	**Clark Station (below grade) and bus terminal** Location: No change, slight lateral expansion and shift southerly. Station components changes include: • Up to two (2) pedestrian entrances (locations to be determined as part of further design development). • Addition of bus facility with associated bus operator facilities.	The reduced number of station entrances minimizes potential property impacts while maintaining access and circulation in a way that accommodates future ridership requirements. The addition of a bus terminal further enhances transit system integration and improves transfers between transit modes.
	Royal Orchard Station • Location: intersection of Yonge Street and Royal Orchard Blvd., approximately 800 m north of Centre Street. • Station components: below grade station box, concourse, bicycle facilities, ventilation shaft. • Two (2) pedestrian entrances: ○ One (1) main entrance northeast corner of Royal Orchard Blvd. and Yonge Street. ○ One (1) entrance located southwest corner of Yonge Street and Thornhill Avenue.		***Potential* Royal Orchard Station (below grade)** Location: Yonge Street, south of Royal Orchard Blvd. Station components changes include: • Up to two (2) pedestrian entrances (locations to be determined as part of further design development). • A deeper station box due to proximity to the East Don River Valley topographic depression. This change eliminates the need for the Don River above grade crossing. • Secured bicycle storage.	Change to station location and depth as a result of changes in subway horizontal alignment and vertical profile. See rationale for alignment and profile change above.

Project Component	2009 EPR	2014 EPR Addendum	Current EPR Addendum	Rationale for Change

	Langstaff / Longbridge Station
	• Location: between Longbridge Road and Langstaff Road, approximately 1 km north of Royal Orchard Blvd.
	• Station components: below grade station box, concourse, bicycle facilities, ventilation shaft.
	• PPUDO.
	• Commuter parking.
	• Two (2) pedestrian entrances:
	  ○ One (1) on Hydro One property currently hosting a 230/500 kV transmission line south of Highway 407 and west of Yonge Street.
	  ○ One (1) located at the southeast corner of Yonge Street and Langstaff Road East.
			Bridge Station and bus terminal (at grade)
			Location: west of the CN Rail Corridor and north of Highway 407 and Highway 7.
			
			Station components changes include:
			• Three (3) pedestrian entrances (locations to be determined as part of further design development).
			• Bus terminal.
			• Passenger and service emergency exit.
			• Secured bicycle storage.
				The change in station location is in response to changes in the subway horizontal alignment and vertical profile discussed above. The reduction in number of station entrances minimizes potential property impacts while maintaining access and circulation in a way that accommodates future ridership requirements.

	Richmond Hill Centre Station – Transit Hub
	• Location: east of Yonge Street traversing High Tech Road, west of the CN rail corridor and north of Highway 7, approximately 1 km north of Royal Orchard Blvd.
	• Station components: below grade station box, concourse, bicycle facilities, ventilation shaft.
	• Two (2) pedestrian entrances:
	  ○ One (1) located at northeast corner of the station box.
	  ○ One (1) located at the southeast corner of the station box.
	• Bus terminal.
	• PPUDO.
	• Transit Hub.
			High Tech Station (at grade)
			Location: east of Yonge Street traversing High Tech Road, west of the CN rail corridor, and north of Highway 407 and Highway 7 and adjacent to Richmond Hill Centre Terminal.
			
			Station components changes include:
			• Two (2) pedestrian entrances (locations to be determined as part of further design development).
			• Secured bicycle storage.
			• A revised PPUDO design to accommodate the revised station configuration.
				The change in station location is in response to changes in the subway horizontal alignment and vertical profile discussed above. Similar to the previously envisioned Richmond Hill Centre Station, the currently proposed High Tech Station will accommodate transfers to GO train and GO bus services, as well as local transit, and will improve subway access to the Richmond Hill Centre and Langstaff Gateway development areas.

6. Proposed Emergency Exit Buildings (EEBs)	Six (6) Emergency Exit Buildings (EEBs): • EEB 1: Private property on the east side of Yonge Street between Centre Avenue and Newton Drive. • EEB 2: Private property on the west side of Yonge Street between Doncaster Avenue and the CN rail corridor). • EEB 3: Within municipal right-of-way on the west side of Yonge Street opposite Arnold Avenue. • EEB 4: Within municipal right-of-way on the east side of Yonge Street between Centre Street and the proposed East Don River Bridge. • EEB 5: Private property on the east side of Yonge Street between Uplands Avenue and Kirk Drive. • EEB 6: Within municipal right-of-way on the north side of Highway 7 west of Garden Avenue.	Two (2) additional EEBs: • EEB 7: Located at the proposed TSF parking lot, east of Coburg Crescent. • EEB 8: Located west of the proposed alignment, south of Coburg Crescent.	Seven (7) EEBs (precise locations to be determined as part of further design development): • EEB-1: located approximately between the existing Finch Station and the potential Cummer Station. • EEB-2: located approximately between the potential Cummer Station and the confirmed Steeles Station. • EEB-3: located approximately between the confirmed Steeles Station and the confirmed Clark Station. • EEB-4: located approximately between the confirmed Clark Station and the potential Royal Orchard Station. • EEB-5: located approximately in the vicinity of the potential Royal Orchard Station. • EEB-6: located approximately north of Royal Orchard Station in the vicinity of Bay Thorn Drive. • EEB-7: located approximately north of the potential Royal Orchard Station and south of the portal structure.	The TTC Design Manual requires EEBs to be located such that the distance from any underground location to an EEB is not greater than 381 m – i.e., the spacing between EEBs or between EEBs and the closest station platform or portal entrance must be 762 m or less. Applying this standard to the currently proposed design has identified the need for a total of seven (7) EEBs.
7. Traction Power Substations (TPSSs)	Traction Power is provided by a live third rail that provides electric power through a conductor placed alongside the rail. In order to give the voltage a boost at regular intervals along the subway alignment, electrical	N/A	Seven (7) TPSSs at the following locations: • Three (3) TPSS in the approximate vicinity of Cummer, Steeles, and Clark Stations.	The currently proposed subway alignment requires additional power compared to the alignment as presented in 2009 EPR due to its extended length (an approximate 6.8 km subway

Project Component	2009 EPR	2014 EPR Addendum	Current EPR Addendum	Rationale for Change
	substations (i.e., Traction Power Substations [TPSSs]) are required. Traction power requirements dictate that TPSSs are not spaced more than 2.5 km from one another; however, a 2 km separation between TPSS is more typical. Four (4) TPSSs locations were included within the 2009 EPR in the vicinity of Steeles Station, Clark Station, Royal Orchard Station and Richmond Hill Centre Station.		• One (1) TPSS in the approximate vicinity of the potential Royal Orchard Station. • One (1) TPSS in the approximate vicinity of Bridge Station. • One (1) TPSS standalone building integrated with EEB-4 between the confirmed Clark Station and the potential Royal Orchard Station. • One (1) TPSS at the Train Storage Facility (TSF), immediately south of 16th Avenue.	extension was assessed in 2009 compared to the approximate 9.5 km extension currently proposed). This has resulted in the need for additional TPSS facilities. The current EPR Addendum assess a total of seven (7) TPSSs locations.
8. Proposed Portal Structure	N/A	N/A	The tunnel portal structure will be located south of Langstaff Road, west of the CN corridor ROW. This concrete structure serves as entrance/exit to and from the subway tunnel, where the alignment transitions between below and at grade.	This structure is required to allow for the below-grade to at-grade transition of the subway alignment.
9. Proposed Launch Shaft	For the purposes of determining the potential environmental effects of the Transit Project, the following approach was assumed within the 2009 EPR: • Richmond Hill Centre Station and surrounding area would provide sufficient space for the southbound launch of the TBM and as well as storage of tunnel liners and other tunnelling materials and equipment. Existing surface parking in the southwest quadrant of the Yonge Street/Steeles Avenue intersection were also identified as providing sufficient space for the southbound launch of the TBM and storage of tunnel liners.	N/A	The current launch shaft location corresponds to a parcel of land west of the existing CN tracks and proposed portal structure, between Holy Cross Cemetery and Langstaff Road. A construction staging area/worksite will also be prepared for the assembly of the TBM at this location. The launch shaft structure is expected to be approximately 130 m in length.	The currently proposed location of the launch shaft reduces potential property impacts by using vacant industrial properties near the CN Rail ROW, south of Langstaff Rd. and has sufficient space to meet the functional needs of TBM operations.
10. Proposed Extraction Shaft	The 2009 EPR Identified the East Don River crossing as the TBM extraction shaft location (one at each end of the crossing). Cummer/ Drewry Station was also identified as a potential location to remove the TBM in the 2009 EPR.	N/A	The proposed extraction shaft for the TBM operations will be located within the boundaries of the Finch Transition Box Structure that will connect the existing Finch tail track with the new YNSE alignment running north.	A new extraction shaft location is required since an at grade crossing of the East Don River is no longer proposed. There is sufficient space at the Finch Transition Box Structure to permit the removal of the TBM.
11. Proposed Modifications to Bridges/ Structures/ Culverts	• East Don River crossing above-grade for both Subway and Roadway. Includes replacement of an existing culvert. • Proposed modifications to twin-box culvert located north of Highway 7 near Richmond Hill Centre Station.	N/A	• Design, construction, maintenance and removal of a temporary pedestrian bridge across the subway and CN rail corridors to replace the existing pedestrian bridge connecting Richmond Hill Centre (bus) Terminal and Langstaff GO Station. • Demolition of the pedestrian overpass bridge at Richmond Hill Centre will occur once bus operations are shifted to Bridge Station. • Crossing of East Down River is now below-grade, meaning a new structure at this location is no longer required. • Langstaff Road East grade separation. • Replacement of the existing culvert conveying German Mills Creek north of 16th Avenue. • A number of drainage culverts along the at grade portions of the alignment may be impacted (modified or replaced) to enable implementation of the Project. Any such culverts will be identified and addressed during future phases of design.	To provide for continuous access across the rail corridor and subway alignment, the existing pedestrian bridge at Richmond Hill Centre Terminal is proposed to be replaced with a temporary pedestrian bridge. Temporary pedestrian bridge will be in place until Bridge Station is complete, with the Bridge Station providing access across the corridor. A new structure to carry the subway over the East Don River is no longer required now that the subway is below grade at this location. The existing culverts conveying German Mills Creek needs to be replaced to accommodate the tail tracks for the proposed TSF.
12. Proposed Train Storage Facility (TSF)	N/A	Underground Train Storage Facility (TSF):	At grade Train Storage Facility (TSF): • Capacity: 15 trains for overnight storage.	The current configuration for the proposed TSF was selected because it avoids reconstruction of

Project Component	2009 EPR	2014 EPR Addendum	Current EPR Addendum	Rationale for Change
		• Capacity: 14 trains; two (2) trains stored at Richmond Hill Centre Station and the remaining 12 trains stored at the TSF. • Location: north of the Richmond Hill Centre Station. • Maintenance building for staff access to the proposed TSF east of Coburg Crescent and associated 25-30 space employee parking lot. • A combined maintenance operators' facility and Electrical Service Building • A ventilation shaft. • A drop shaft (a type of maintenance shaft).	• Location: in the vicinity of the CN corridor and 16th Avenue, north of High Tech Station. • Transportation facility near Bantry Avenue. • Rail Cars & Shops Facility (RC&S) south of 16th Avenue, including parking spaces for staff and visitors.	overhead bridges (High Tech, Bantry, and 16th Avenue), promotes the consolidation of buildings to minimize impacts to City of Richmond Hill property, accommodates a future multi-use trail to be completed by the municipality, and because it meets functional TTC requirements. A drop shaft is no longer necessary now that the TSF is at grade.

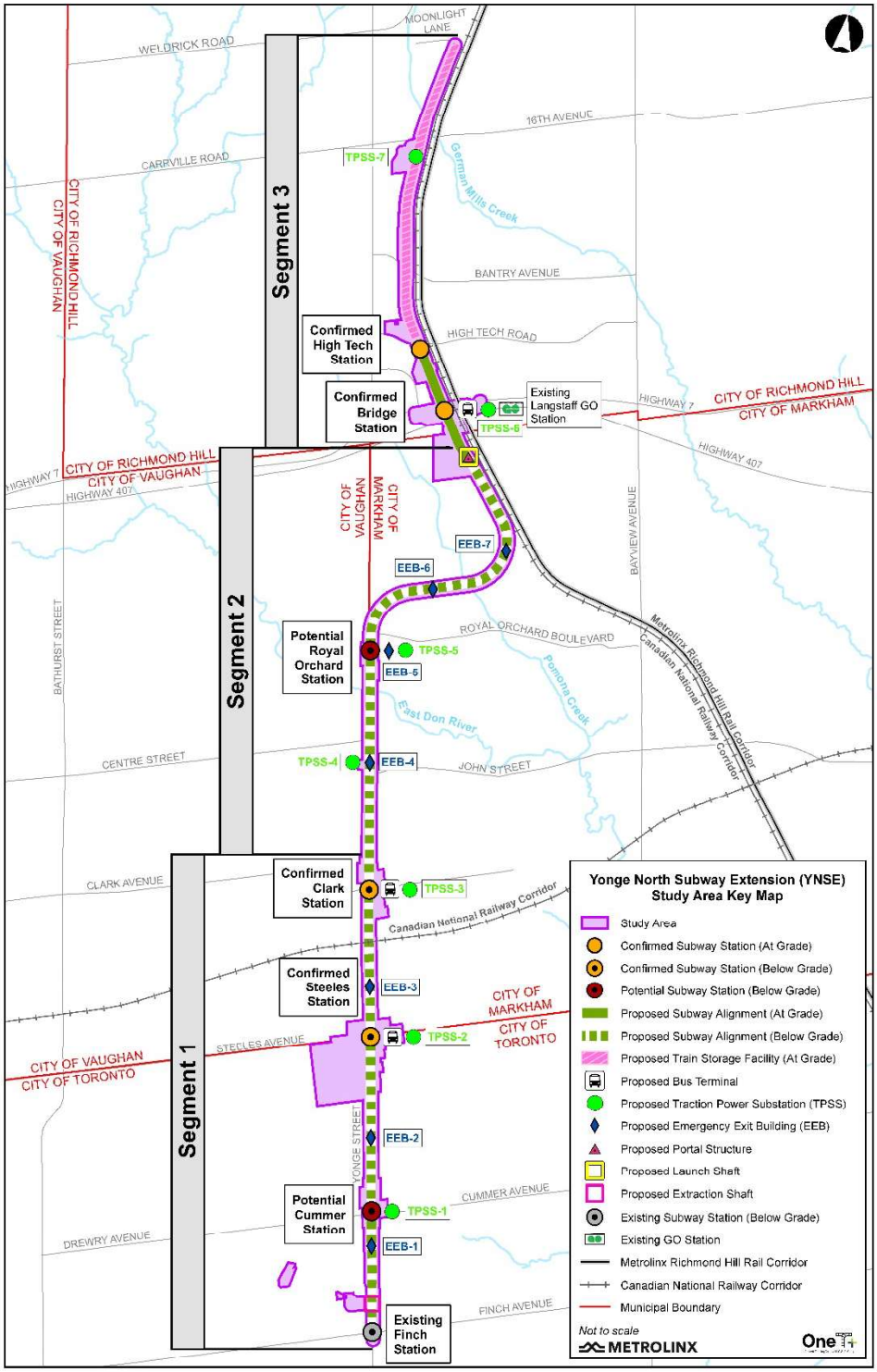


Figure A 2-1: YNSE EPR Addendum Study Area Key Map

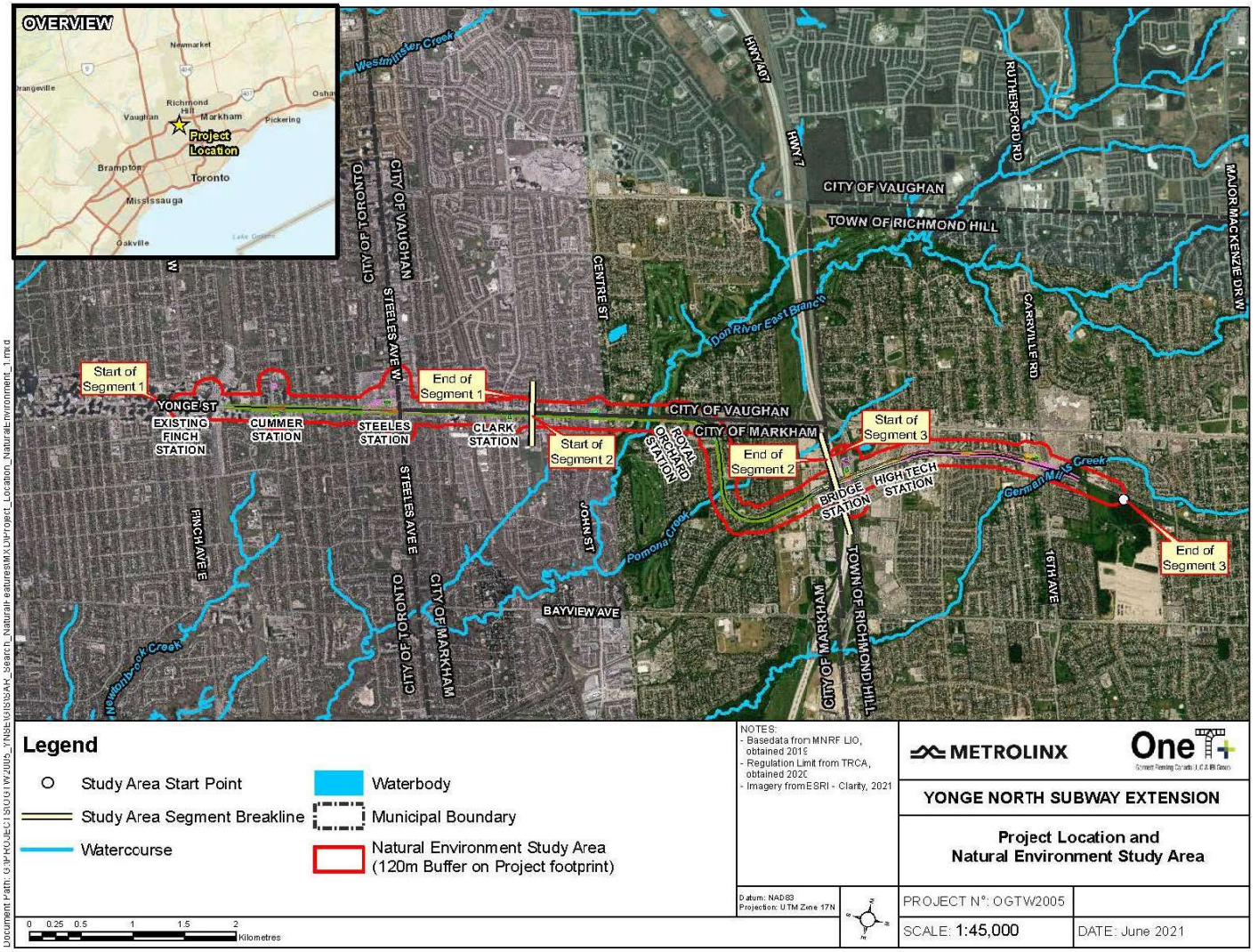


Figure A 2-2: Project Location and Natural Environment Study Area

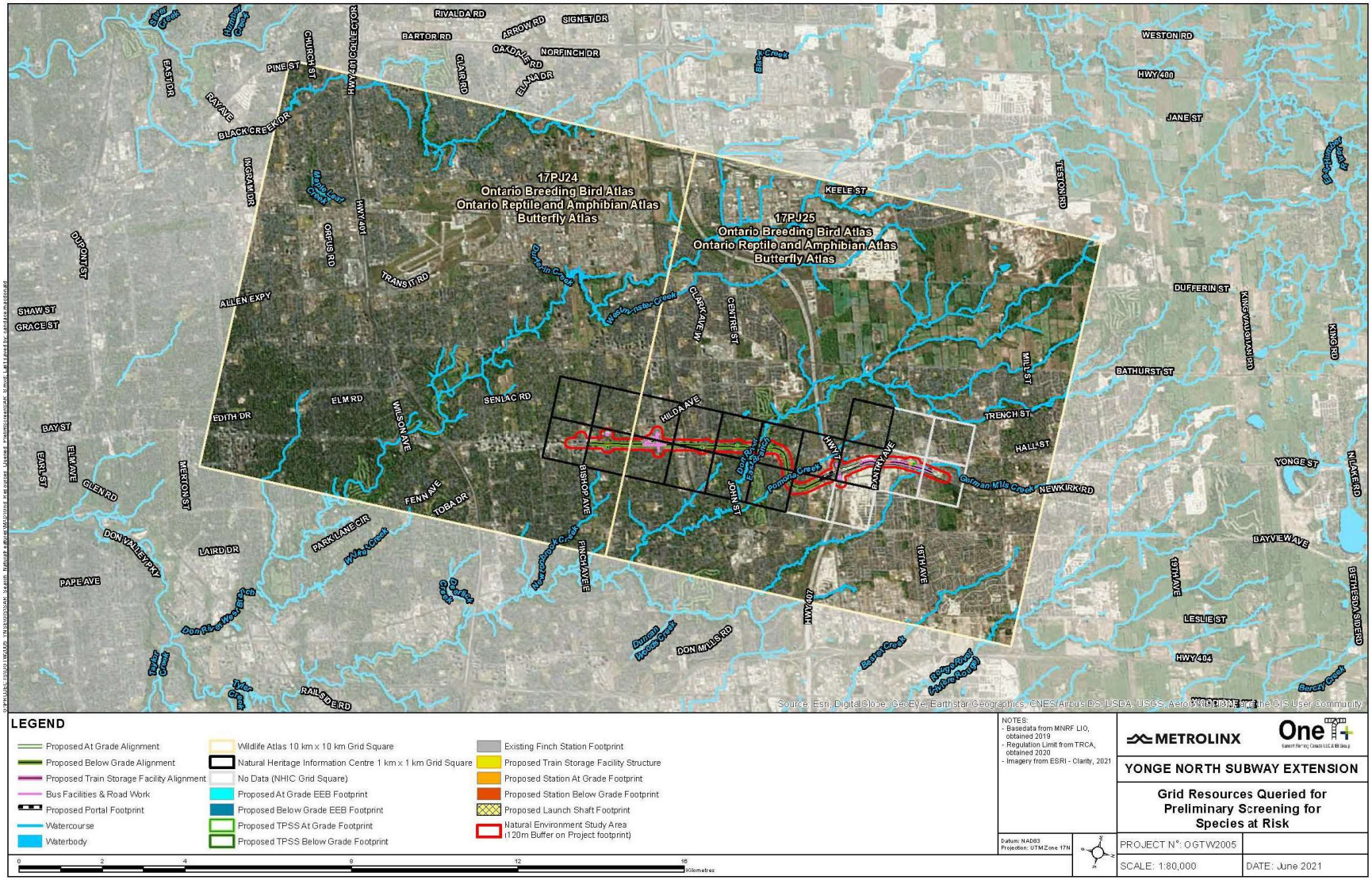


Figure A 2-3: Grid Resources Queried for Preliminary Screening for Species at Risk

A 2.2.1 Segment 1 – Finch Station to Clark Station (Below Grade)

Segment 1 starts at the existing Finch Station and traverses northward to the proposed Clark Station. It should be noted that this segment is inclusive of the proposed Clark Station and also includes the proposed Cummer Station, Cummer Station Bus Loop, Steeles Station, and Steeles Station Bus Terminal. The entirety of the alignment in this segment will be below grade. At Steeles Avenue, the Project Study Area crosses the boundary between the City of Toronto and York Region, following which Yonge Street divides the City of Vaughan to the west and the City of Markham to the east.

A 2.2.2 Segment 2 – Clark Station to Portal/Launch Shaft (Below Grade)

Segment 2 starts just beyond the limits of the proposed Clark Station and extends northward to the proposed portal structure and launch shaft location, just south of Langstaff Road East within the City of Markham. It should be noted that this segment is inclusive of the entirety of the proposed portal and launch shaft footprint area, extending north to the proposed Bridge Station and west from the CN rail corridor towards Ruggles Avenue. It also includes the proposed Royal Orchard Station. This segment of the alignment runs below grade until it reaches the tunnel portal, where it emerges to the surface. Just north of Langstaff Road East, south of the 407 ETR, the Project Study Area crosses into the City of Richmond Hill within York Region.

A 2.2.3 Segment 3 – Portal/Launch Shaft to Moonlight Lane (At Grade)

Segment 3 starts just beyond the limits of the proposed portal and launch shaft location, south of the proposed Bridge Station, and traverses northward to Moonlight Lane which marks the northernmost Study Area limit. This segment, located within the City of Richmond Hill, also includes the proposed High Tech Station and proposed TSF. The entirety of Segment 3 is planned to be at grade.

A 3.0 Existing Conditions

A 3.1 Purpose

The purpose of Part A of this report is to provide a description of the existing conditions within the YSNE EPR Addendum Study Area. The existing conditions data has been divided into five (5) categories: natural heritage features, vegetation and vegetation communities, wildlife, fish and fish habitat, and Species at Risk. These categories and the standard methods used to document them are briefly described below. Each of these categories are discussed with respect to the three (3) Study Area segments detailed in **Sections A 3.3** through **A 3.5**.

Throughout this report, scientific names of species are excluded from the text apart from some situations where they are provided for clarity. All species names, common and scientific, are provided in the species lists included in **Appendix B**.

A 3.1.1 Natural Heritage Features

Natural heritage features are natural resources that support key ecological processes, e.g., forests, watercourses, wetlands, and regenerating fields. Natural heritage features include ecosystems delineated by provincial agencies such as Provincially Significant Wetlands (PSWs), ANSIs, Environmentally Significant Areas, and Conservation Authority regulation limits and systems identified in the municipal official plans such as the Greenlands System of York Region.

A 3.1.2 Vegetation and Vegetation Communities

Vegetation communities are classified according to the *Ecological Land Classification for Southern Ontario* (Lee et al. 1998, 2009). Ecological Land Classification (ELC) uses a methodology that was developed through a cooperative pilot project among the ELC program, Credit Valley Conservation, the Natural Heritage Information Centre (NHIC), the Forest Resource Inventory Section of the Ontario Ministry of Natural Resources (MNR) and Jane Bowles (a private consultant). It was developed to meet the current needs of ecosystem management and ecological land-use planning (Lee et al. 1998). To support vegetation community classifications, a detailed list of vegetation species is recorded to assist with further analysis of ecological conditions.

Part A of this report is based on a combination of OneT+ 2021 field investigations data and desktop studies. A plant species list is provided in Appendix B – Table B-1.

A 3.1.3 Wildlife and Wildlife Habitat

Wildlife inventories are typically gathered through the completion of numerous targeted field studies which are based on standardized methodology and guidelines; e.g., anuran call surveys according to the Ontario *Marsh Monitoring Program* (BSC et al. 2008a), breeding bird surveys according to a standardized point count system, bat habitat surveys according to MNRF's (2017) *Recommended Survey Method for SAR Bats within Treed Habitats* (pers. comm. from Aurora District MNDMNRF), and fish community sampling according to MTO's (2020) *Interim Environmental Guide For Fisheries*. Furthermore, these targeted field investigations must be completed during specific times of year (i.e., timing windows) in order to capture data effectively.

Wildlife field investigations have been completed by OneT+ as necessary. Data presented in **Sections A 3.3** through **A 3.5** is derived from a combination of field investigations and secondary sources.

Wildlife habitat was delineated by review of Ecological Land Classification information.

A 3.1.4 Surface Water

The surface water discussed herein is a high-level summary of watercourse and waterbodies within the Study Area. This data is non-exhaustive as it does not capture all drainage features or their crossing locations along the entire length of the Study Area, but instead focuses on those waterbodies that provide direct and indirect fish habitat.

A 3.1.5 Fish and Fish Habitat

Fish and fish habitat conditions for this Project were assessed in accordance with the Ontario Ministry of Transportation's (MTO 2020) *Interim Environmental Guide For Fisheries*. The guide was developed to provide detailed guidance to meet the requirements of the MTO/DFO/MNRF Protocol for Protecting Fish and Fish Habitat on Provincial Transportation Undertakings (Fisheries Protocol). It outlines the steps of the Fisheries Protocol, including the use of best management practices, the requirements of a fisheries assessment and how to submit a request for review to the DFO.

Aquatic field investigations have been completed by OneT+ as necessary, as access and weather conditions allowed. Data presented in **Sections A 3.3** through **A 3.5** is derived from a combination of field investigations and secondary sources.

A 3.1.6 Species at Risk

Desktop resources as identified in **Sections A 3.2.1** and **A 3.2.3** were used, supplemented by field investigations identified in **Section A 3.2.4**, to determine the potential presence of SAR within each SAR Desktop Study Area Segment. It is important to note that a number of the background information search areas are much larger than the Study Area; e.g., NHIC uses a 1 km grid system, and the atlases (i.e., Ontario Breeding Bird Atlas, Ontario Reptile and Amphibian Atlas, Atlas of the Mammals of Ontario, and Ontario Butterfly Atlas) use a 10 km grid system. With respect to wildlife atlas data, Segment 1 is bisected by two (2) 10 km^2 grid squares (illustrated in **Figure A 2-3**, as such, the wildlife data for Segment 1 includes occurrences within 200 km^2, while Segment 2 and Segment 3 include occurrences from the same 100 km^2. For this reason, the probabilities provided in **Sections A 3.3 through A 3.5** and identified in **Figure A 2-3** are based on an assessment of each species' habitat preferences/needs in conjunction with background information collected. The probabilities of occurrence are defined as 'Confirmed', 'High', 'Moderate', 'Low', and 'None' and are based on the following definitions:

- **Confirmed**: Documented record of a SAR within the defined SAR Desktop Study Area and observed during field investigations.
- **High**: Those species recorded in the regional vicinity of the Project (typically within 10 km and recorded in the past 20 years) whose preferred habitat is abundant within the SAR Desktop Study Area. Species with a high probability of occurrence would be expected to breed within or frequently use the habitats available within the SAR Desktop Study Area.
- **Moderate**: Those species recorded in the vicinity of the Project (typically within 10 km and recorded in the past 20 years) whose preferred habitat is limited within the SAR Desktop Study Area. Species with moderate probabilities of occurrence may not occur within the proposed SAR Desktop Study Area frequently, but may intermittently use it for foraging, migration, or movement to other parts of their home-range.
- **Low**: Those species recorded in the vicinity of the proposed Project (typically within 10 km and recorded in the past 20 years) whose preferred habitat does not occur or is extremely limited within the SAR Desktop Study

Area. These species may intermittently move through the SAR Desktop Study Area but are unlikely to become permanent resident and as such, are not discussed further in the report.

- **None**: Those species whose preferred habitat is completely absent from the SAR Desktop Study Area and may only migrate intermittently through. The recorded presence of a specific species must be viewed in conjunction with existing habitat conditions (e.g., watercourses that are now dry or ephemeral cannot be expected to support the same fisheries community that they may have in the past). As such, records/element occurrences do not confirm or necessarily indicate species presence within the SAR Desktop Study Area.

For an all-inclusive summary of SAR probability of occurrence over the geographic extent of the Project refer to Appendix A. Please note that SAR with no known occurrence in the SAR Desktop Study Area have not been assessed further in this report. Additionally, note that mapping showing the location of SAR occurrences has been intentionally excluded from this report as this information is sensitive in nature and not available for public release.

A 3.2 Methodology

This section provides an overview of the methodology followed to collect and document natural environment existing conditions information within the Study Area (acknowledging that many resources include data for the surrounding area (i.e., 1 km x 1 km and 10 km x 10 km atlas grids). The Study Area has been defined as the Project footprint (based on the currently available conceptual design information) plus a 120 m buffer, as recommended by the *Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005* (MNR 2010). Where applicable, data sources have been illustrated in **Figure A 2-3**.

A 3.2.1 Review of Background Information

Background information was reviewed from the following sources:

- Project-specific Reports:
  - *Yonge Subway Extension – Finch Station to Richmond Hill Centre, Transit Project Assessment: Environmental Project Report* (2009 EPR);
  - *Yonge Subway Extension Conceptual Design and Functional Planning Study: Natural Environment Report* (Ecoplans Ltd. 2009); and
  - *Yonge Subway Extension – Finch Station to Richmond Hill Centre, Transit Project Assessment: Train Storage Facility EPR Addendum* (2014 EPR Addendum).
- Adjacent or Overlapping Project Reports:
  - *Natural Heritage Report: Improvements to 16th Avenue (Y.R.73) from Yonge Street (Y.R. 1) to Woodbine Avenue (Y.R. 8) York Region Schedule 'C' Municipal Class Environmental Assessment Study* (LGL 2018); and
  - *Natural Sciences Report. Yonge Street Transitway from Steeles Avenue to 19th Avenue/Gamble Road. Individual Environmental Assessment* (LGL 2005).

A 3.2.2 Data Gap Analysis

A review of available background information (e.g., previously completed studies and/or reports) was undertaken to identify any relevant data gaps. This data gap analysis identified areas where data was non-existent from previous studies, and/or new data needed to be collected, and/or existing available data required review and updates or augmentation.

A key finding of the data gap analysis undertaken was that the vast majority of data available from previously completed studies in the vicinity of the Study Area is greater than five (5) years old. As a result, field investigations were also completed as required. Field data is a primary source of information and will augment the older secondary source data presented within this report. Together, both the field data and data gathered from other desktop resources will inform the subsequent impact assessment phase of the Project.

A 3.2.3 Desktop Data Collection

Data was collected from the following sources and utilized for purposes of documenting existing conditions within the Study Area:

- TRCA data in the vicinity of the Project;
  - Data received from TRCA included: flora and fauna records from TRCA field investigations, ELC data, natural cover, and geology.
- Information related to Redside Dace provided by the Department of Fisheries and Oceans Canada (DFO 2021)
- Open source data from Municipal Official Plans:
  - *The Regional Municipality of York Official Plan* (as amended) (York Region 2019);
  - *Richmond Hill Official Plan* (as amended) (Richmond Hill 2010);
  - *City of Markham Official Plan* (as amended) (City of Markham 2014);
  - *City of Vaughan Official Plan* (as amended) (City of Vaughan 2010);
  - *City of Toronto Official Plan* (as amended) (City of Toronto 2019); and
  - Richmond Hill Centre Secondary Plan (2021).
- Other open source data:
  - Land Information Ontario (LIO), including delineation of PSWs;
  - MNDMNRF NHIC database (MNRF 2019; 1 km x 1 km grid delineated with identifications numbers in **Figure A 3-1 - Figure A 3-7**.
  - MNDMNRF GeoHub LIO (LIO) Aquatic Resource Area (ARA) Database (Ministry of Northern Development, Mines, Natural Resources and Forestry, 2021)
  - TRCA Watershed Fish Community Datasets – Open Data Portal.
  - *Ontario Breeding Birds Atlas* (2001-2005) (BSC et al. 2008b; 10 km x 10 km grid 17PJ25 and 17PJ24);
  - *Ontario Reptile and Amphibian Atlas* (Ontario Nature 2020; 10 km x 10 km grid 17PJ25 and 17PJ24);
  - *Ontario Butterfly Atlas* (TEA 2018; 10 km x 10 km grid 17PJ25 and 17PJ24);
  - *Atlas of the Mammals of Ontario* (Dobbyn 1994);
  - Bat Conservation International Inc. (BCI 2019);
  - Aquatic Species at Risk (SAR) Mapping (DFO 2020);
  - eBird (eBird 2020); and
  - iNaturalist (which includes observations reported on the Ontario Nature *Herps of Ontario* website) (iNaturalist 2020).
- Environmental guides and reference manuals:
  - *Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, Second Edition* (MNR 2010);
  - *Ecological Land Classification for Southern Ontario* (Lee et al. 2009); and

- *Significant Wildlife Habitat Technical Guide* (MNR 2000).

- Other online resources:
  - *Endangered Species Act* (ESA) Online Portal;
  - *Species at Risk Act* (SARA) Public Registry; and
  - Aerial photography/imagery.

Information gathered from these data sources which details the natural heritage features present within the Study Area was mapped in **Figure A 3-1 - Figure A 3-7**.

A 3.2.4 Field Investigations

As described in **Section A 3.2** above, it's important to note that in many cases the specific location of a record is unknown because it is part of a larger data set (e.g., the record belongs to a 1 km x 1 km grid square or a 10 km x 10 km grid square). Consequently, the completion of field investigations was recommended to confirm and supplement desktop research and other available data, as necessary. OneT+ field investigations were carried out, outlined in **Table A 3-1**. During all surveys, OneT+ biologists documented all incidental observations of flora and fauna.

Table A 3-1: Summary of OneT+ 2021 Field Investigations

Survey Type	Date	Time (24 hour)	Weather
Vegetation Inventory and Classification (Ecological Land Classification)	April 15, 2021 August 5, 2021	~9:00 - 17:00 ~9:00 - 17:00	7°C - 8°C, no rain 24°C - 26°C, no rain
Anuran Call Survey	May 13, 2021 June 15, 2021	21:00 - 22:40 20:30 - 21:48	14°C - 11°C, no rain, wind 0-1 23°C - 16°C, no rain, wind 2-4
Reconnaissance for SAR and SAR Habitat	June 15, 2021 July 5, 2021	~18:00 - 20:20 ~19:00 – 21:40	23°C, no rain, wind 2-4 27°C - 24°C, light rain started at 21:40, wind 1-2
Breeding Bird Survey	June 22, 2021 July 6, 2021	5:33 – 7:34 5:33 – 7:58	12°C, no rain, wind 1-3 24°C - 25°C, no rain, wind 0-1
Fish Habitat Assessment	September 18, 2021	~9:00 - 17:00	18°C - 24°C, no rain

Notes

Anuran Call Surveys were not completed during the first window (i.e., 1-15 April) due to lack of site access, and some survey locations were changed for the third window due to site access.

Vegetation Inventory and Classification Surveys completed on April 15, 2021 were conducted from the road right-of-ways and CN corridor.

Point locations for Anuran Call Surveys and Breeding Bird Surveys are shown in Appendix C.

Vegetation Inventory and Classification (Ecological Land Classification)

During vegetation inventory and classification field investigations, ELC delineation was completed and was compared to the TRCA 2017 and 2014 EPR Addendum delineations. The *Ecological Land Classification for Southern Ontario: First Approximation and Its Application* (Lee et al. 1998) was used to assess ELC communities on site. Generally, communities at least 0.5 hectares (ha) in size are mapped following ELC protocols, sometimes smaller communities are mapped if their significance is high or are considered unique (e.g., wetlands or remnant prairie patches). During the vegetation inventory and classification, natural heritage features (e.g., wetlands and significant woodlands) are documented.

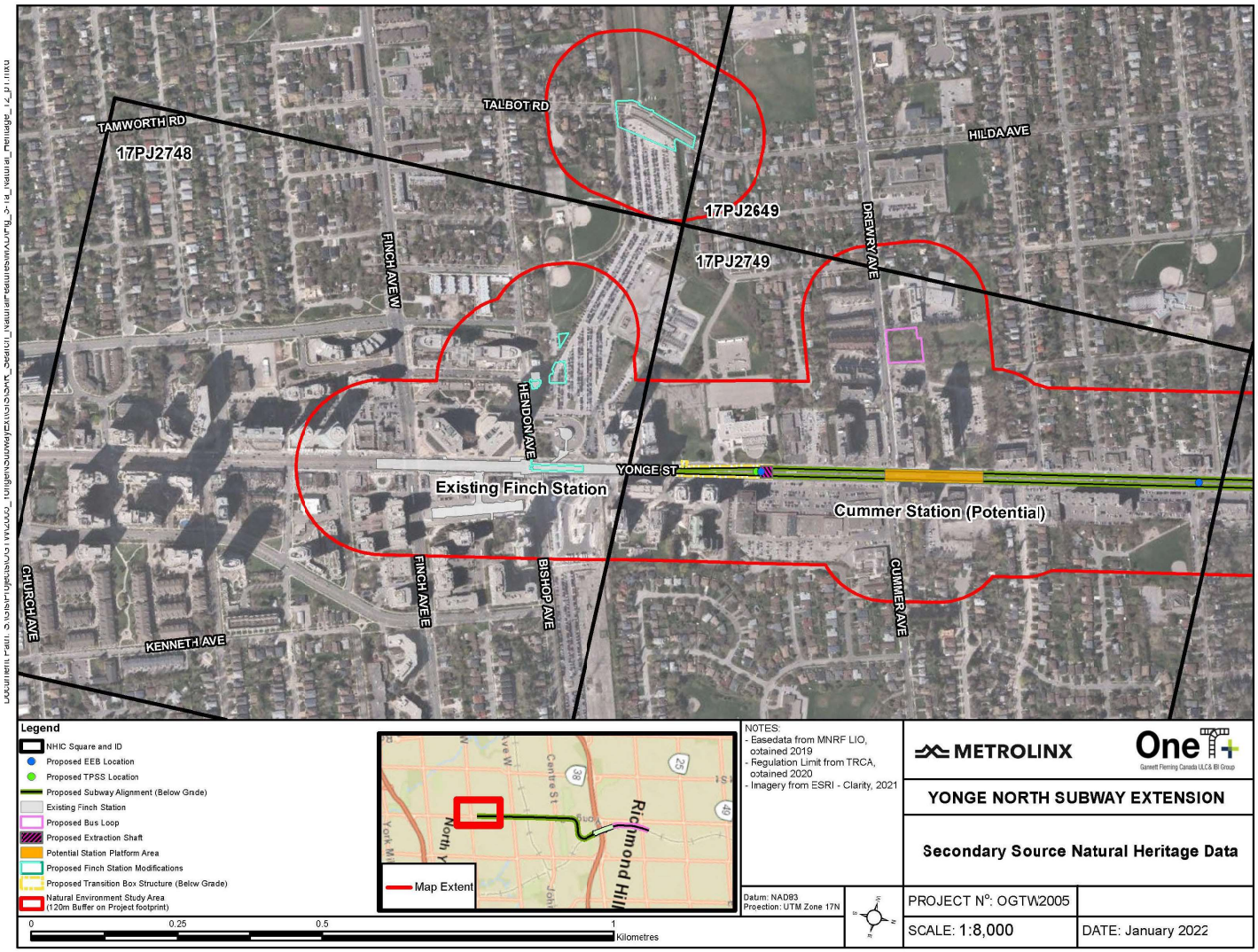


Figure A 3-1: Secondary Source Natural Heritage Data within Segment 1

Figure A 3-2: Secondary Source Natural Heritage Data within Segment 1

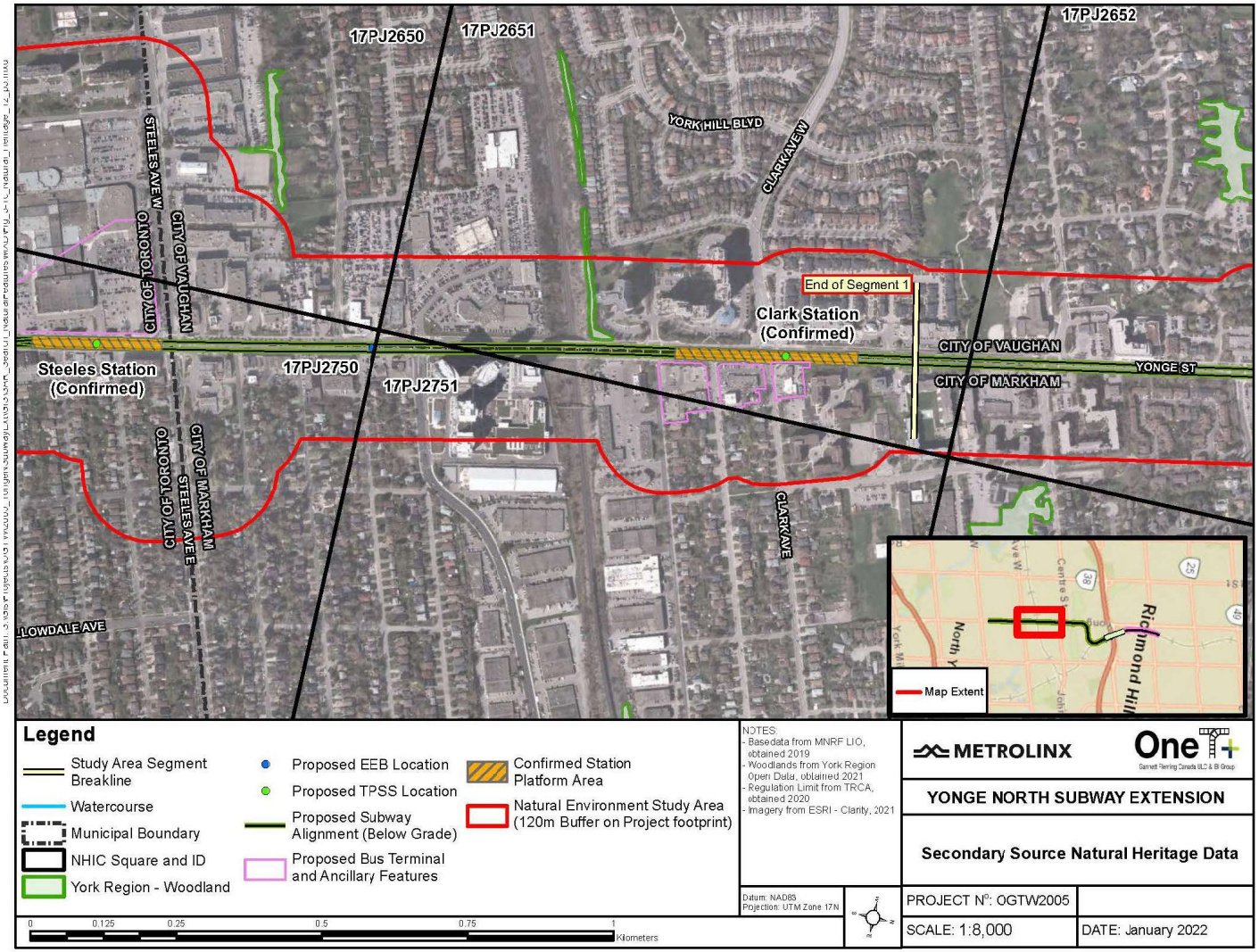


Figure A 3-3: Secondary Source Natural Heritage Data within Segment 1

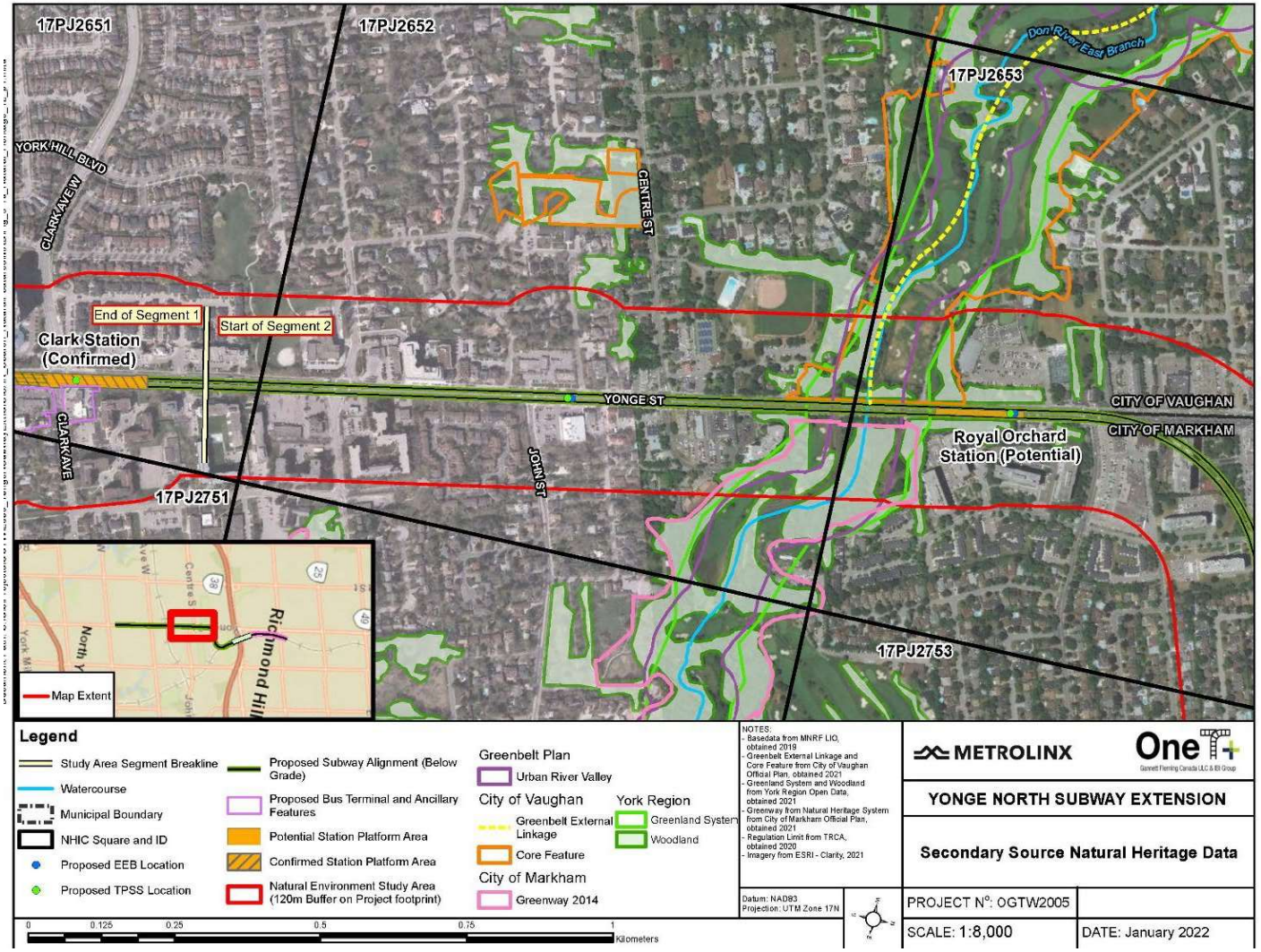


Figure A 3-4: Secondary Source Natural Heritage Data within Segment 2

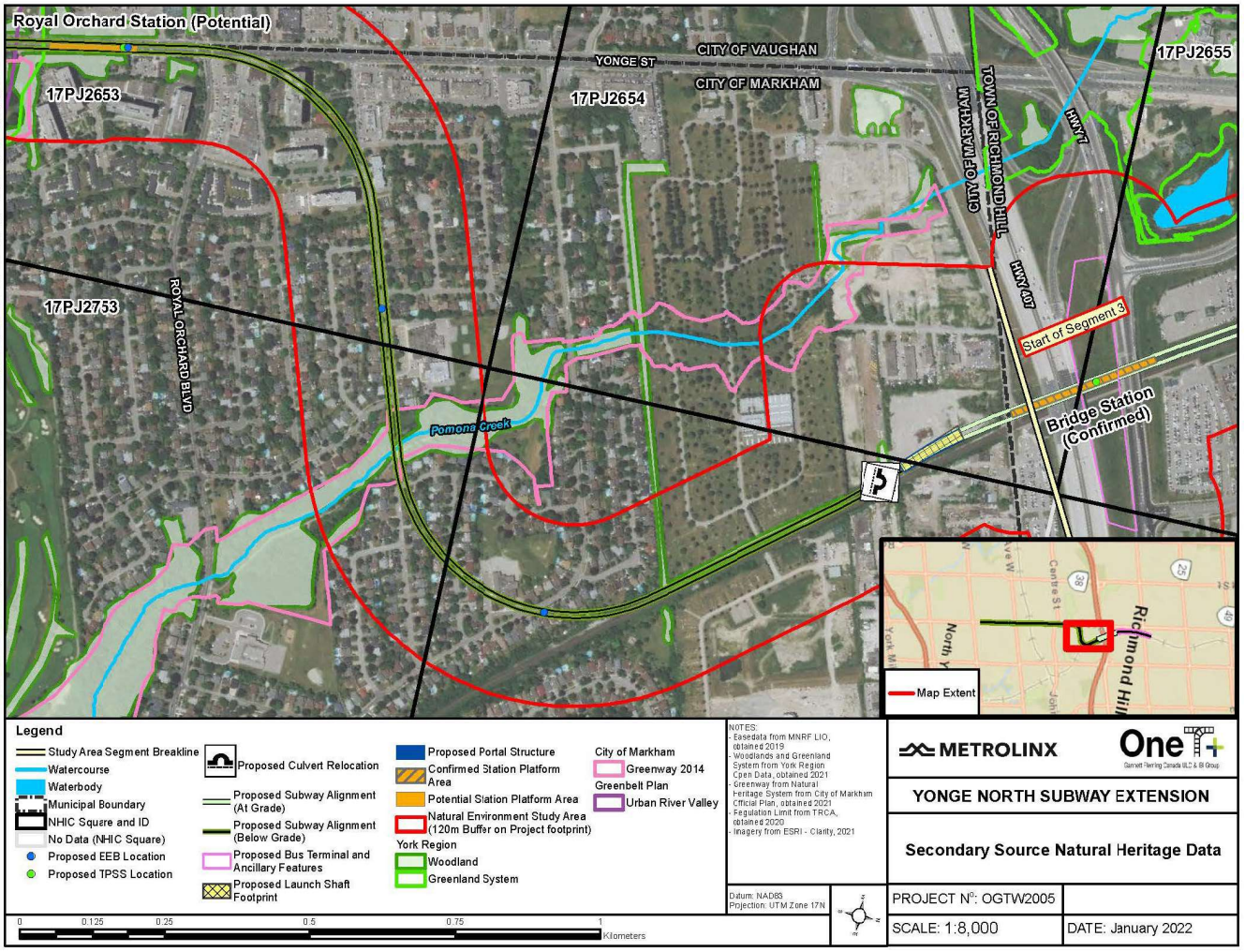


Figure A 3-5: Secondary Source Natural Heritage Data within Segment 2

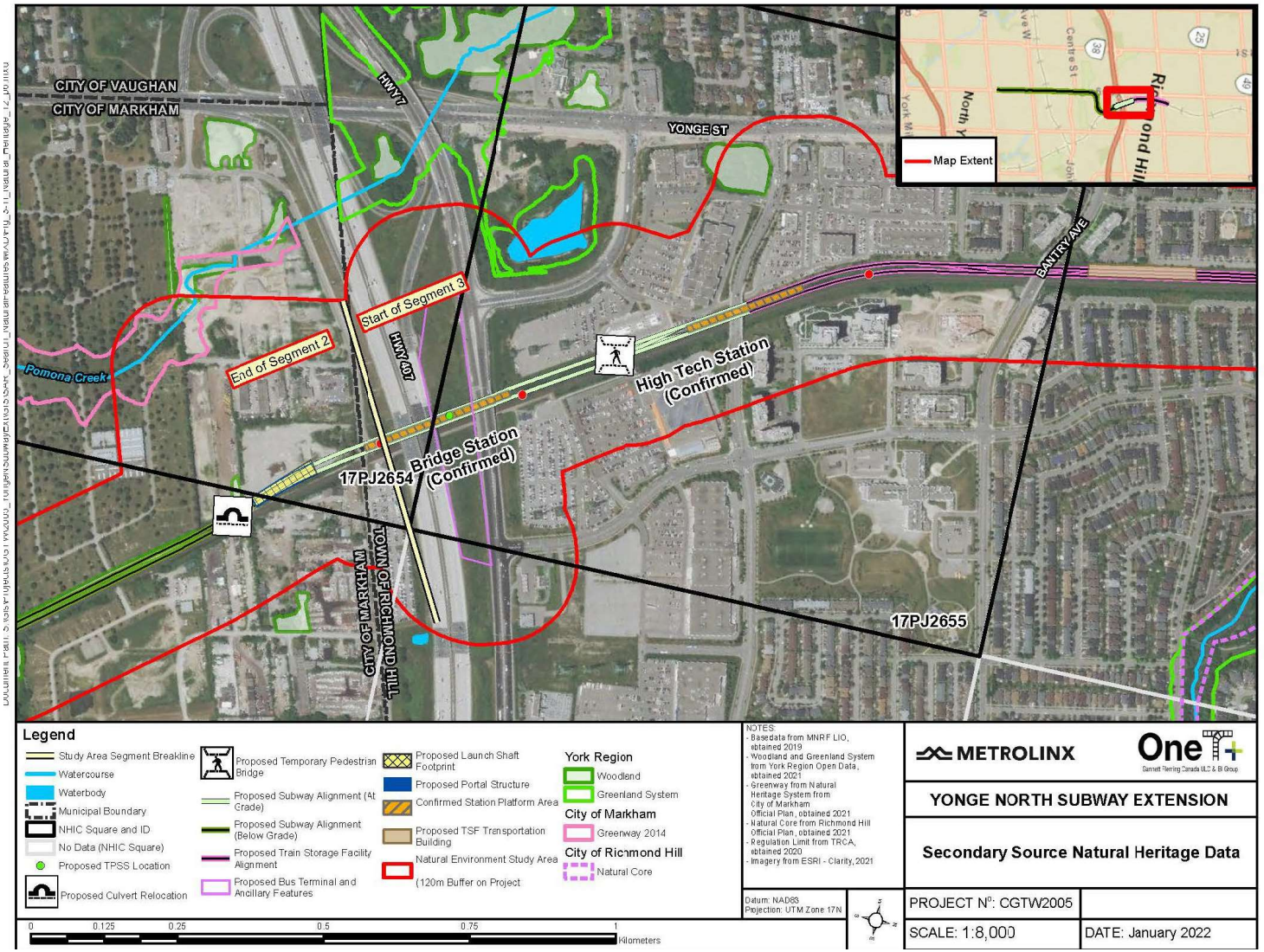


Figure A 3-6: Secondary Source Natural Heritage Data within Segment 3

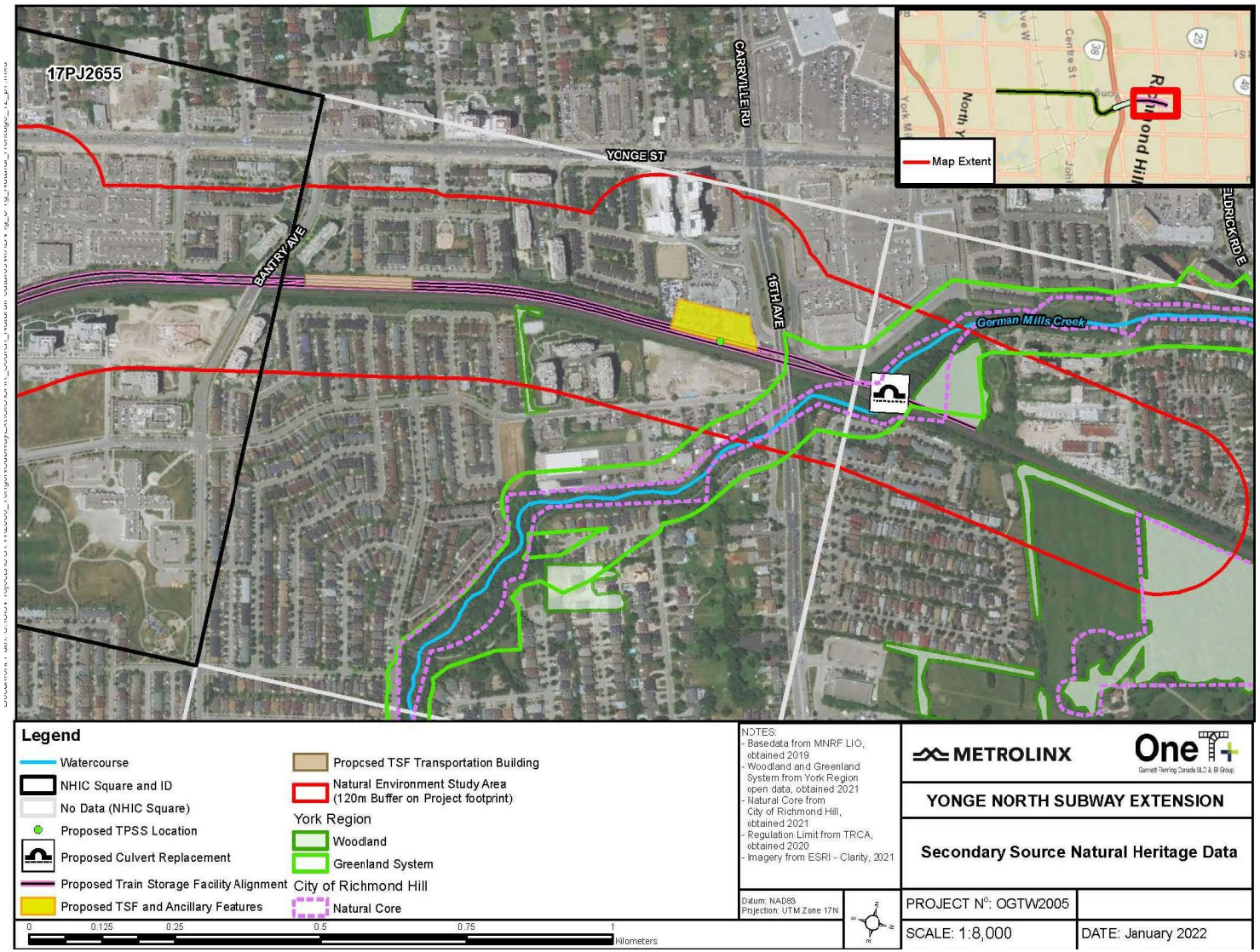


Figure A 3-7: Secondary Source Natural Heritage Data within Segment 3

Anuran Call Survey

The protocol for anuran call surveys, is outlined in Bird Studies Canada et al. (2008a) *Marsh Monitoring Program Participant's Handbook For Surveying Amphibians* which states three surveys should be completed during the following date ranges: April 1-15; May 1-15; and June 1-15 with one survey required during each date range.

For this Project, anuran call surveys were completed as outlined in Table A 3-1, near habitats with potential to support anurans (e.g., areas suspected of containing vernal pools or man-made water structures). Surveys were conducted at nine (9) locations (Appendix C - Figure C1) in accordance with the Bird Studies Canada et al. (2008a) *Marsh Monitoring Program Participant's Handbook For Surveying Amphibians* by biologists skilled in identifying anurans by sound. The anuran call surveys involved the surveyor standing at each station and listening for three (3) minutes for anuran calls. All calling activity is ranked using one of the following three abundance code categories:

- Level 1: indicates that individuals can be counted, and calls are not simultaneous;
- Level 2: indicates that calls are still distinguishable with some simultaneous calling; and
- Level 3: indicates a full chorus where calls are continuous and overlapping.

Reconnaissance for SAR and SAR Habitat

In conjunction with other field investigations, two (2) site visits included targeted surveys for SAR and SAR habitat. Surveys were targeted at Peregrine Falcon, Chimney Swift, and bat SAR. On June 15, 2021, four (4) locations within Project Segment 1 were surveyed for Peregrine Falcon activity. At each location, for a minimum of 20 minutes, the sky and tall buildings were searched (with binoculars when necessary). On July 6, 2021, two (2) locations within Project Segment 1 were surveyed for Chimney Swift. These areas were selected based on the identification of potential Chimney Swift habitat during previous field investigation. As per the Ontario SwiftWatch Protocol (Birds Canada 2020), surveys started 30 minutes before sunset at a safe location in a public area. The protocol suggests that surveys stop 15 minutes after the last Chimney Swift has entered the chimney, or until it becomes too dark to count.

Breeding Bird Survey

Breeding bird surveys were conducted following the Ontario Breeding Bird Atlas Protocol (2001). The protocol requires the observer to record all the birds seen and heard at a point count station during a specified time period (5 minutes for the atlas; 10-minute surveys were completed for this Project). Surveys are to be conducted between dawn and approximately 5 hours after dawn 10 days apart between 24 May and 10 July in good weather. Stations should be approximately 300 m apart, adjusted for habitat (e.g., smaller radii in loud areas or densely forested areas).

Surveys were completed within the breeding bird season, in June and July 2021 (**Table A 3-1)** at eight (8) point count stations (Appendix C - Figure C-2). The surveys documented visual and auditory observations of birds. Visual observations included bird behaviours indicative of nesting activity. Auditory observations (e.g., singing, calling, etc.) were noted for all species as certain behaviours are suggestive of breeding in the area (e.g., agitated behaviour, anxiety calls, mobbing, etc.).

Fish Habitat Assessment

In permanent waterbodies, like those found within the Study Area (i.e., Don River East Branch, Pomona Creek, and German Mills Creek), the standard timing for fish habitat assessments is July/August (summer) as visibility and access are typically ideal and biotic features of the habitat are present. Surveys during low flow periods (e.g., late summer/fall, sometimes winter) are beneficial to assess presence, quality, connectivity, and fish use of refuge habitats that have little

to no base flows or minimal depths seasonally, and to assess presence of barriers that are only present during lower water levels (MTO 2020).

The purpose of the assessment is to capture a detailed description of the habitat attributes and functions and assess habitat characteristics and their potential use by the fish community within the watercourse (MTO 2020). Clear documentation of the characteristics of the fish habitat is required to ensure that the potential impacts of the Project can be comprehensively identified and addressed early in the process to guide design decisions. This information is ultimately required to ensure a defensible determination as to the likelihood of the project causing the death of fish or HADD of fish habitat (MTO 2020).

In cases where fisheries data is unknown, it is the responsibility of the fisheries assessment specialist to develop an appropriate sampling plan to determine species presence and habitat use within the Project area (MTO 2020). As fish community data for all three (3) watercourses less than 10 years old is available (GeoHub 2020), a sampling program was not necessary for this Project.

Fish habitat assessments were completed for this Project on September 18, 2021, according to the protocol described by the MTO's (2020) *Interim Environmental Guide For Fisheries*. To the extent possible, fish habitat was assessed 0 - 50 m upstream and 0 – 200 m downstream of the YNSE alignment crossings.

A 3.3 Segment 1 – Finch Station to Clark Station

Study Area Segment 1 extends from Finch Station to Clark Station (as illustrated in **Figure A 2-2).**

A 3.3.1 Natural Heritage Features

The current physical environment of the Segment 1 is entirely urban, and the Study Area is dominated by residential and commercial buildings. There is one (1) small piece of a polygon designated as York Region Woodland within Segment 1 of the Study Area. The polygon designated as York Region Woodland was incorporated from provincial data. The provincial data lists this polygon as a hedgerow. Hedgerows, by definition, are planted shrubs and trees forming a 'fence'. Typically, in provincial mapping hedgerows are extensions of woodland patches, and similarly in the YROP 2010 hedgerow delineation is described as continuous with woodlands and have a minimum average width of at least 40 m or a length to width ratio of 3 to 1 or less. Vegetation inventory and classification field investigations completed on April 15, 2021 and August 5, 2021 documented existing conditions with respect to vegetation communities and natural heritage features.

The natural heritage data for Segment 1 from secondary sources is mapped in **Figure A 3-1 - Figure A 3-3**.

A 3.3.2 Vegetation and Vegetation Communities

During 2021 OneT+ field investigation and 2003 field investigations as reported by LGL Limited Environmental Research Associates (2005), a total of 100 vegetation species were recorded within Segment 1. A vegetation species list, compiled from multiple sources, is provided in Appendix B – Table B-1. Species are described by their L-rank, a ranking system used by the TRCA to assess the rarity of species found within their jurisdiction. Higher numbers indicate more common species, with L5 being the most common and L1 being the least. L+ species are introduced. The following is a brief summary of the vegetation species recorded:

- The majority of the species (94) recorded were ranked L5 or L+; i.e., secure throughout the region or introduced, respectively, or were not identified to species level.

- Two (2) species, Flat-stemmed Spikerush and Mugo Pine, have not been assigned a L-Rank by TRCA, Greater Toronto Region, or York Region. The spikerush is widespread but local in southern Ontario, meaning that the species is locally abundant, typically in alvars (NHIC database). It is likely not assigned a rank by TRCA as appropriate habitat for the species does not occur in the watershed. While this species can be found along roadsides in certain locations, spikerush species can be difficult to identify, and this record may be a case of misidentification. Mugo Pine was noted as a planted tree during 2021 field investigations. This species is not assigned an L-Rank as it is not known to grow outside of cultivation in the area.
- Two (2) species, Ground Juniper and Tower-mustard were ranked L3; i.e., species of regional conservation concern. Ground Juniper (reported as Juniperus communis) is abundant in the horticulture trade and frequently used as a shrub planting in gardens. As there are no natural heritage features within Segment 1, it is likely this species was not naturally occurring. Tower-mustard is provincially and globally secure and considered widespread in southern Ontario in roadsides and waste places. NHIC reports that this species is quite likely both native and introduced in Ontario.

  Two (2) species, Freeman's Maple and Broad-leaf Cattail are ranked L4; i.e., species of conservation concern within the urban area. Freeman's Maple was observed as a planted species, while Broad-leaf Cattail was observed in small ditch features.

Where available, vegetation communities in Segment 1, documented by OneT+ desktop and field studies are mapped in **Figure A 3-8** to **Figure A 3-10**. Vegetation communities reported by OneT+ in the Study Area Segment 1 include the following:

- Cultural Woodland (CUW) this community is located along Drewry Avenue on the west side of Yonge Street. The CUW is dominated by non-native plant species and has patchy to approximately 60% canopy coverage. Norway Maple, Black Locust, Siberian Elm, and Manitoba Maple dominant the canopy, sub-canopy, and understory. Common Buckthorn is abundant throughout the sub-canopy and understory. Cool season grasses, goldenrods, and Wild Carrot comprise the ground flora and Virginia Creeper is abundant throughout.
- Cultural Plantation (CUP) occurs on the north side of the CN Rail tracks and west side of Yonge Street. The CUP is captured as a York Region Woodland (based on the Provincial Wooded Area Dataset as a hedgerow). The CUP is continuous with Cultural Thicket to the south and therefore was delineated. The CUP is planted ornamental trees (e.g., Colorado Blue Spruce, Norway Maple).
- Cultural Thicket (CUT) occurs along the north and south sides of the CN Rail corridor. This community is comprised of successional species and species which persist in high levels of disturbance.

A 3.3.3 Wildlife and Wildlife Habitat

Terrestrial wildlife species that may be found within Study Area Segment 1 are primarily those that are common to the region and adapted to a disturbed urban environment (e.g., Grey Squirrel, Raccoon, and small rodents). Based on review of available background information, species of special concern that may be found within Segment 1 include Common Nighthawk, Eastern Wood Pewee, Monarch, and Peregrine Falcon.

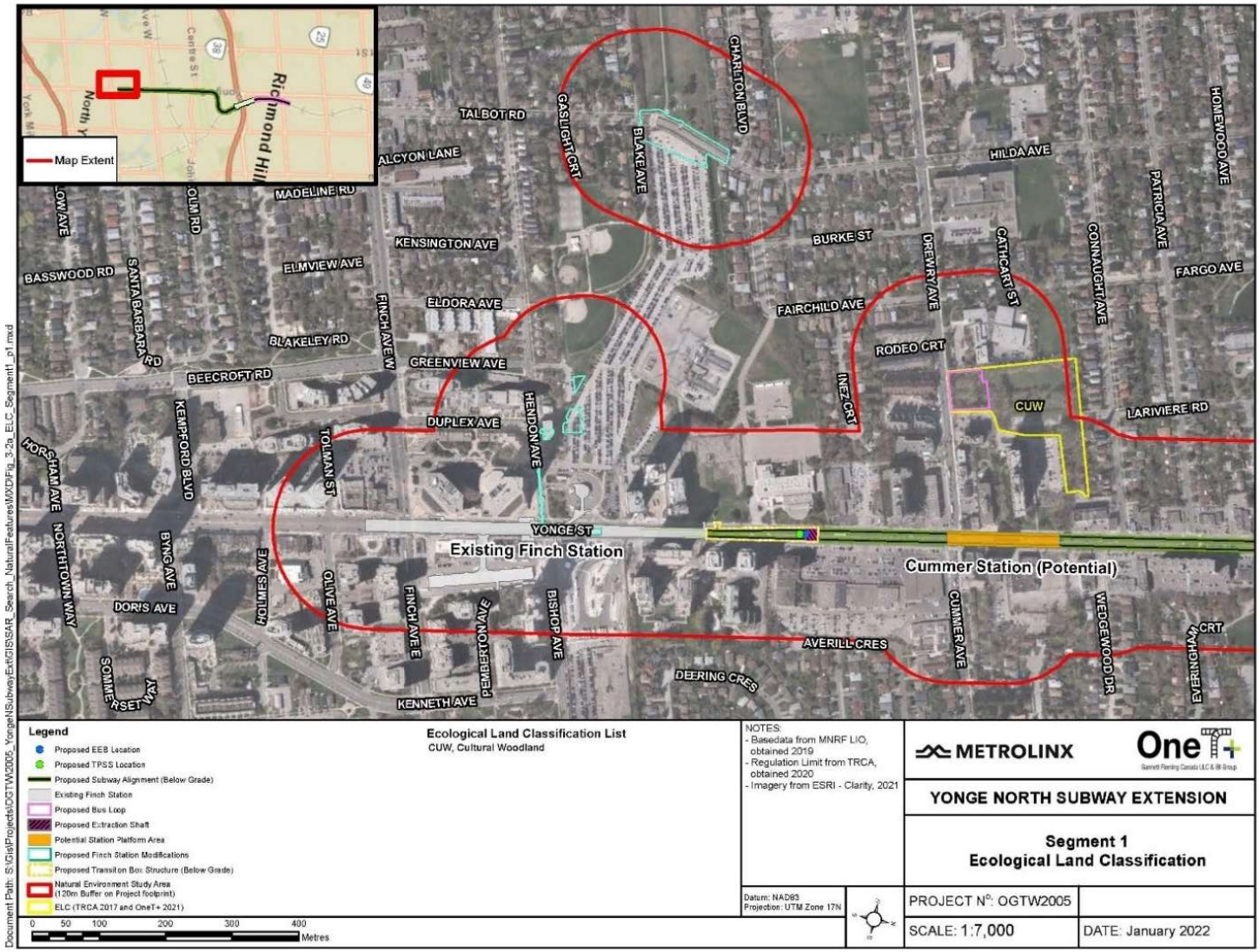


Figure A 3-8: Segment 1 Ecological Land Classification

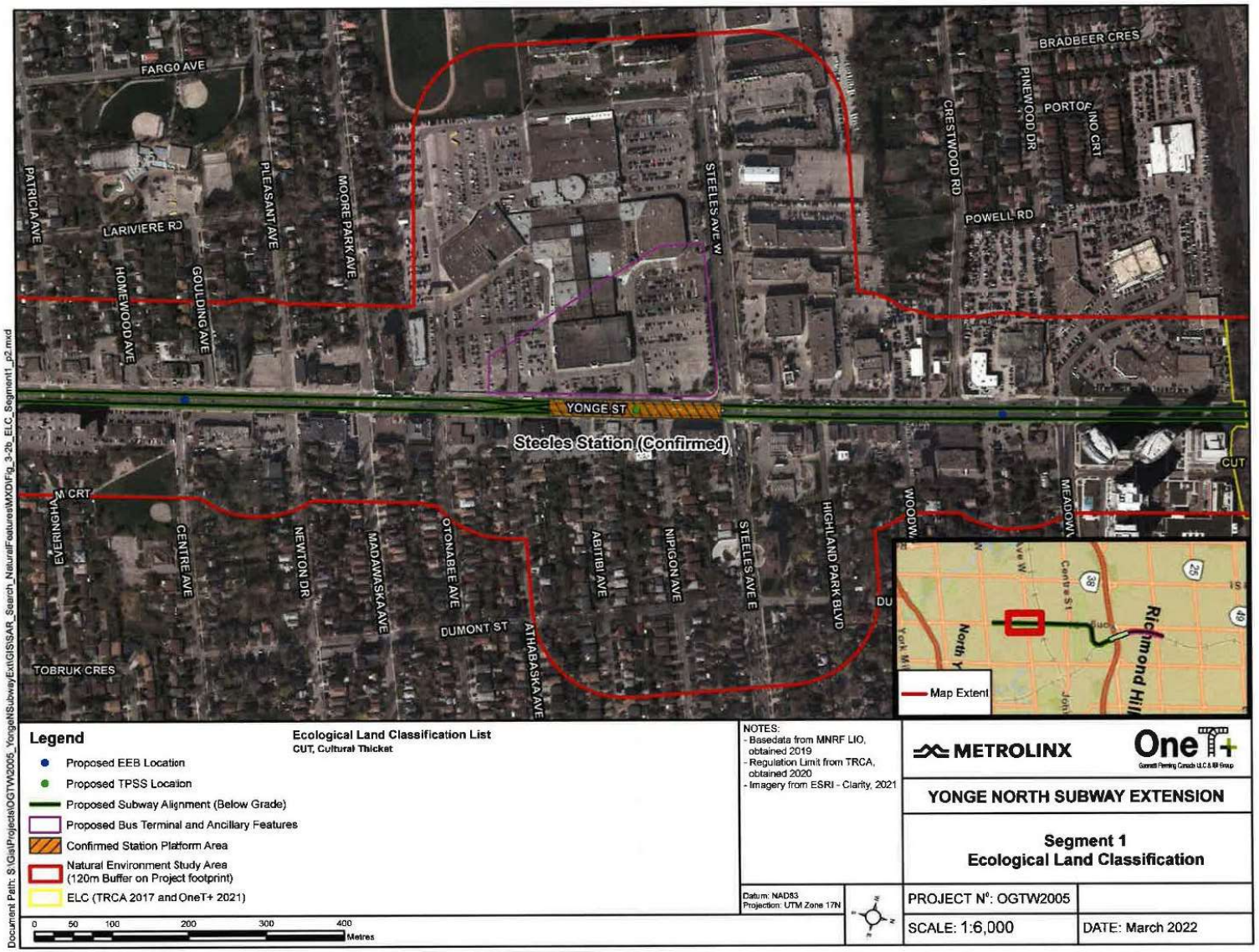


Figure A 3-9: Segment 1 Ecological Land Classification

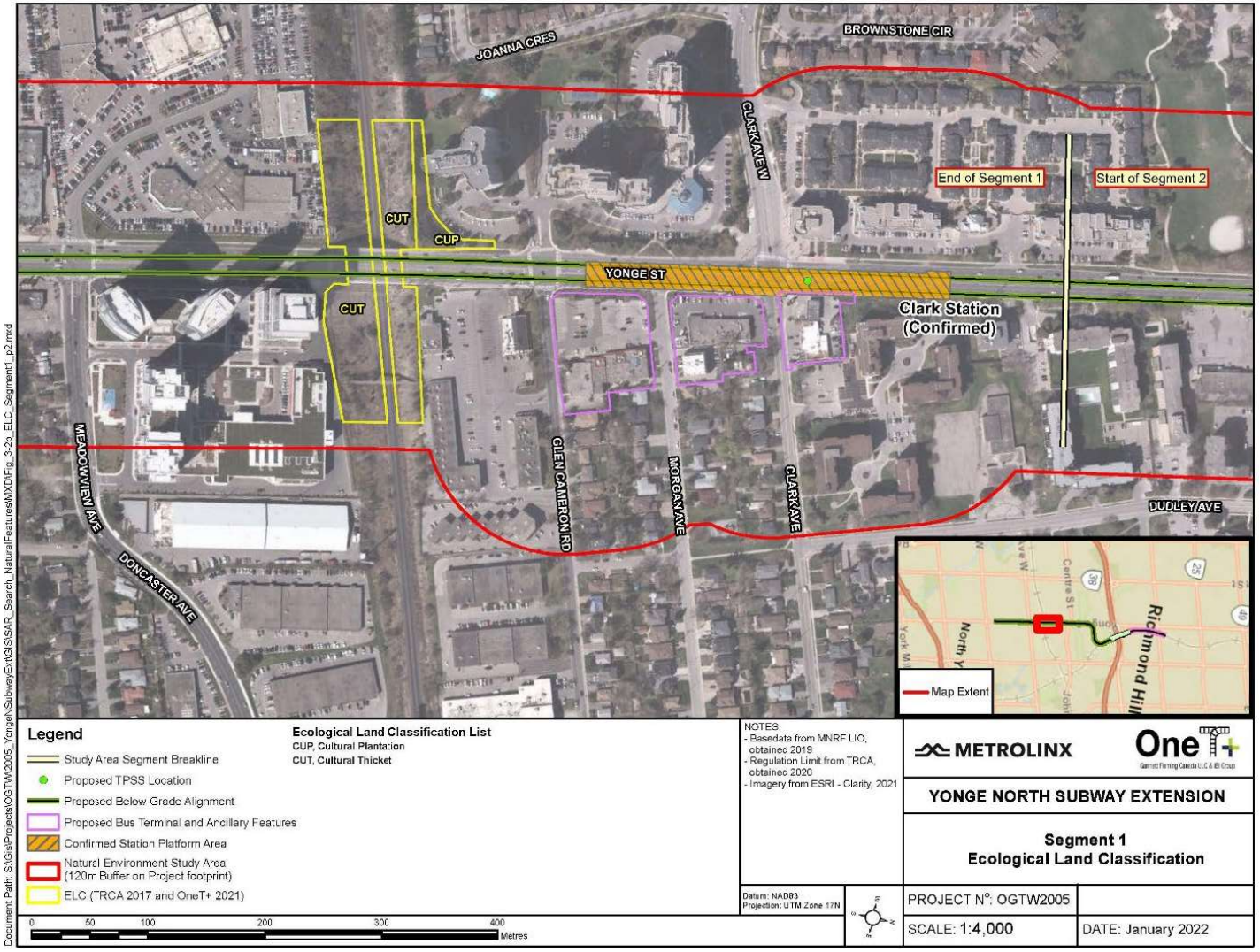


Figure A 3-10: Segment 1 Ecological Land Classification

OneT+ breeding bird surveys completed on June 22, 2021, and July 6, 2021, and incidental observation during other field investigations reported a total of 22 bird species. Most of the species observed (i.e., 16 of 22) were considered secure throughout the region (i.e., L5) or introduced species (i.e., L+). Three (3) species of urban concern (i.e., L4), two (2) species of regional conservation concern (i.e., L3), and one (1) bird SAR (Chimney Swift) were also observed. Chimney Swift was documented flying in and out of a chimney on a commercial building at Yonge Street and Patricia Avenue.

Data provided by TRCA does not include records of wildlife species within Segment 1.

During OneT+ field investigations, incidental wildlife observations of non-bird species were limited to Grey Squirrel.

Species which have been reported during OneT+ 2021 field investigations and in the desktop study resources in the vicinity of this segment and those whose range extends into the Study Area of Segment 1 are compiled in Appendix B – Table B-2 through B-5.

In terms of wildlife habitat only three vegetation communities were delineated within Segment 1; Cultural Woodland, Cultural Plantation, Cultural Thicket. A Cultural Woodland on Drewry Avenue may provide bat habitat as it contains treed area with open area for foraging. A bat was observed flying within the Cultural Woodland community incidentally on July 5, 2021. The Cultural Plantation and Cultural Thicket are less likely to contain bat habitat as they are narrow and very young communities as aerial imagery and TRCA habitat mapping indicates meadow habitat until 2010 (i.e., do not contain larger trees with habitat features).

A 3.3.4 Surface Water

There are no watercourses or waterbodies within Segment 1.

A 3.3.5 Fish and Fish Habitat

There are no watercourses or waterbodies within Study Area Segment 1.

A 3.3.6 Species at Risk

The following seven (7) Threatened/Endangered SAR have been reported within the past 20 years in the vicinity of SAR Desktop Study Area Segment 1, or (in the case of mammal species) their range extends into the SAR Desktop Study Area, and they have been identified as potentially occurring within the SAR Desktop Study Area and its vicinity. The probability of occurrence is indicated in brackets. Bank Swallow, Bobolink and Eastern Meadowlark species have low probability of occurrence due to lack of suitable habitat. Species-specific details (including at risk status, source, preferred habitat) and probability of occurrence are summarized in Appendix A.

- Barn Swallow (high)
- Chimney Swift (confirmed)
- Eastern Small-footed Myotis (moderate)
- Little Brown Myotis (moderate)
- Northern Myotis (moderate)
- Tri-colored Bat (moderate)
- Butternut (moderate)

A 3.4 Segment 2 – Clark Station to Portal/Launch Shaft

Study Area Segment 2 extends from Clark Station to Portal/Launch Shaft (as illustrated in **Figure A 2-2).**

A 3.4.1 Natural Heritage Features

Natural heritage features within Study Area Segment 2 include the following:

- York Region Woodland (derived from provincial mapping) and Greenland System;
- City of Markham Greenway and Woodland (2014 Official Plan natural heritage system);
- City of Vaughan Core Features and Greenbelt Plan External Linkage (i.e., the Don River East Branch);
- TRCA regulated areas;
- Two (2) watercourse crossings (i.e., Don River East Branch and Pomona Creek); and
- Greenbelt designation (i.e., Urban River Valley) associated with the Don River East Branch.

The natural heritage data for Segment 2 from secondary sources is mapped in **Figure A 3-4 and Figure A 3-5**.

A 3.4.2 Vegetation and Vegetation Communities

Data relating to vegetation species gathered the during 2021 OneT+ field investigations, reported in the 2009 EPR, reported by LGL Limited Environmental Research Associates (2005), and data provided by TRCA through correspondence in 2020 was compiled to create a vegetation species list containing 134 species identified in Segment 2 which is provided in Appendix B – Table B-1. With the exception of the data provided by TRCA, the specific location of these species within the segment is not available. Species are described by their L-rank, a ranking system used by the TRCA to assess the rarity of species found within their jurisdiction. Higher numbers indicate more common species, with L5 being the most common and L1 being the least. L+ species are introduced. The following is a brief summary of the vegetation species recorded:

- The majority of the species (121) recorded were ranked L5 or L+; i.e., secure throughout the region or introduced, respectively, or were not identified to species level.
- One (1) species, Ginkgo, is not ranked by TRCA, as it is a horticultural plant not known to grow wild in the area.
- One (1) species, Red Pine, was ranked L1; i.e., species of regional conservation concern, regionally scarce due to either accidental occurrence or extreme sensitivity to human impacts. Red Pine (reported as *Pinus resinosa*) is a common forest tree in central Ontario but rare as a naturally growing tree in the Carolinian Zone. In Toronto, most populations are probably introduced as this tree is commonly planted due to its tolerance of dry rocky or sandy soils.
- One (1) species, White Spruce, was ranked L3; i.e., species of regional conservation concern, generally less sensitive and more abundant than L1 and L2 ranked species. White Spruce (reported as *Picea glauca*) is a widespread and locally dominant forest tree throughout most of the province. It is uncommon in the Carolinian Zone where most populations are probably introduced as it is commonly used in landscaping.
- Ten (10) species are ranked L4, i.e., species of urban conservation concern: Silver Maple, Loose-flowered Sedge, Silky Dogwood, Roundleaf Dogwood, Canada Wild-rye, American Beech, Bur Oak, Northern Red Oak, Pussy Willow and Broad-leaf Cattail. Most of these species were reported in background documents. Bur Oak was observed in the vicinity of the golf course south of Royal Orchard Blvd.

Where available, vegetation communities documented by OneT+ desktop and field studies and TRCA in Segment 2 are mapped in **Figure A 3-11** and **Figure A 3-12**.

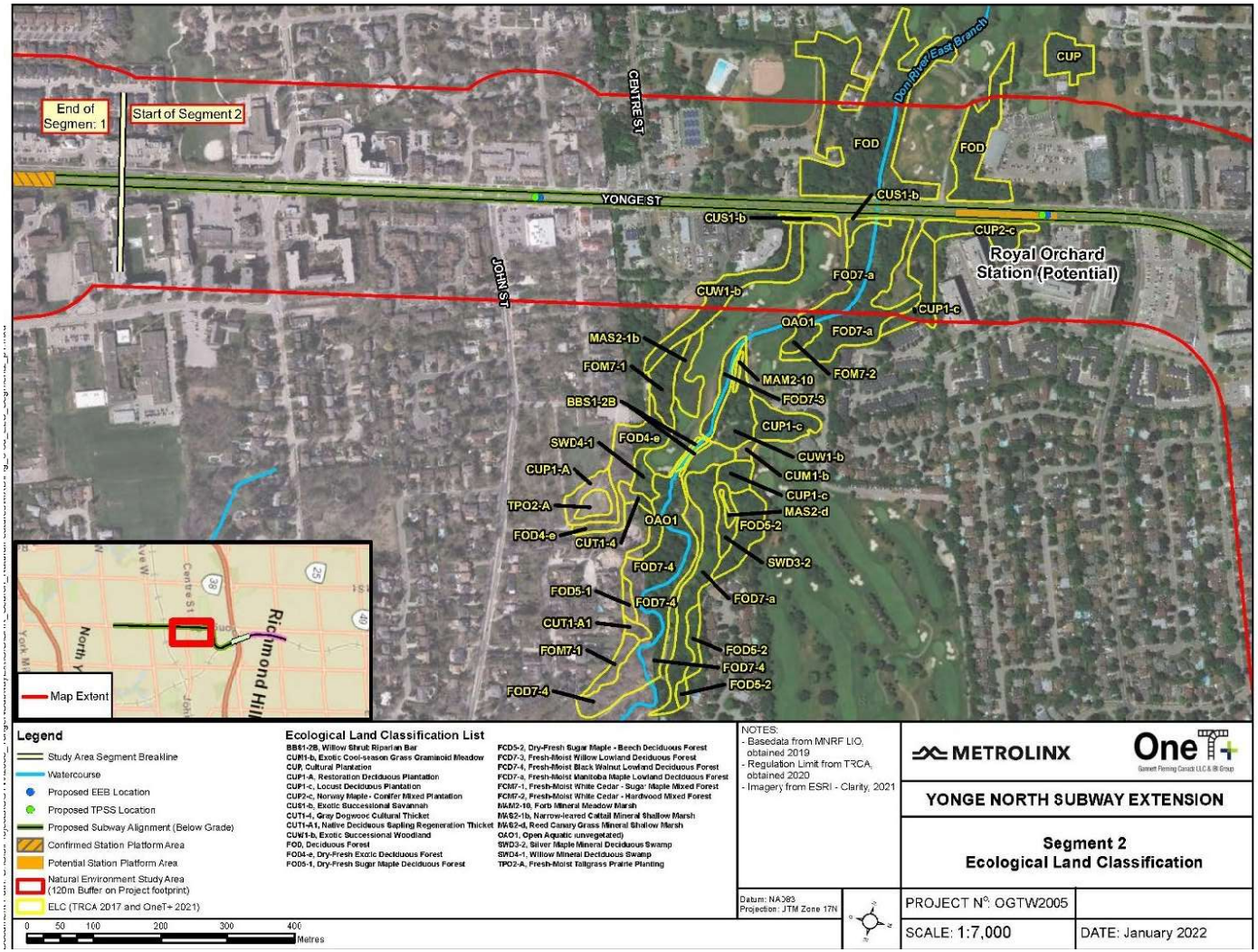


Figure A 3-11: Segment 2 Ecological Land Classification

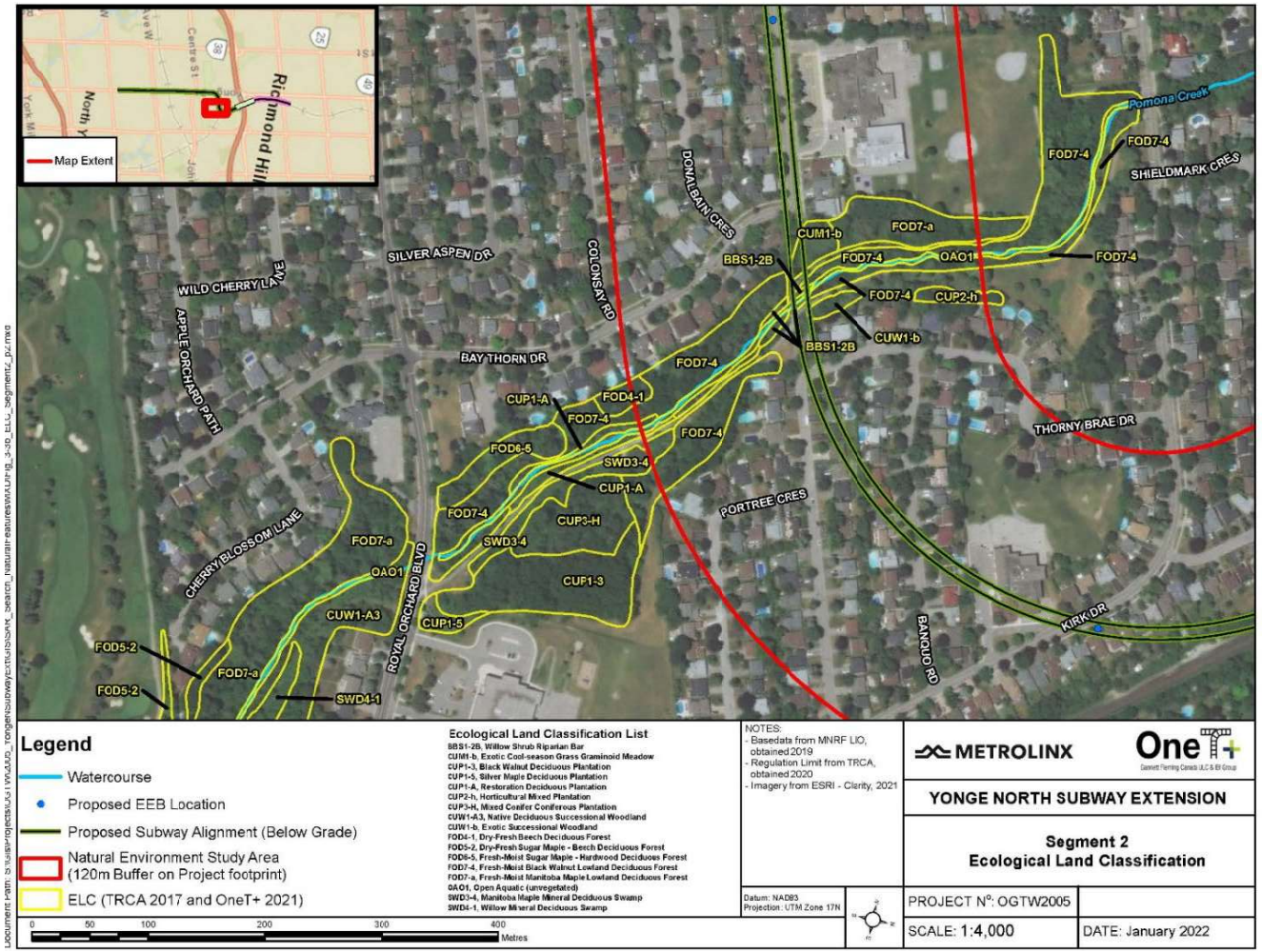


Figure A 3-12: Segment 2 Ecological Land Classification

Vegetation communities in Study Area Segment 2 east of Yonge Street have been delineated by the TRCA and two communities west of Yonge Street within the golf course have been delineated by OneT+. Vegetation communities include the following:

- Willow Shrub Riparian Bar (BBS1-2B), two (2) locations in the golf course less then 0.1 ha in size and four locations around Pomona Creek less than 0.03. Dominated by Sandbar Willow with Manitoba Maple and Red-osier Dogwood in the canopy. European Stinging Nettle and Reed Canary Grass dominate the ground layer.
- Exotic Cool-season Grass Graminoid Meadow (CUM1-b), one (1) location in the golf course and one (1) location around Pomona Creek, both less than 0.1 ha in size. Canopy consists of Staghorn Sumac, planted Gingko, and Black Locust. Cool season grasses and Manitoba Maple seedlings make up the ground story.
- Cultural Plantation (CUP), one (1) location in the golf course less than 0.4 ha in size. The CUP is planted ornamental trees (e.g., Colorado Blue Spruce, Norway Maple).
- Black Walnut Deciduous Plantation (CUP1-3), one (1) location around Pomona Creek approximately 0.8 ha in size. The canopy is Black Walnut and Black Locust. The sub-canopy is White Ash, Black Locust, Alternate-leaved Dogwood, and Black Cherry. The understory is raspberries, Alternate-leaved Dogwood, White Ash, and Chokecherry. The ground layer is Wood Avens and Climbing Nightshade.
- Silver Maple Deciduous Plantation (CUP1-5), one (1) location around Pomona Creek less than 0.1 ha in size. The canopy is Silver Maple and the sub-canopy is Manitoba Maple and Eastern Ninebark. The understory and ground layer are dominated by non-native and invasives.
- Restoration Deciduous Plantation (CUP1-A), one (1) location in the golf course less than 0.4 ha in size and two (2) locations around Pomona Creek less than 0.1 ha in size. The canopy consists of Trembling Aspen, Sugar Maple, White Pine, Black Walnut. Subcanopy species such as Staghorn Sumac, Siberian Crabapple, goldenrod, Showy Fly-honeysuckle, Fragrant Sumac and a ground layer of Garlic Mustard, cool season grasses, aster, Greater Celandine.
- Locust Deciduous Plantation (CUP1-c), three (3) locations in the golf course all less than 0.5 ha in size and one (1) location around Pomona Creek approximately 0.1 ha in size. OneT+ expanded the boundary of one (1) golf course community based on aerial imagery. The canopy is Black Locust, Black Walnut, and sometimes Norway Maple. The Sub-canopy is Norway Maple and Manitoba maple regrowth with Common Buckthorn and Virginia Creeper. The understory is Chokecherry, Alternate-leaved Dogwood, Tartarian Honeysuckle, raspberry species, and goldenrods.
- Norway Maple – Conifer Mixed Plantation (CUP2-c), one (1) location in the golf course less than 0.5 ha in size. Austrian Pine and Norway Maple dominate this community. Canopy regeneration, Little-leaved Liden, and Common Buckthorn dominate the remaining lower layers. Cool season grasses and non-natives can be found in the ground story.
- Horticultural Mixed Plantation (CUP2-h), one (1) location around Pomona Creek less than 0.1 ha in size. The canopy is Red Pine and Austrian Pine. The sub-canopy is Common Buckthorn, Manitoba Maple, White Elm, Norway Maple. The understory is Common Buckthorn and asters and goldenrods. The ground layer is dominated by periwinkle.
- Mixed Conifer Coniferous Plantation (CUP3-H), one (1) location around Pomona Creek less than 0.5 ha in size. The canopy is Red Pine, White Pine, Scots Pine, and Black Cherry. The sub-canopy is Norway Maple, Manitoba

Maple, and Black Cherry. Understory is White Ash, Common Buckthorn, Alternate-leaved Dogwood, Chokecherry. Ground layer is Wood Avens, Climbing Nightshade, White Ash.

- Native Deciduous Successional Savannah (CUS1-A1), one (1) location near Pomona Creek less than 0.4 ha in size. Canopy is Black Walnut and Manitoba Maple. The sub-canopy is Manitoba Maple, Riverbank Grape, Multiflora Rose, and Morrow's Honeysuckle. The understory is asters and goldenrods and the ground layer is cool season grasses.
- Exotic Successional Savannah (CUS1-b), two (2) locations in the golf course less than 0.2 ha in size and one (1) location near Pomona Creek less than 0.3 ha in size. Norway Maple and Black Locust with cool season grasses, non-natives and invasives, raspberry, and goldenrods make up this community.
- Native Deciduous Sapling Regeneration Thicket (CUT-A1), one (1) location in the golf course less than 0.1 ha in size. Golden Weeping Willow, Manitoba Maple in the canopy and Red-osier Dogwood and White Ash with Manitoba Maple and Virginia Creeper in the sub-canopy and understory. Field Horsetail, Spotted Jewelweed, Star-flowered False Solomon's Seal, and significant Eastern White Cedar seedlings in the ground story.
- Native Deciduous Successional Woodland (CUW1-A3), one (1) location is mapped around Pomona Creek approximately 1 ha in size. The canopy is Black Walnut, willows, White Ash, and Scots Pine. The sub-canopy is Manitoba Maple, Riverbank Grape, and Common Buckthorn. The understory is goldenrods, asters, raspberries, and Common Buckthorn. The ground layer is cool season grasses.
- Exotic Successional Woodland (CUW1-b), two (2) locations in the golf course which are approximately 0.5 and 0.7 ha in size. One (1) community occurs around Pomona Creek and is less than 0.1 ha in size. Canopies include Black Walnut, hybrid willows, Manitoba Maple, and Black Locust. Sub-canopies include Manitoba Maple, Norway Maple, Riverbank Grape, Virginia Creeper, Alternate-leaved Dogwood, and Common Buckthorn. Understory species include raspberries, goldenrods, stinging nettle, Japanese Knotweed, and other non-native invasives. The ground layer contains bedstraws, Garlic Mustard, and Enchanter's Nightshade.
- Deciduous Forest (FOD), two (2) location occurs in the golf course and are approximately 1 ha and 2 ha in size. Site access was not provided to OneT+ or TRCA and therefore it is assumed the composition will be similar to other communities on the east side of Yonge Street and likely dominated by non-natives and invasives.
- Dry-Fresh Beech Deciduous Forest (FOD4-1), one (1) location occurs around Pomona Creek and is less than 0.1 ha in size. Canopy is Norway Maple, Beech, Black Cherry, and Basswood. The sub-canopy is Alternate-leaved Dogwood, Norway Maple, Common Buckthorn, Beech. The understory is Chokecherry and Basswood. The ground layer is Canada Avens, Garlic Mustard, Common Buckthorn.
- Dry-Fresh Exotic Deciduous Forest (FOD4-e), one (1) location in the golf course and is approximately than 0.7 ha in size. The canopy is Black Walnut, Norway Maple, and Japanese Walnut. The sub-canopy is Alternate-leaved Dogwood, Riverbank Grape, and Norway Maple. The understory is Alternate-leaved Dogwood and Chokecherry. The ground layer is Large False Solomon's Seal, Enchanter's Nightshade, Thicket Creeper, and Zig-zag Goldenrod.
- Dry-Fresh Sugar Maple Deciduous Forest (FOD5-1), one (1) location in the golf course less than 0.1 ha in size. Two (2) locations around Pomona Creek occur, one (1) is 0.1 ha and the other 0.6 ha in size. The canopy is dominated by Sugar Maple and has some Eastern White Cedar and White Pine. The sub-canopy and understory are Sugar maple and Alternate-leaved Dogwood. The ground layer is Garlic Mustard and Zig-zag Goldenrod.

- Dry-Fresh Sugar Maple- Beech Deciduous Forest (FOD5-2), two (2) locations in the golf course approximately 0.2 ha and less than 0.5 ha in size. Two (2) locations around Pomona Creek occur, both less than 1.5 ha. The canopy contains Sugar Maple, Black Cherry, American Beech, and White Ash snags. The sub-canopy is Eastern Hop-hornbeam, Sugar Maple, American Beech and American Elm. The Understory is Alternate-leaved Dogwood, Chokecherry, and canopy regeneration. The ground layer is Garlic Mustard, Zig-zag Goldenrod, Early Meadow-rue, and Enchanter's Nightshade.
- Gray Dogwood Cultural Thicket Type (CUT1-4), one (1) location in the golf course approximately 0.2 ha in size. The canopy, sub-canopy, and understory is Alternative-leaved Dogwood and Eastern White Cedar. This community has been changed from the Dry-Fresh Sugar Maple-Basswood Deciduous Forest (FOD5-6) as previously indicated in TRCA data.
- Dry-Fresh Sugar Maple-Black Cherry Deciduous Forest (FOD5-7), one (1) location around Pomona Creek that is less than 0.5 ha in size. Sugar Maple and Black Cherry dominate the canopy. The sub-canopy is Sugar Maple, Eastern Hop-hornbeam, and Alternate-leaved Dogwood. The understory is Chokecherry and the ground layer is avens.
- Fresh-Moist Sugar Maple-Beech Deciduous Forest (FOD6-5), two (2) locations around Pomona Creek that are less than 0.3 ha in size. The canopy is Sugar Maple with dead snags, Manitoba Maple, Basswood and hybrid willows. The sub-canopy is Alternate-leaved Dogwood, Eastern Hop-hornbeam, Basswood, Common Buckthorn, Chokecherry, and Sugar Maple. Understory is Alternate-leaved Dogwood, Chokecherry, and Common Buckthorn. The ground layer is Spotted Jewelweed, avens, Sugar Maple seedlings, Garlic Mustard, and other herbaceous non-natives.
- Fresh-Moist Willow Lowland Deciduous Forest (FOD7-3), one (1) location in the golf course and is approximately 1 ha in size. The canopy is hybrid willow and American Elm. Manitoba Maple, Basswood, Norway Maple, Riverbank Grape occur in the sub-canopy. The understory is Manitoba Maple, goldenrods, Common Buckthorn, Alternate-leaved Dogwood. The ground layer is Garlic Mustard and bedstraws.
- Fresh-Moist Black Walnut Lowland Deciduous Forest (FOD7-4), one (1) location in the golf course and is approximately 1.1 ha in size. Four locations occur along Pomona Creek varying between 1.1 ha to 0.04 ha in size. OneT+ removed the TRCA Open Water delineation separating communities in the Golf Course as canopies were continuous. The canopy is Black Walnut, Manitoba Maple, hybrid willows. Sub-canopy species are Manitoba Maple, White Ash, Riverbank Grape, Alternate-leaved Dogwood. Understory species include Stinging Nettle, goldenrods, Dame's Rocket, Fringed Yellow Loosestrife. Ground story species include Ground-ivy, Enchanter's Nightshade, Garlic Mustard, and Orchard Grass.
- Fresh-Moist Manitoba Maple Lowland Deciduous Forest (FOD7-a), two (2) locations in the golf course less than 1.0 ha and 1.1 ha in size. Two (2) locations along Pomona Creek occur one (1) less than 1.5 ha and one (1) less than 0.5 ha. The canopy is Manitoba Maple, Black Walnut, hybrid willows, and Black Locust. The sub-canopy is Manitoba Maple, Riverbank Grape, Common Buckthorn, and Green Ash. Understory is Ground-ivy, Alternate-leaved Dogwood, goldenrods, and European Euonymus.
- Fresh-Moist Hawthorn-Apple Deciduous Forest (FOD7-E), one (1) location along Pomona Creek approximately 0.2 ha in size. The canopy is Common Apple, hawthorns, Manitoba Maple, and dead White Ash. The sub-canopy is Sugar Maple, Manitoba Maple, Common Buckthorn, and Alternate-leaved Dogwood. The understory

is Chokecherry, Alternate-leaved Dogwood, and Common Buckthorn. The ground layer is asters, avens, and Garlic Mustard.

- Dry-Fresh Hardwood-Hemlock Mixed Forest (FOM3-1), one (1) location along Pomona Creek less than 0.2 ha in size. The canopy is Beech, Eastern Hemlock, Black Cherry, and Basswood. The sub-canopy is Sugar Maple, Eastern Hop-hornbeam, Mountain Ash, and American Elm. The understory is Chokecherry, Common Buckthorn, White Ash, and Alternate-leaved Dogwood. The ground layer is goldenrods, sedges and grasses, and Garlic Mustard.
- Fresh-Moist White Cedar-Sugar Maple Mixed Forest (FOM7-1), two (2) locations in the golf course less than 0.5 ha in size. The canopy is Eastern White Cedar, Basswood, White Pine, Norway Maple, Eastern Hemlock, Sugar Maple. The sub-canopy is Sugar Maple, Norway Maple, Alternate-leaved Dogwood, Manitoba Maple, Little-leaved Liden, and Riverbank Grape. The understory is Chokecherry, raspberries, Alternate-leaved Dogwood, and currents. The ground layer is Enchanter's nightshade, Zig-zag Goldenrod, Garlic Mustard, and Calico Aster.
- Fresh-Moist White Cedar-Hardwood Mixed Forest (FOM7-2), one (1) location in the golf course less than 0.1 ha in size. Eastern White Cedar dominates the canopy with American Elm and hybrid willows. The sub-canopy is Norway Maple, Alternate-leaved Dogwood, and Glenleven Linden. The understory is Alternate-leaved Dogwood, currents, and Chokecherry. The ground layer is Enchanter's Nightshade, Garlic Mustard, Alternate-leaved Dogwood, and Zig-zag Goldenrod.
- Forb Mineral Meadow Marsh (MAM2-10), one (1) location in the golf course less than 0.03 ha in size. Two (2) locations occur around Pomona Creek both less than 0.04 ha in size. White Panicled Aster, Canada Thistle, Dark-green Bulrush, and Cottony Willow. The ground layer is sedges, Spotted Jewelweed, Devil's Beggarticks, and Dudley's Rush.
- Narrow-leaved Cattail Mineral Shallow Marsh (MAS2-1b), one (1) location in the golf course approximately 0.3 ha in size. Two (2) locations along Pomona Creek both less than 0.2 ha in size. Hybrid cattail dominates the community. Reed Canary Grass, willow species, Red-tinged Bulrush, Purple Loosestrife, Stinging Nettle, Spotted Jewelweed, European Water-horehound, Marsh Bedstraw, and Turion Duckweed also occur throughout.
- Reed Canary Grass Mineral Shallow Marsh (MAS2-d), one (1) location in the golf course approximately 0.03 ha in size. Reed Canary Grass dominates the community entirely.
- Open Aquatic, unvegetated (OAO1) was used by TRCA to delineate the watercourses. These delineations have remained where canopies are not closed. They are unvegetated communities.
- Silver Maple Mineral Deciduous Swamp (SWD3-2), one (1) location in the golf course approximately 0.2 ha in size. The canopy is Silver Maple, White Willow, Manitoba Maple, and American Elm. The sub-canopy is Manitoba Maple, White Willow, hybrid willow, and Red-Osier Dogwood. The understory is Bittersweet Nightshade and Reed Canary Grass. The ground layer is Reflexed Sedge and European Water-horehound.
- Manitoba Maple Mineral Deciduous Swamp (SWD3-4), one (1) location along Pomona Creek less than 0.3 ha in size. The canopy is Manitoba Maple and hybrid willows. The sub-canopy is Silky Dogwood, Red-osier Dogwood, and Green Ash. The understory is asters and goldenrods and Purple Loosestrife. Ground layer is comprised of Creeping Bentgrass, Reed Canary Grass, and Fox Sedge.

- Willow Mineral Deciduous Swamp (SWD4-1), one (1) location in the golf course approximately 0.2 ha in size and one (1) location along Pomona Creek 0.4 ha in size. The canopy is White Willow, American Elm, Manitoba Maple. The sub-canopy is Green Ash, Manitoba Maple, Silver Maple. The understory is dominated by Narrow-leaved Cattail and Spotted Joe Pye Weed, goldenrods, and Red-osier Dogwood also occur. The ground layer is Spotted Jewelweed and Lesser Clearweed. and
- Fresh-Moist Tallgrass Prairie Planting (TPO2-A), one (1) location in the golf course less than 0.2 ha in size. The canopy is American Elm and Red Maple. Grasses, Culver's Root, Black-eyed Susan, and asters.

A 3.4.3 Wildlife and Wildlife Habitat

The TRCA provided data for terrestrial wildlife species that were observed within and near the Study Area for Segment 2. Generally, most wildlife data are available from atlases which cover a relatively large and diverse area (i.e., within one (1) of the 10 km x 10 km grid squares) or range mapping. Otherwise, terrestrial wildlife species that may be found are primarily those that are common to the region and adapted to a disturbed urban environment. Based on review of available background information, species of special concern that may be found within Segment 2 include Common Nighthawk, Eastern Wood-Pewee, Monarch, Peregrine Falcon, Wood Thrush, Northern Map Turtle, and Snapping Turtle.

OneT+ anuran call surveys completed on May 13, 2021, and June 15, 2021, reported no anurans.

OneT+ breeding bird surveys completed on June 22, 2021, and July 6, 2021, and incidental observations during other field investigations reported a total of six (6) bird species. With the exception of one (1) species of urban concern (i.e., L4) - Gray Catbird, all species observed were considered secure throughout the region (i.e., L5) or introduced species (i.e., L+).

The TRCA data also documents ten (10) L5 species and one (1) L+ species. Four (4) L4 species Gray Catbird, Red-breasted Nuthatch, Red-eyed Vireo, Green Frog were documented in Segment 2. These species breed throughout Ontario but could show declines if urban impacts are not mitigated.

During OneT+ field investigations, incidental wildlife observations of non-bird species included Grey Squirrel and two (2) bats (species unknown).

Species which have been reported during OneT+ 2021 field investigations and in desktop resources in the vicinity of this segment and those whose range extends into the Study Area of Segment 2 are compiled in Appendix B – Table B-2 through B-5.

In terms of Wildlife Habitat, the remnant features within the golf course do provide limited habitat. While the communities are not large enough to necessarily provide Significant Wildlife Habitat, the limited habitat coverage in the vicinity may lend to local significance. The continuous treed areas along the Don River East Branch and Pomona Creek may provide bat habitat as two (2) bats were observed in the Segment.

A 3.4.4 Surface Water

Don River East Branch

This watercourse crosses Yonge Street approximately 380 m south of Royal Orchard Blvd. A tributary of the Don River East Branch flows underground (enclosed in a pipe) within the vicinity of Yonge Street. This tributary crosses Yonge Street south of John Street and eventually outlets to the Main Branch of the Don River East Branch, at Steeles Avenue.

Pomona Creek

This watercourse crosses Yonge Street just north of Highway 7. It flows through a culvert underneath Highway 7, at surface through the northwest Highway 7 / 407 ETR interchange loop and underneath the existing 407 ETR and Langstaff Road through another culvert. A secondary tributary/drainage feature of Pomona Creek also lies within this segment. This watercourse is within the vicinity of the large Stormwater Management Pond and hydro corridor north of Highway 7 and east of Yonge Street.

A 3.4.5 Fish and Fish Habitat

Within Study Area Segment 2, fish habitat is present within the Don River East Branch and Pomona Creek. Both watercourses cross the Study Area (**Figure A 2-2**). A fish species list for the watershed, compiled from multiple sources, is provided in Appendix B – Table B-6.

Don River East Branch

The Don River East Branch supports a variety of warmwater and coldwater baitfish and sportfish species. Coldwater species that have been reported within the Don River East Branch include Mottled Sculpin, Brown Trout, and Rainbow Trout. The majority of the trout species sampled were found upstream, near the 407 ETR and Bathurst Street (greater than 2.5 km upstream of the crossing of Don River East Branch and the proposed Project alignment). However, in 2005, Rainbow Trout was sampled immediately upstream of Yonge Street. Redside Dace records also exist for the Don River East branch, with records from 2005 noted in the EPR (2009) indicating that Redside Dace have been collected at three stations within the Don River East Branch, all of which are located north of Highway 407 and are 4.3-6 km upstream of Yonge Street where the Project crosses under East Don River. Older records indicate Redside Dace was collected in the main East Don River in 1995 at a station located approximately 2.3 km upstream of Yonge Street. Downstream of Yonge Street, records do exist but date back to 1985 and 1949, at two stations located approximately 2.55 km downstream and 1.42 km downstream of Yonge Street respectively. In addition, as reported in the 2009 EPR the following species have been captured within the Don River East Branch within the past 20 years:

- Blacknose Dace
- Bluntnose Minnow
- Brook Stickleback
- Brown Trout
- Creek Chub
- Darter sp.
- Fathead Minnow
- Johnny Darter
- Longnose Dace
- Mottled Sculpin
- Pumpkinseed
- Rainbow Trout
- Redside Dace
- White Sucker

Within Study Area Segment 2, the Don River East Branch flows west to east under Yonge Street. Within the assessed upstream reach, the Don River East Branch is representative of a naturalized system with a morphology that primarily consists of runs with flat sections. At the time of field reconnaissance, the mean wetted width was approximately 10 m, and the mean wetted depth approximately > 1 m. Substrates were mainly comprised of cobble, gravel, sand and silt in order of dominance, with a light brown water colour. Banks were slightly unstable and densely vegetated by trees and herbaceous species on the south bank and trees, herbaceous species and armour stone on the north bank. Riparian cover was low (5% cover) which consisted of primarily herbaceous vegetation and overhanging trees. Instream cover (5% total cover) was provided by submergent species (100%). Surrounding lands were observed to be forested and manicured areas with a large concrete storm sewer present on the upstream left bank.

Within the large arched culvert, the mean wetted width was approximately 13 m and the mean wetted depth approximately 0.4 m. Substrates were comprised of cobble, gravel, sand, and silt in order of dominance with the morphology consisting of flats.

The 200 m downstream section consisted of riffle and run sections, which at the time of field reconnaissance, the mean wetted width was approximately 6 m and the mean wetted depth approximately 0.2 m. Substrates consisted of cobble, gravel and sand and ranged in dominance within the different morphological sections. Banks were slightly unstable with signs of erosion in areas. Riparian cover was moderate (60% cover) which consisted of overhanging trees and herbaceous vegetation. Instream cover (40% total cover) was provided by cobble. Surrounding lands were observed to be forested areas.

No barriers to fish passage were identified within the investigated reach. Primary fish collection was not undertaken as secondary source records included fish community data that occurred within the last 10 years. Several fish species were observed during the field investigations including *Leuciscidae*, *Salmonidae* and White Sucker. The known fish community assemblage (see Appendix B – Table B-6) for this system is comprised of mixed warm, cool and coldwater species. The assessed reach provides habitat for migration, spawning, feeding and rearing and is generally non-limiting throughout (i.e., no sensitive, important or exceptional habitat was observed). Due to historic records of Redside Dace in the Don River East Branch, habitat conditions at this location were assessed for suitability for Redside Dace, with the requirements not being present within the 250 m assessed section due to a lack of headwater features, clear water and pool habitat. No habitat classified as critical by the *Species at Risk Act* (SARA) was identified.

Pomona Creek

Although Pomona Creek is classified as coldwater, TRCA fisheries records (1949 database) for stations located approximately 780 m downstream of Langstaff Road (the closest station to Project limits), captured only warmwater fish species. Data collected in 1984 is available for a fish station located closer to the Don River East Branch mouth, approximately 2.44 km downstream of Langstaff Road. These records are considered historic and cannot be relied upon as an accurate representation of the current fish community within the Study Area. A review of MNDMNRF's LIO GeoHub Aquatic Resource Area (ARA) line segment database for Pomona Creek provided more recent records (2019) including Blacknose Dace, Blacknose Shiner, Creek Chub, Northern Redbelly Dace, and White Sucker with ARA Survey Point data (1986) identifying Blacknose Dace and Creek Chub approximately 1 km downstream of the Study Area.

Within the assessed upstream reach Pomona Creek flows north to south through the Study Area Segment 2 and is representative of a naturalized system with anthropogenically modified sections in the vicinity of the pedestrian bridge structure. The morphology consisted of flat, riffle and run sections with the water clear. At the time of field reconnaissance, the mean wetted width was approximately 2.6 m and the mean wetted depth approximately 0.2 m. Substrates were comprised of gravel, cobble, sand, boulder, and silt in order of dominance. Banks were unstable with heavy erosion along the upstream left bank. Riparian cover was moderate (45% cover) which consisted of primarily herbaceous vegetation and overhanging trees. Instream cover (5% total cover) was provided by boulders (100%). Surrounding lands were observed to be forested and manicured areas with a pedestrian trail running parallel to the Creek.

Within the 200 m downstream section, similar anthropogenic modifications were observed in the way of armour stone placed along the right bank, and gabion baskets along the left bank. This reach consisted of flats, riffle, run, and pool sections, with the mean wetted width approximately 3.25 m and the mean wetted depth approximately 0.2 m.

Substrates consisted of gravel cobble, sand, and clay. Banks were slightly unstable and with signs of erosion in areas. Riparian cover was moderate (75% cover) which consisted of overhanging trees and herbaceous vegetation. Instream cover (60% total cover) was provided by cobble, boulders, undercut banks and woody debris. Surrounding lands were observed to be forested areas with a pedestrian trail running parallel to the Creek.

No barriers to fish passage were identified within the investigated upstream reach; however, low flow impediments were observed within the downstream section. Primary fish collection was not undertaken as secondary source records included fish community data that occurred within the last 10 years with several *Leuciscidae* observed during the field investigations. The known fish community assemblage (see Appendix B – Table B-6) for this system is comprised of mixed warm and cool species. The assessed reach provides habitat for migration, spawning, feeding and rearing and is generally non-limiting throughout (i.e., no sensitive, important or exceptional habitat was observed). No habitat classified as critical by the *Species at Risk Act* (SARA) was identified.

A 3.4.6 Species at Risk

The following six (6) Threatened/Endangered SAR have been reported within the past 20 years in the vicinity of SAR Desktop Study Area Segment 2, or (in the case of mammal species) their range extends into the SAR Desktop Study Area, and they have been identified as potentially occurring within the SAR Desktop Study Area and its vicinity. The probability of occurrence is indicated in brackets. Bank Swallow, Bobolink, Eastern Meadowlark, Redside Dace and Butternut species have low probability of occurrence due to lack of suitable habitat. Species-specific details (including at risk status, source, preferred habitat) and probability of occurrence conclusions are summarized in Appendix A.

- Barn Swallow (confirmed)
- Chimney Swift (high)
- Eastern Small-footed Myotis (moderate)
- Little Brown Myotis (moderate)
- Northern Myotis (moderate)
- Tri-colored Bat (moderate)

During OneT+ SAR reconnaissance investigations two (2) bats (species unknown) were observed at Thornhill Park.

A 3.5 Segment 3 – Portal/Launch Shaft to Moonlight Lane

Study Area Segment 3 extends from Portal/Launch Shaft to Moonlight Lane (as illustrated in **Figure A 2-2**). In the area of the proposed TSF site-specific field surveys, completed by MMM Group in 2013, were limited to vegetation discernible when viewed from the edge of the rail ROW. Records included incidental wildlife and wildlife signs seen during the vegetation surveys. The Study Area for the 2014 EPR Addendum was a 50 to 100 m wide corridor between High Tech Road and the northern extent of Coburg Crescent. Specific to the area adjacent to the proposed TSF, vegetation surveys were carried out on May 21-22, 2013. The proposed TSF contains natural habitat within the rail corridor and the Study Area is extended to the southeast, outside the rail corridor, where there is open space between Bantry Avenue and High Tech Road.

The data collected within the rail corridor is over eight (8) years old. As such, woody vegetation has started to succeed within the meadow communities where ongoing tree removal and maintenance doesn't occur. Communities along the rail corridor are now cultural thickets.

A 3.5.1 Natural Heritage Features

Natural heritage features within Natural Environment Study Area Segment 3 include the following:

- York Region Woodland (derived from provincial mapping) and Greenland System;
- Richmond Hill Greenway System and Natural Core (as part of the NHS);
- TRCA regulated area; and
- One (1) watercourse crossing (i.e., German Mills Creek).

The natural heritage data for Segment 3 from secondary sources is mapped in **Figure A 3-6 - Figure A 3-7.** The forested area on the east side of the railway corridor at the extreme northern end of the Study Area is the largest in the entire study (including contiguous portions outside the Study Area) and has been assessed for significance in **Table A 3-2**. The size of the woodland is significant, including the presence of a small area of interior habitat, and may provide some water protection function as well as economic and social value. However, the woodlot does not provide other significant ecological functions due to its isolation and low native plant diversity.

Table A 3-2: Woodland Significance Assessment

Significance Criteria	Assessment of Significance
Woodland Size	The woodland has an area of approximately 12 ha. As Richmond Hill has an overall forest cover of approximately 13%, the size of this woodland is significant.
Woodland Interior	About 0.2 ha of interior habitat (i.e., areas more than 100 m from an edge) is present. As Richmond Hill has an overall forest cover of approximately 13%, any amount of interior habitat is significant.
Proximity to other woodlands or other habitats	There are no other significant natural features in close proximity to this woodland.
Linkages	The woodland does not provide a significant linkage between other significant features.
Water Protection	The woodland is not located in proximity to other features that would indicate it is important for source water protection, but any woodland in a highly developed area likely has some water protection function.
Woodland Diversity	The woodland has been classified as a mixture of dry-fresh exotic deciduous forest, dry-fresh white cedar-hardwood mixed forest, and naturalised coniferous plantation. All these communities have a very high proportion of non-native and invasive plant species, and very few native species except those highly tolerant of disturbance.
Uncommon Characteristics	The woodland does not have any identified uncommon characteristics.
Economic and Social Functional Value	The economic and social value of this woodland is unknown.

A 3.5.2 Vegetation and Vegetation Communities

Data relating to vegetation species collected during the 2021 OneT+ field investigations and provided by TRCA through correspondence in 2020 was compiled to create a vegetation species list containing 151 species identified in Segment 3

which is provided in Appendix B – Table B-1. Data reported in the 2009 EPR as well as by LGL Limited Environmental Research Associates (2005) has been excluded as this data was replaced by findings from OneT+ 2021 field investigations. Species are described by their L-rank, a ranking system used by the TRCA to assess the rarity of species found within their jurisdiction. Higher numbers indicate more common species, with L5 being the most common and L1 being the least. L+ species are introduced. The following is a brief summary of the vegetation species recorded:

- The majority of the species (133) recorded were ranked L5 or L+; i.e., secure throughout the region or introduced, respectively, or were not identified to species level.
- One (1) species, Red Pine, was ranked L1; i.e., species of regional conservation concern, regionally scarce due to either accidental occurrence or extreme sensitivity to human impacts. Red Pine is a common forest tree in central Ontario but rare as a naturally growing tree in the Carolinian Zone. In Toronto, most populations are probably introduced as this tree is commonly planted due to its tolerance of dry rocky or sandy soils.
- One (1) species, Yellow Indiangrass, was ranked L2. This species was observed growing in meadow areas at the extreme northern end of the Study Area and was thought by field observers to be introduced at this location.
- Five (5) species, American Witch-hazel, Slippery Elm, Old Switch Panicgrass, Tamarack and White Spruce, were ranked L3; i.e., species of regional conservation concern, generally less sensitive and more abundant than L1 and L2 ranked species. The location of the Witch-hazel and Tamarack records is unknown. Old Switch Panicgrass was observed growing in meadow areas at the extreme northern end of the Study Area and was thought by field observers to be introduced at this location; White Spruce was observed as planted specimens only. Slippery Elm was noted growing in the small swamp area adjacent to Bridgeview Park.
- Eight (8) species, Broad-leaf cattail, Peach-leaved willow, Northern Red Oak, Bur Oak, Eastern White Pine, Bitternut Hickory, Paper Birch and Silver Maple were ranked L4 and three (3) species Field Sow-thistle, European Beech and Belladonna are not ranked.

Where available, vegetation communities, documented by OneT+ desktop and field studies and TRCA, are mapped in **Figure A 3-13 - Figure A 3-16**. Vegetation communities in Natural Environment Study Area Segment 3 (roughly sorted from south to north) include the following:

- Cultural Meadow (CUM) has been delineated adjacent to Highway 407 and Highway 7. These sites generally continue beyond the Study Area. They are sites which were seeded with typical roadside mixes and are dominated by non-natives and invasives. These sites are delineated when the general minimum width is 20 m or is continuous with other communities or a greater context.
- Exotic Forb Meadow (CUM1-c) is a 4 ha community which encompasses the stormwater management pond north of highway 7. Few Eastern White Cedar and Basswood trees occur and is dominated by European Reed.

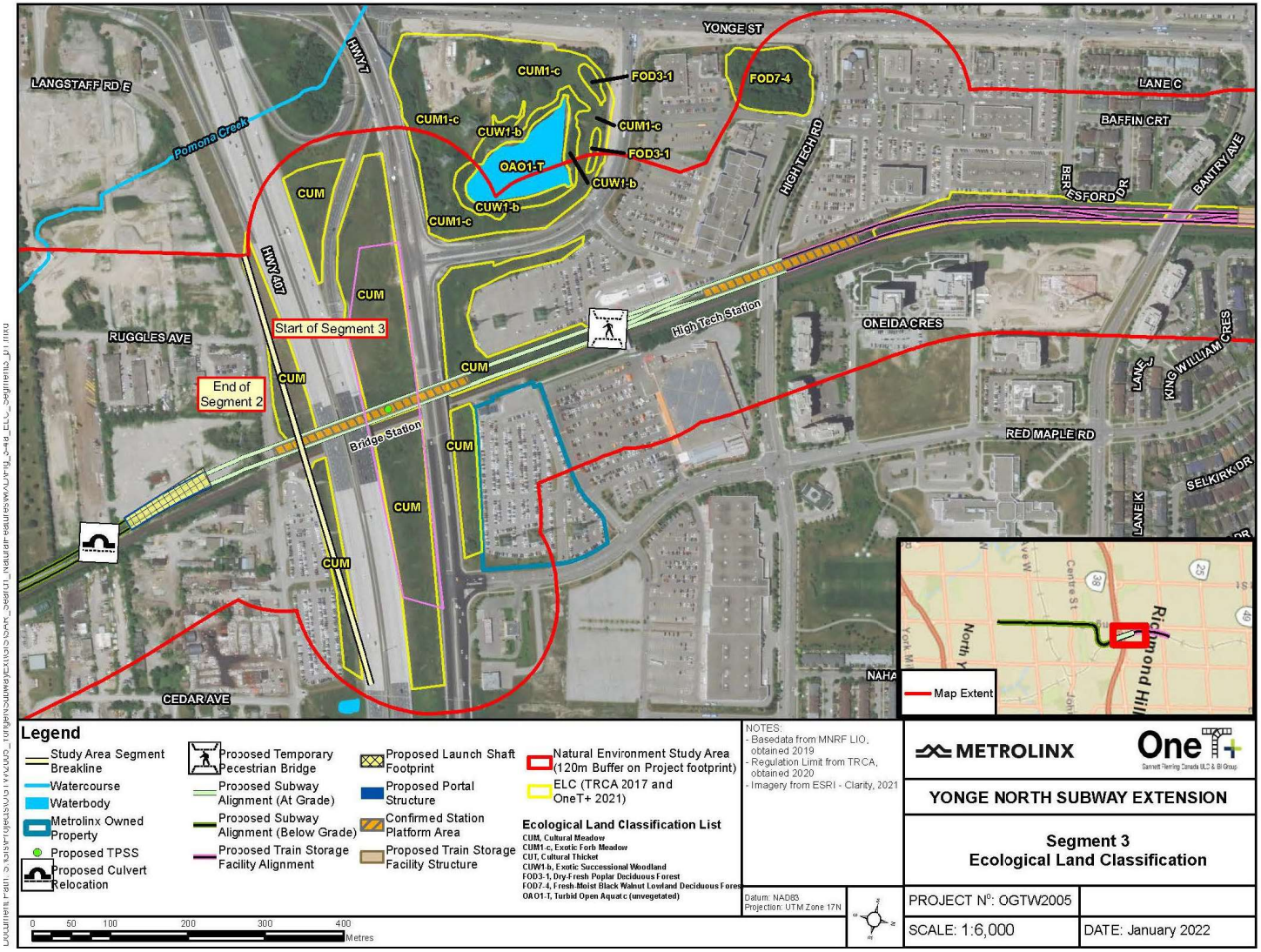


Figure A 3-13: Segment 3 Ecological Land Classification

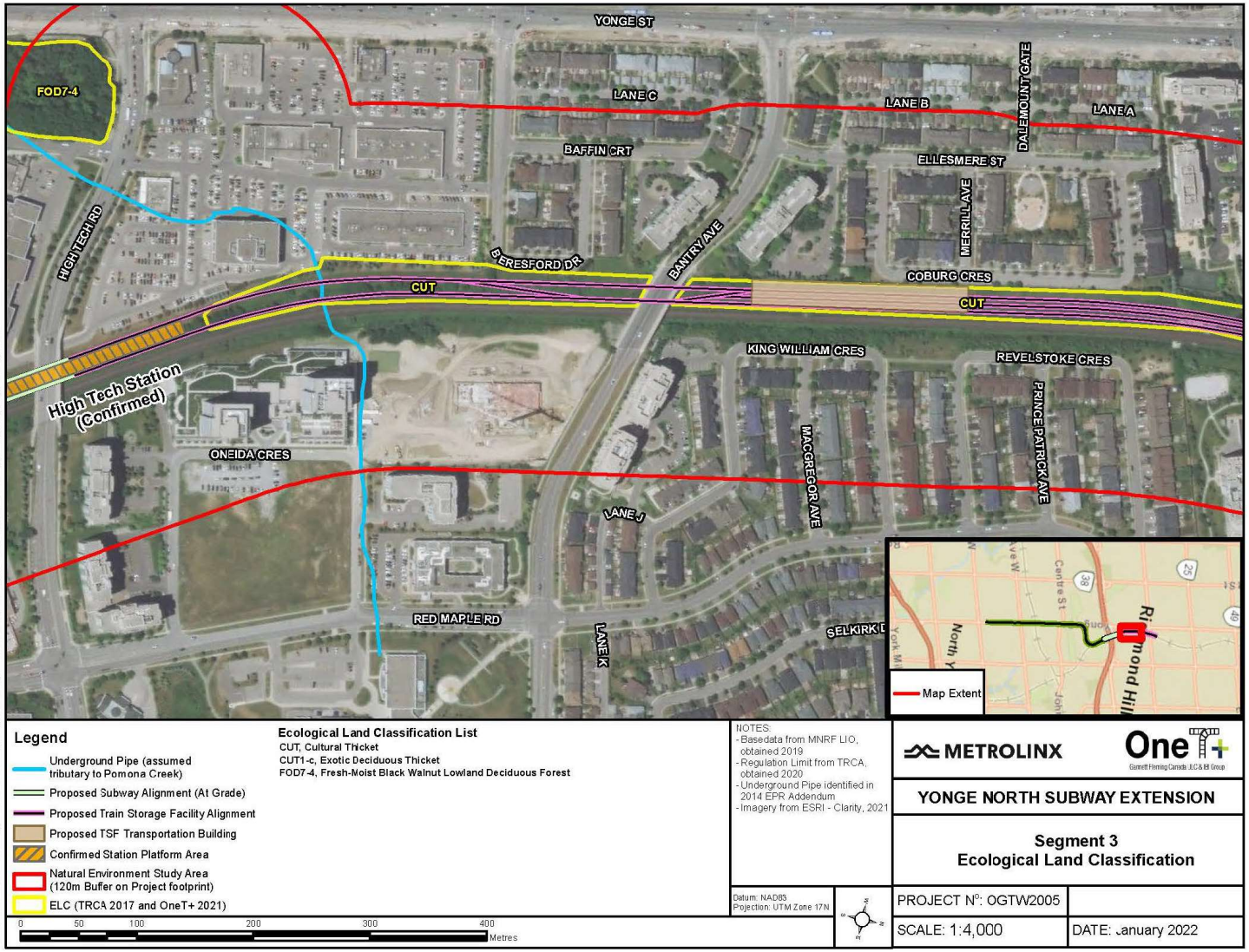


Figure A 3-14: Segment 3 Ecological Land Classification

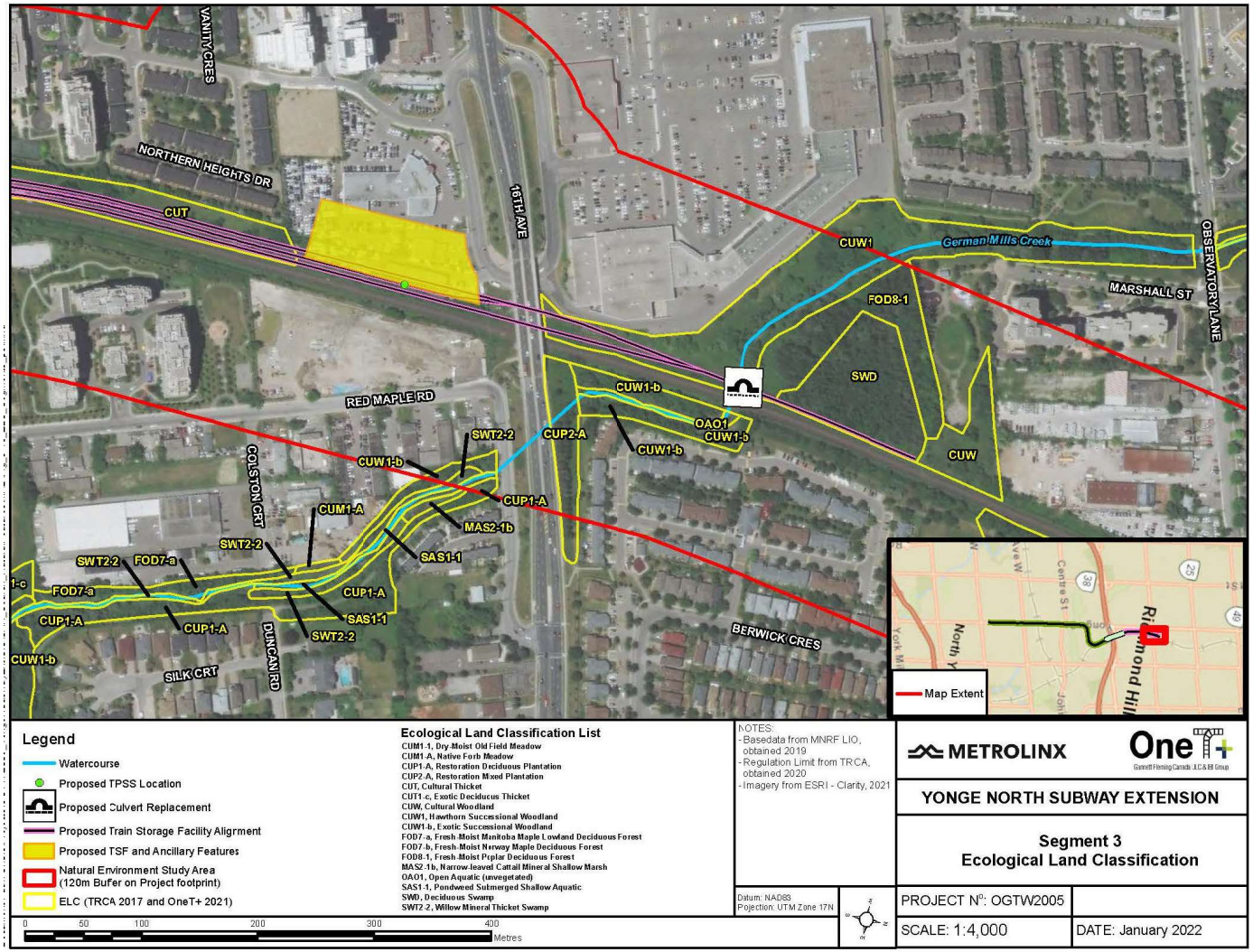


Figure A 3-15: Segment 3 Ecological Land Classification

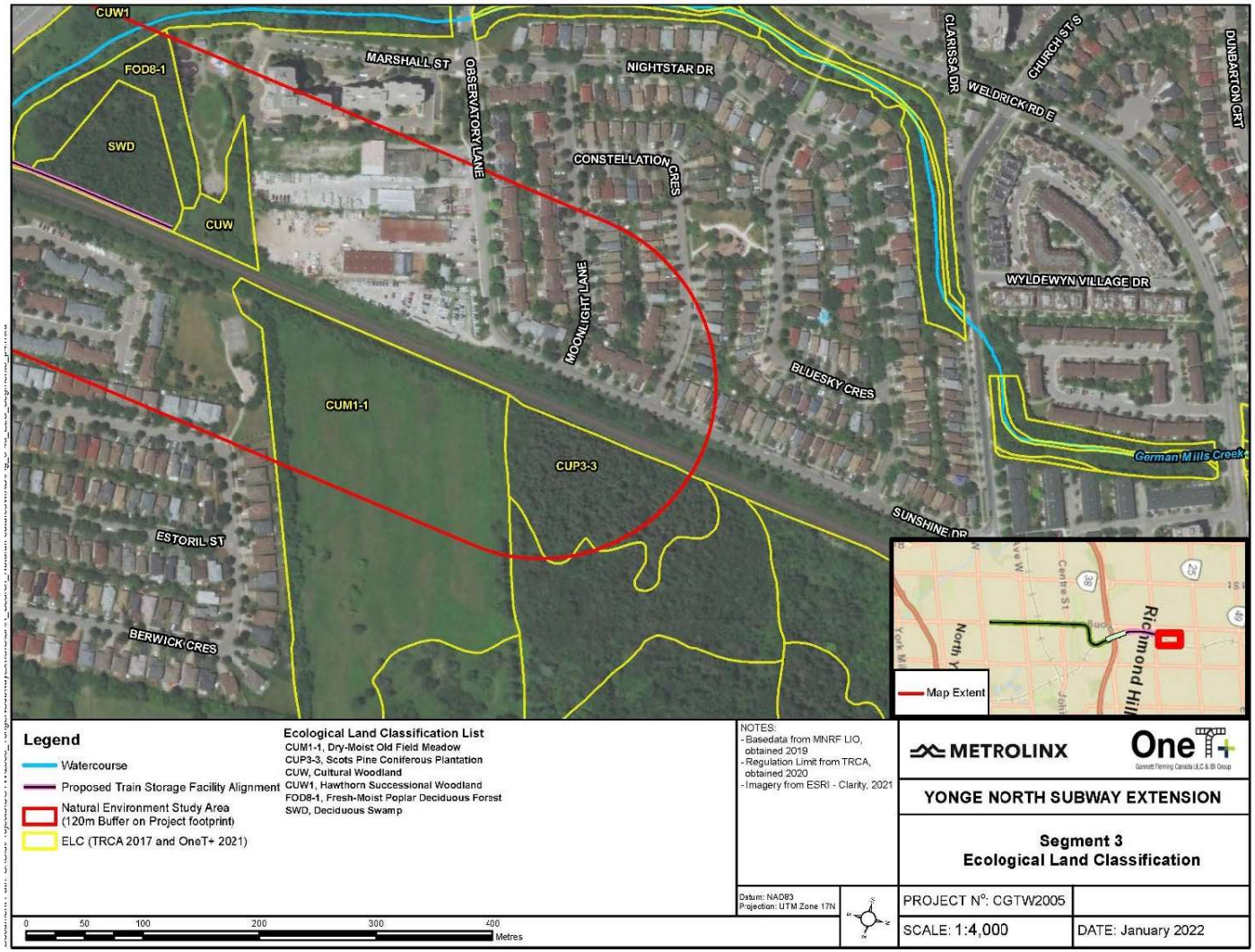


Figure A 3-16: Segment 3 Ecological Land Classification

- Cultural Thicket (CUT) has been delineated north of High Tech Road and the CUM communities. The CUT is not continuous with the CUM as only hedgerows exist along the rail ROW. Hedgerows are the width of a single tree and are not mapped as an ELC community. These sites are delineated when the general minimum width is 20 m or is continuous with other communities or a greater context.
- Restoration Mixed Plantation (CUP2-A) is comprised of horticultural plantings and is less than 0.5 ha in size. The canopy is Red Pine and Silver Maple. The sub-canopy is Trembling Aspen, Green Ash, and Showy Fly-honeysuckle. The understory is Common Buckthorn, Red-osier Dogwood, and non-native herbaceous species. The ground layer is non-native herbaceous species.
- Exotic Successional Woodland (CUW1-b) is separated by a watercourse but combined the community is less than 0.5 ha in size. The canopy is Manitoba Maple, White Willow, Red Pine, Russian Olive. The sub-canopy is Cottony Willow, Manitoba Maple, Common Buckthorn, White Spruce. The understory is Common Buckthorn, Red-osier Dogwood, Showy Fly-honeysuckle, Manitoba Maple. The ground layer is non-native herbaceous species. Another thin community occurs around the stormwater management pond north of Highway 7.
- Open Aquatic, unvegetated (OAO1) was used by TRCA to delineate the watercourses. These delineations have remained where canopies are not closed. The TRCA also uses Turbid Open Aquatic (unvegetated) (OAO1-T) to delineate the stormwater management pond north of Highway 7. They are unvegetated communities.
- Mineral Cultural Woodland Ecosite (CUW1) was refined from the TRCA data which had four (4) Hawthorn Successional Woodland (CUW1-D) communities parallel to each other. The Open Water community was removed as the canopy is largely continuous. On the west side of the CN rail tracks the community is less than 2.5 ha in size. The canopy and sub-canopy composition is Manitoba Maple, Russian Olive, White Willow, Silver Maple, Black Walnut, hybrid willows, and Common Buckthorn. The understory and ground layer are non-native woody and herbaceous species.
- Fresh-Moist Poplar Deciduous Forest (FOD8-1) was extended from the TRCA data and is now approximately 0.7 ha in size. The canopy and sub-canopy are White Poplar, Manitoba Maple, Green Ash, Trembling Aspen. The understory is Manitoba Maple, European Stinging Nettle, Green Ash, Reed Canary Grass. The ground layer is Manitoba Maple, Garlic Mustard, Common Buckthorn, and Wood Avens.
- Deciduous Swamp (SWD) occurs north of the FOD8-1 and is approximately 0.9 ha in size. The community was likely an ash swamp previously but has since lost ash due to the Emerald Ash Borer and community health and structure has declined.
- Cultural Woodland (CUW) is less than 0.4 ha in size and is likely similar to other communities and comprised of non-natives and invasives.
- Dry-Moist Old Field Meadow (CUM1-1) is approximately 6 ha in size and includes the old field and hedgerows of the Richmond Hill David Dunlap Observatory. The original TRCA delineation did not include the hedgerows. Hedgerows are Black Walnut, Silver Maple, European Beech, White Pine with abundant Common Buckthorn, Black Walnut, Common Apple, and Tatarian Honeysuckle. The meadow area is goldenrods, asters, thistles, raspberries, Common Milkweed, and cool season grasses.
- Scots Pine Coniferous Plantation (CUP3-3) is approximately 1.6 ha in size. The canopy is Scots Pine, White Pine, Green Ash. The sub-canopy is Green Ash, Common Buckthorn, American Elm, Easter White Cedar. The understory is Common Buckthorn, Chokecherry. The ground layer is Chokecherry, Cranberry Viburnum, Green

Ash, and Riverbank Grape. It was noted during OneT+ field investigations that this community is succeeding into the adjacent Dry-Fresh White Ash Deciduous Forest (FOD4-2) and Cultural Woodland (CUW1-A).

The area outside the rail corridor is private property and includes warehouses and commercial properties that have some manicured lawn with planted trees.

A 3.5.3 Wildlife and Wildlife Habitat

The TRCA provided data for terrestrial wildlife species that were observed near the Study Area of Segment 3. Generally, most wildlife data are available from atlases which cover a relatively large and diverse area (i.e., within one (1) of the 10 km x 10 km grid squares) or range mapping. For wildlife considerations in the Impact Assessment these atlases are also queried in the SAR section below. Otherwise, terrestrial wildlife species that may be found are primarily those that are common to the region and adapted to a disturbed urban environment.

OneT+ anuran call surveys completed on May 13, 2021, and June 15, 2021, reported no anurans.

OneT+ breeding bird surveys completed on June 22, 2021, and July 6, 2021, and incidental observation during other field investigations reported a total of 25 bird species. Most of the species observed (i.e., 17 of 25) were considered secure throughout the region (i.e., L5) or introduced species (i.e., L+). Eight (8) species of urban concern (i.e., L4) were also observed.

TRCA data also documents four (4) records of wildlife species, three (3) L4 bird species – Willow Flycatcher, Northern Rough-winged Swallow, and Eastern Kingbird, and one (1) mammal – White-tailed Deer within Segment 3. These species were all reported near the stormwater management pond northeast of the Highway 7 overpass at Yonge Street.

During OneT+ field investigations, incidental wildlife observations of non-bird species included Grey Squirrel, Red Squirrel, and Eastern Cottontail.

Species which have been reported during OneT+ 2021 field investigations and in the desktop study resources in the vicinity of this segment and those whose range extends into the Study Area of Segment 3 are compiled in Appendix B – Table B-2 through Table B-5.

In terms of Wildlife Habitat, the remnant features around the train storage facility do provide limited habitat. While the communities are not large enough to necessarily provide Significant Wildlife Habitat the limited habitat coverage in the vicinity lends to local significance. The habitat along German Mills Creek may be bat habitat and it is also likely that the Richmond Hill David Dunlap Observatory contains bat habitat. Based on review of available background information, species of special concern that may be found within Segment 3 include Common Nighthawk, Eastern Wood-Pewee, Monarch, Peregrine Falcon, Wood Thrush, Northern Map Turtle, and Snapping Turtle.

A 3.5.4 Surface Water

German Mills Creek

German Mills Creek spans in the municipalities of Markham, Richmond Hill, Toronto, and Vaughan in the Greater Toronto Area. It is part of the Great Lakes Basin and is a tributary of the East Branch Don River. It originates in Vaughan (near Bathurst Street and the King–Vaughan Town Line), flows south through Richmond Hill and Markham, and converges with the Don River East Branch in the East Don Parklands in Toronto, south of Steeles Avenue between

Bayview Avenue and Leslie Street. It is part of a number of streams, swamps and swales located near the Oak Ridges Moraine. The creek's approximate length is 10 km.

A 3.5.5 Fish and Fish Habitat

Within Natural Environment Study Area Segment 3, direct fish habitat is present within German Mills Creek, which crosses Segment 3 of the Study Area (**Figure A 2-3**). Due to the availability of fisheries data, site-specific fish sampling was not completed within the Study Area; however, Curve Lake First Nation has confirmed that German Mills Creek supports a strong recreational fishery and a fish species list for the watershed, compiled from multiple sources including 2016 TRCA collection data within German Mills Creek, is provided in Appendix B – Table B-6.

German Mills Creek supports a variety of warmwater, cool and coldwater species. Coldwater species that have been reported recently within German Mills Creek are limited to Mottled Sculpin; however, historic records dating back to 1949 of other coolwater/coldwater baitfish species include Northern Redbelly Dace, Rainbow Darter and Redside Dace. The disappearance of these species is likely associated with shifts in the aquatic ecosystem structure and quality resulting from changes to the landscape and land use practices. The following species have been captured in the German Mills Creek subwatershed between 2002 and 2016:

- Blacknose Dace
- Bluegill
- Bluntnose Minnow
- Brook Stickleback
- Creek Chub
- Fathead Minnow
- Goldfish
- Johnny Darter
- Longnose Dace
- Mottled Sculpin
- Pumpkinseed
- White Sucker

Within Study Area Segment 3, German Mills creek flows north to south and is representative of a highly anthropogenically modified system in the vicinity of both the rail crossing and large culvert structure under 16th Avenue. Within the assessed upstream 50 m section, the morphology consisted of pool, riffle and run sections. At the time of field reconnaissance, the mean wetted width was approximately 2.5 m and the mean wetted depth approximately 0.19 m with water colour being grey to brown. Substrates were comprised of gravel and cobble with increasing sand, silt, and clay towards the three large Corrugated Steel Pipes (CSP) under the rail corridor. Banks were unstable with signs of heavy erosion along the banks and debris pushed high up on the banks and against the CSPs with rock flow cobble check dams placed within the 20 m upstream of the culvert to slow flows. Riparian cover was low (25% cover) which consisted of primarily herbaceous vegetation, shrubs, and overhanging trees. Instream cover was low (25% total cover) and provided by cobble and algae. A storm sewer outlets to the creek approximately 20 m upstream of the culverts. Surrounding lands were observed to be forested and commercial areas with the rail line perpendicular to the creek.

Within the 200 m downstream section, similar anthropogenic modifications were observed in the way of the creek being straightened, armour stone placed along the right bank, and gabion baskets along both banks. The three culverts are perched approximately 0.5 – 1.0 m making passage upstream unlikely for the small bodied fish species recorded within the creek. The downstream reach consisted of flats, and pool sections. At the time of the field surveys, the mean wetted width was approximately 6 m and the mean wetted depth approximately 0.28 m. Substrates consisted of gravel, cobble, sand, and silt. Banks were unstable with signs of heavy flows and debris pushed high up on the banks and against the large four-barrel box culvert under 16th Avenue. Riparian cover was low (25% cover) which consisted of herbaceous vegetation, shrubs, and overhanging trees. Instream cover was low (25% total cover) and provided by cobble and algae. Surrounding lands were observed to be forested and residential areas.

No fish were observed during the field investigations; however, the known fish community assemblage (see Appendix B – Table B-6) for this system and within proximity to the rail crossing is comprised of mixed warm and cool species. The assessed reach provides habitat for migration, spawning, feeding and rearing and is generally non-limiting throughout (i.e., no sensitive, important or exceptional habitat was observed). Due to historic records of Redside Dace, habitat conditions at this location were assessed for suitability for Redside Dace, with the requirements not being present within the 250 m assessed section due to a lack of headwater features, clear water and the perched culverts under the rail line, which would be considered an impediment to fish passage. No habitat classified as critical by the *Species at Risk Act* (SARA) was identified.

A 3.5.6 Species at Risk

The following seven (7) Threatened/Endangered SAR have been reported within the past 20 years in the vicinity of Segment 3, or (in the case of mammal species) their range extends into the SAR Desktop Study Area and have been identified as potentially occurring within the SAR Desktop Study Area and its vicinity. The probability of occurrence is indicated in brackets. Acadian Flycatcher, Bank Swallow, Bobolink, Eastern Meadowlark, Red Headed Woodpecker, Western Chorus Frog species have low probability of occurrence due to lack of suitable habitat.

Species-specific details (including at risk status, source, preferred habitat) and probability of occurrence conclusions are summarized in Appendix A.

- Barn Swallow (confirmed)
- Chimney Swift (high)
- Eastern Small-footed Myotis (moderate)
- Little Brown Myotis (moderate)
- Northern Myotis (moderate)
- Tri-colored Bat (moderate)
- Butternut (confirmed)

Appendix A Species at Risk Probability of Occurrence Table

Table A-1: Species at Risk Probability of Occurrence within Yonge North Subway Extension SAR Desktop Study Area and Vicinity

Species Name, Status, and Data Source	Preferred Habitat	Location of Occurrence	Potential for Species at Risk Habitat/Occurrence within the Species at Risk Desktop Study Area and Vicinity
BIRDS			
Acadian Flycatcher (*Empidonax virescens*) SARA: Endangered ESA: Endangered S-Rank: S2S3B Source: OBBA	The Acadian Flycatcher is an area-sensitive species which requires large intact forests. In Ontario, the species is found in uplands, swamps, and well-wooded ravines with closed canopies and relatively open understorey, usually maple–beech, oak–maple, and beech–hemlock composition (MNRF 2016a).	Within the OBBA 10 km^2 grid square (17PJ25) which contains a portion of Segment 1 and encompasses Segments 2 and 3.	**Within Segment 1: None** – Suitable habitat is not present within this portion of the SAR Desktop Study Area. **Within Segments 2 and 3: Low** – Marginally suitable habitat may be present along the Don River East Branch (Segment 2) and in the forested area on the east side of the existing tracks at the extreme north end of the SAR Desktop Study Area (Segment 3). However, the area of habitat present is small, and this species is extremely rare in the area. As such, it is unlikely that these forests are used by Acadian Flycatcher. Record comes from the OBBA, a 10 km^2 area, which includes relatively large patches of ravine / forest along the Don River East Branch.
Bald Eagle (*Haliaeetus leucocephalus*) SARA: No Status COSEWIC: Not at Risk ESA: Special Concern S-Rank: S4 Source: eBird; iNaturalist	Eagles require large, stout-limbed, open-crowned trees to support their large bulky nests of sticks and provide perch and roost sites. Supercanopy trees are typically used because they are easily accessed. Nests are typically located in mature or old forest with a discontinuous canopy and numerous supercanopy trees (Naylor and Watt 2004).	Within 1.5 km of all segments.	**None** – Suitable habitat for nests or feeding not present within the SAR Desktop Study Area. Records are from 2018 and 2020 near watercourses, outside of the SAR Desktop Study Area. Likely occurs in the SAR Desktop Study Area incidentally during migration, but important habitat for this species is not present.

Species Name, Status, and Data Source	Preferred Habitat	Location of Occurrence	Potential for Species at Risk Habitat/Occurrence within the Species at Risk Desktop Study Area and Vicinity
Bank Swallow (*Riparia riparia*) SARA: Threatened ESA: Threatened S-Rank: S4B Source: OBBA, eBird	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 (COSEWIC 2013a).	Within the OBBA 10 km^2 grid square (17PJ25) which contains a portion of Segment 1 and encompasses Segments 2 and 3 and near the SAR Desktop Study Area near Segment 2 (eBird).	**Low** – Suitable habitat for nesting is not expected to be present within the SAR Desktop Study Area. Suitable habitat for feeding is widespread, and this species may occur in the SAR Desktop Study Area during migration or when foraging away from potential colonies in the general area. Three (3) Bank Swallows were reported at Holy Cross Catholic Cemetery on August 1, 2019.
Barn Swallow (*Hirundo rustica*) SARA: Threatened ESA: Threatened S-Rank: S4B Source: OBBA, eBird; iNaturalist, OneT+	Barn Swallows have shifted largely to nesting in and on artificial structures, including buildings, bridges and road culverts, and prefer various open habitats for foraging including grassy fields, pastures, agricultural crops and over open water (COSEWIC 2011a).	Within 2 km of all Segments.	**Within Segment 2 and 3: Confirmed** – Observed foraging within the Segment 3 Study Area during OneT+ field investigations on June 22, 2021. eBird states that TRCA Regional Data from June 1, 2017 confirmed an adult leaving / entering a nest under a bridge at the Ladies Golf Club of Toronto. We currently do not have a reason to assume Barn Swallows are not nesting here. At the time of this document's submission, access was not available to confirm. **Within Segment 1: Moderate** – Other sightings from a variety of sources confirm Barn Swallow are in the area foraging. There are several other bridges, culverts, and buildings in the area which could provide suitable habitat.

Species Name, Status, and Data Source	Preferred Habitat	Location of Occurrence	Potential for Species at Risk Habitat/Occurrence within the Species at Risk Desktop Study Area and Vicinity
Bobolink (*Dolichonyx oryzivorus*) SARA: Threatened ESA: Threatened S-Rank: S4B Source: OBBA	Bobolink nest primarily in forage crops, hayfields and associated pastures. Bobolink also occur in wet prairie, graminoid peatlands and abandoned fields dominated by tall grasses, no-till cropland, small-grain fields, reed beds and irrigated fields in arid regions. The species does not generally occupy fields of row crops such as corn, soybean and wheat, pastures in valleys with high shrub density or intensively grazed pastures (COSEWIC 2010a).	Within the OBBA 10 km^2 grid square (17PJ25) which contains a portion of Segment 1 and encompasses Segments 2 and 3.	**Low** – Within the SAR Desktop Study Area, grassland habitat is present within and alongside the 407 ETR; however, the habitat present is too small and disturbed to support Bobolink nesting. This species is likely occur incidentally during migration. Record comes from the OBBA, a 10 km^2 area, which contains open areas / agricultural fields to the northwest in Vaughan.
Canada Warbler (*Cardellina canadensis*) SARA: Threatened ESA: Special Concern S-Rank: S4 Source: eBird	Found in a variety of upland and wetland forest types, but it is most abundant in wet, mixed deciduous-coniferous forests with a well-developed shrub layer. Nests are typically located on or near the ground on mossy logs or roots, along stream banks or on hummocks (COSEWIC 2008a).	Within 2 km of Segment 2.	**None** – Suitable nesting habitat is not present. EBird reports one (1) migrant (seen May 21, 2019) at Pomona Mills Park. Other migrants (seen in May or August only) documented outside SAR Desktop Study Area.

Species Name, Status, and Data Source	Preferred Habitat	Location of Occurrence	Potential for Species at Risk Habitat/Occurrence within the Species at Risk Desktop Study Area and Vicinity
Chimney Swift (*Chaetura pelagica*) SARA: Threatened ESA: Threatened S-Rank: S4B, S4N Source: OBBA, eBird, TRCA, OneT+	Mainly associated with areas where the birds can find chimneys to use as nesting and resting sites; however, it is likely that a small portion of the population continues to use hollow trees (COSEWIC 2007a).	Within 2 km of all Segments.	**Within Segment 1: Confirmed** –Observed flying over the Study Area during OneT+ field investigations on June 15, 2021. **High** – It is extremely probable that Chimney Swifts are nesting in the area, locations are not known. In June 2017, TRCA data includes a record of eight (8) Chimney Swifts adjacent to Dell Glen Court, approximately 850 m from the SAR Desktop Study Area Segment 2. TRCA data notes that nesting opportunities are present in the vicinity. In May 2014, an eBird record notes “three (3) adults were witnessed flying and circling the low-rise apartment building with double brick chimney at 235 Bay Thorn Drive. They were not seen entering the chimney”. On June 8, 23 and 29, 2013, eBird records from the same source note Chimney Swifts chittering and flying over the house near the corner of Fargo Avenue and Patricia Avenue. Observer notes the presence of old chimneys in the neighbourhood. Other flyover observations occur in June 2016 around Royal Orchard Park and in May 2019 in Pomona Mills Park.

Species Name, Status, and Data Source	Preferred Habitat	Location of Occurrence	Potential for Species at Risk Habitat/Occurrence within the Species at Risk Desktop Study Area and Vicinity
Common Nighthawk (*Chordeiles minor*) SARA: Threatened ESA: Special Concern S-Rank: S4B Source: OBBA, eBird	Breeding habitat of Common Nighthawk includes a huge variety of open habitats such as clearings, grasslands, open forests, cropfields and urban areas. In urban areas, gravel rooftops are used. Foraging is aerial over virtually any habitat. (COSEWIC 2007b)	Within the OBBA 10 km^2 grid square (17PJ25) which contains a portion of Segment 1 and encompasses Segments 2 and 3. Flyover within the SAR Desktop Study Area near Segments 1 and 2.	**Moderate** – Suitable habitat for nesting and feeding may be present within the SAR Desktop Study Area. The species is not reported in the area during TRCA surveys, albeit there is no record stating that crepuscular bird surveys were completed. A September 2020 eBird record documented a flyover, likely a migrant given the date, near the corner of Clark Avenue and Yonge Street. A green roof is present at Doncaster Avenue and Yonge Street (one (1) intersection south) and it is possible other suitable rooftops exist in the SAR Desktop Study Area.
Eastern Meadowlark (*Sturnella magna*) SARA: Threatened ESA: Threatened S-Rank: S4B Source: OBBA	Eastern Meadowlarks nest in a variety of open grassy habitats, preferring native grasslands, pastures and savannahs. Larger tracts of grassland are preferred (COSEWIC 2011b).	Within the OBBA 10 km^2 grid square (17PJ25) which contains a portion of Segment 1 and encompasses Segments 2 and 3.	**Low** – Within the SAR Desktop Study Area, grassland habitat is present within and alongside the 407 ETR; however, the habitat present is too small and disturbed to support Bobolink nesting. This species is likely to occur incidentally during migration. Record comes from the OBBA, a 10 km^2 area, which contains open areas / agricultural fields to the northwest in Vaughan.

Species Name, Status, and Data Source	Preferred Habitat	Location of Occurrence	Potential for Species at Risk Habitat/Occurrence within the Species at Risk Desktop Study Area and Vicinity
Eastern Wood-pewee (*Contopus virens*) SARA: Special Concern ESA: Special Concern S-Rank: S4B Source: OBBA, eBird, TRCA	Usually found in clearings and forest edges, this species breeds in nearly any type of wooded habitat including mature woodlands, urban shade trees, roadsides and orchards, but typically prefers deciduous forest and to a lesser extent, open pine woodlands of the south and mixed hardwood-conifer forest of the north (CLO 2015; McCarty 1996).	Within 2 km of all Segments. Within the SAR Desktop Study Area in Segment 2.	**High** – Suitable habitat for nesting and feeding may be present within the SAR Desktop Study Area. TRCA data includes multiple Eastern Wood-pewee records within the wooded area near Richmond Hill Golf Club (2.1 km west of the Segment 2 end and Segment 3 start), and one (1) record near Mackenzie Richmond Hill Hospital (2.4 km northwest of Segment 3). Similar, various eBird records have Eastern Wood-pewee sightings just outside the SAR Desktop Study Area. One (1) record from June 2015 documents Eastern Wood-pewee south of Riverside Blvd. near the Thornhill Club (near Segment 2). May 2019 records note Eastern Wood-pewee in the Pomona Mills Park, these were likely migrants. Likely nesting locations within the SAR Desktop Study Area include along the Don River East Branch (Segment 2) and in the forested area on the east side of the existing tracks at the extreme north end of the SAR Desktop Study Area (Segment 3).
Olive-sided Flycatcher (*Contopus cooperi*) SARA: Threatened ESA: Special Concern S-Rank: S4B Source: eBird	Olive-sided Flycatchers are most often found in open areas containing tall trees or snags for perching. Open areas include forest openings, forest edges, burned forest or open to semi-open mature forest stands. Generally, forest habitat is either coniferous or mixed coniferous (COSEWIC 2007c).	Within 1.5 km of Segment 2.	**None** – Species does not nest in the Toronto area, and this species would only occur incidentally in migration. In May 2015, an eBird record notes a calling individual in Pomona Mills Park.

Species Name, Status, and Data Source	Preferred Habitat	Location of Occurrence	Potential for Species at Risk Habitat/Occurrence within the Species at Risk Desktop Study Area and Vicinity
Peregrine Falcon (*Falco peregrinus anatum / tundrius*) SARA: Special Concern ESA: Special Concern S-Rank: S3B Source: OBBA, TRCA, eBird	Most Peregrine Falcons nest on cliff ledges or crevices, but some will also use tall buildings and bridges near good foraging areas (COSEWIC 2007d). Habitat for Peregrine Falcons has three scales: a nest site with associated perching sites, a nesting territory, and a home range (Ontario Peregrine Falcon Recovery Team 2010). Characteristics of urban nests are often similar to those of natural cliff nests in that chosen nest sites are usually on one of the taller buildings in an area and within one block of other tall buildings and a reliable food source. They mostly feed on medium-sized birds such as Rock Pigeon and Ring-billed Gull. Other common prey are the European Starling, Blue Jay, Baltimore Oriole, House Sparrow and Kinglet species (Ontario Peregrine Falcon Recovery Team 2010).	Numerous records along the SAR Desktop Study Area near Segment 1. Within 850 m of the SAR Desktop Study Area near Segment 2. Within 400 m of the SAR Desktop Study Area near Segment 3.	**High** – No nesting sites are confirmed but perching sites or territory likely occur in the SAR Desktop Study Area. In 2009 there was a nest at Sheppard Avenue, just east of Yonge Street (south of Finch Avenue; near Segment 1). There have been no updates for the North York – Nest site on the Canadian Peregrine Foundation website since 2013 (Canadian Peregrine Foundation 2013) (http://www.peregrine-foundation.ca/w/c/sightings/north-york-nest/). TRCA data includes one (1) Peregrine Falcon record within the Toronto Ladies Golf Course near Segment 2. TRCA data notes that nesting opportunities are present in the vicinity. An eBird observation from Spruce Avenue park, (adjacent to Segment 3) in May 2020. Between April 2006 to March 2020, several additional eBird sightings near Segment 1, focused around the Xerox Tower. Numerous sightings in the City and Greater Toronto Area on eBird.
Red-headed Woodpecker (*Melanerpes erythrocephalus*) SARA: Threatened ESA: Special Concern S-Rank: S4B Source: OBBA	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 (MECP 2019b). Uses a variety of habitats including roadsides, pastures, forest edges, and grasslands. (COSEWIC 2007e).	Within the OBBA 10 km^2 grid square (17PJ25) which contains a portion of Segment 1 and encompasses Segments 2 and 3.	**Low** – Preferred habitat is scarce within the SAR Desktop Study Area, species is very rare in the Toronto area, and recent field surveys conducted by TRCA do not report Red-headed Woodpecker in the vicinity of the Project. Record comes from the OBBA, a 10 km^2 area, which includes relatively large patches of ravine / forest along the Don River East Branch.

Species Name, Status, and Data Source	Preferred Habitat	Location of Occurrence	Potential for Species at Risk Habitat/Occurrence within the Species at Risk Desktop Study Area and Vicinity
Rusty Blackbird (*Euphagus carolinus*) SARA: Special Concern ESA: No Status S-Rank: S4B Source: eBird	The breeding habitat of the Rusty Blackbird corresponds closely to the boreal forest. Within this biome, its habitat is characterized by forest wetlands, such as slow-moving streams, peat bogs, sedge meadows, marshes, swamps, beaver ponds and pasture edges. In winter, it occurs primarily in damp woodlands and cultivated fields in the southeastern portion of North America (COSEWIC 2006).	Within 2 km of Segment 1.	**None** – Species does not nest in the Toronto area, and this species would only occur incidentally during migration. EBird records occur 2 km to the southwest from Finch Avenue and Yonge Street. These are records of a fall 2020 migrant.
Wood Thrush (*Hylocichla mustelina*) SARA: Threatened ESA: Special Concern S-Rank: S4B Source: OBBA, TRCA, eBird	Breeds in mature deciduous and mixed forest (rarely coniferous forests) habitats with a well-developed understory, nearby moist soils and abundant leaf litter. Wood Thrushes are generally considered area sensitive requiring at least 4 ha of forested area (Evans et al. 2011).	Within 1.4 km west of the SAR Desktop Study Area near Segments 2 and 3.	**Moderate** – Potentially suitable nesting areas within the SAR Desktop Study Area include along the Don River East Branch (Segment 2) and in the forested area on the east side of the existing tracks at the extreme north end of the SAR Desktop Study Area (Segment 3); however, the habitat present is likely too small to support breeding of this species. West of the SAR Desktop Study Area, on Idleswift Drive near the 407 ETR, a Wood Thrush is documented on eBird in May 2013. TRCA data includes a July 2014 record of Wood Thrush within Webster Park, along the Don River East Branch, approximately 2 km upstream from the SAR Desktop Study Area. The species is likely to occur in the SAR Desktop Study Area incidentally during migration, and there are numerous records of migrants in the vicinity of the SAR Desktop Study Area.

Species Name, Status, and Data Source	Preferred Habitat	Location of Occurrence	Potential for Species at Risk Habitat/Occurrence within the Species at Risk Desktop Study Area and Vicinity
REPTILES			
Blanding's Turtle (*Emyonidea blandingii*) SARA: Threatened ESA: Threatened S-Rank: S3 Source: ORAA	Blanding's turtles inhabit shallow lakes, ponds and wetlands with mucky bottoms. This species hibernates in the soft bottoms of water bodies. Other habitat features include rocks, logs or substrates in sunny locations that provide basking opportunities (COSEWIC 2005).	Within the ORAA 10 km^2 square (17PJ24) which contains a portion of Segment 1.	**None** – Suitable wetland habitat have not been identified in the SAR Desktop Study Area. Shallow lakes do not occur in or adjacent to the SAR Desktop Study Area. This record comes from the ORAA, a 10 km^2 area, which includes relatively large patches of ravine along the Don River East Branch.
Northern Map Turtle (*Graptemys geographica*) SARA: Special Concern ESA: Special Concern S-Rank: S3 Source: ORAA	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 (COSEWIC 2002).	Within the ORAA 10 km^2 grid square (17PJ25) which contains a portion of Segment 1 and encompasses Segments 2 and 3.	**Within Segment 1: None** – Suitable habitat is not present within this portion of the SAR Desktop Study Area. **Within Segments 2 and 3: Moderate** – The Don River East Branch may provide suitable habitat for this species, although the species is quite rare in the Toronto area. Record comes from the ORAA, a 10 km^2 area, and it is unknown exactly where this potential occurrence of Map Turtle is.

Species Name, Status, and Data Source	Preferred Habitat	Location of Occurrence	Potential for Species at Risk Habitat/Occurrence within the Species at Risk Desktop Study Area and Vicinity
Snapping Turtle (*Chelydra serpentina*) SARA: Special Concern ESA: Special Concern S-Rank: S3 Source: ORAA, iNaturalist, TRCA	Slow-moving water with a soft mud bottom and dense aquatic vegetation usually in ponds, sloughs, shallow bays or river edges and slow streams and wetlands (COSEWIC 2008b).	ORAA grid square 17PJ24, containing a portion of Segment 1, has three (3) records from 1983 to 2010. Within ORAA grid square 17PJ25 which contains a portion of Segment 1 and encompasses Segments 2 and 3 there are seven (7) records from 1982 to 2018. TRCA record 1.7 km west of the SAR Desktop Study Area near Segment 3.	**Within Segment 1: None** – Suitable habitat is not present within this portion of the SAR Desktop Study Area. **Within Segments 2 and 3: High** – Suitable habitat may be present within Pomona Creek and Don River East Branch, and this species is widespread in watercourses in the Toronto area. The species also has the potential to occur in the stormwater pond just north of the 407 ETR. TRCA data includes two (2) Snapping Turtle records in the vicinity of the Project, south of Carrville Road, both approximately 1.6 km outside of the SAR Desktop Study Area. Records indicate an adult was observed in mid-May and a hatchling was observed in August 2017 near South Richvale Greenway. iNaturalist lists an adult observed in the Oakbank Pond Park (a stormwater management pond at Oakbank Road) outside the SAR Desktop Study Area southwest of the Don River East Branch crossing.

Species Name, Status, and Data Source	Preferred Habitat	Location of Occurrence	Potential for Species at Risk Habitat/Occurrence within the Species at Risk Desktop Study Area and Vicinity
AMPHIBIANS			
Western Chorus Frog (Great Lakes-St. Lawrence population) (*Pseudacris triseriata*) SARA: Threatened ESA: No Status S-Rank: S3 Source: ORAA	Western Chorus Frogs require terrestrial habitats with adjacent aquatic breeding habitat. Terrestrial habitat is typically meadows or moist woods, while breeding habitat is typically seasonal ponds without fish (COSEWIC 2008).	Within the ORAA 10 km^2 grid square (17PJ25) which contains a portion of Segment 1 and encompasses Segments 2 and 3.	**Within Segment 1: None** – Suitable habitat is not present within this portion of the SAR Desktop Study Area. **Within Segments 2 and 3: Low** – Suitable habitat is scarce within the SAR Desktop Study Area and recent field surveys conducted by TRCA do not report Western Chorus Frog in the vicinity of the Project, despite including records of calling American Toads and Green Frogs from a variety of locations in and around the SAR Desktop Study Area. OneT+ 2021 anuran call surveys did not report any anurans. The Western Chorus Frog record comes from the ORAA and could be an auditory or visual observation. The 10 km^2 grid square where this record was reported includes relatively large patches of ravine along the Don River East Branch. Vernal pools have not been reported within the SAR Desktop Study Area.
INVERTEBRATES			
Monarch (*Danaus plexippus*) SARA: Special Concern ESA: Special Concern S-Rank: S3 Source: Butterfly Atlas, iNaturalist	The breeding habitat of this species is confined to sites where milkweeds occur. Milkweed is the sole food source of Monarch caterpillars. Different milkweed species grow in a variety of environments which include fields, roadsides, open areas, wet areas and urban gardens (COSEWIC 2010b).	Species range covers all three (3) segments based on the Butterfly Atlas. iNaturalist records of occurrence within the SAR Desktop Study Area Segment 2.	**High** – iNaturalist has numerous records of Monarchs from the SAR Desktop Study Area. Meadows and edge habitats are present throughout, and Common Milkweed has been recorded in the SAR Desktop Study Area. It is likely that Monarchs breed within suitable habitat throughout the SAR Desktop Study Area.

Species Name, Status, and Data Source	Preferred Habitat	Location of Occurrence	Potential for Species at Risk Habitat/Occurrence within the Species at Risk Desktop Study Area and Vicinity
MAMMALS			
Eastern Small-footed Myotis (*Myotis leibii*) SARA: No status ESA: Endangered S-Rank: S2S3 Source: BCI, Humphrey 2017	The Eastern Small-footed Bat is one of the less common species found to hibernate in Ontario. Caves and mines serve as significant hibernacula while streams and ponds serve as foraging areas (MNRF 2019).	Species range covers all three (3) segments.	**Moderate –** Suitable habitat is expected to be scarce within the SAR Desktop Study Area due to deforestation and fragmentation of remaining woodlots, and this species is relatively rare. However, bat distribution and habitat are not fully understood, and absence of this species should not be assumed. TRCA data does not include records of snags and/or suitable bat habitat.
Little Brown Myotis (*Myotis lucifugus*) SARA: Endangered ESA: Endangered S-Rank: S4 Source: BCI, Humphrey and Fotherby 2019	Roosts in tree cavities, including small spaces or crevices found in loose bark, hollow trees, rock faces and human structures such as attics, walls and bat boxes. Hibernates in caves and abandoned mines during the winter months. Typically forages over water (COSEWIC 2013b). Maternity roosts are primarily live deciduous trees and males, juveniles, and non-reproductive females can be found in dead trees, on average all trees are over 20 cm DBH (Humphrey and Fotherby 2019). Maternity sites typically have sufficient protection from predators, an abundance of roosting locations, and adequate solar exposure (Humphrey and Fotherby 2019).	Species range covers all three (3) segments.	**Moderate** – Suitable habitat is expected to be scarce within the SAR Desktop Study Area due to deforestation and fragmentation of remaining woodlots. However, this species has the potential to occur in the remaining woodlots and may also utilize human-made structures within the SAR Desktop Study Area as roost sites. TRCA data does not include records of snags and/or suitable bat habitat.
Northern Myotis (*Myotis septentrionalis*) SARA: Endangered ESA: Endangered S-Rank: S3 Source: BCI, Humphrey and Fotherby 2019	Roosts in canopies of deciduous trees, including small spaces or crevices found in loose bark, hollow trees. Rock faces and human structures can also be used. Hibernates in caves and abandoned mines during the winter months. Typically forages over water (COSEWIC 2013b; Humphrey and Fotherby 2019). Maternity sites typically have sufficient protection from predators, an abundance of roosting locations, and adequate solar exposure (Humphrey and Fotherby 2019).	Species range covers all three (3) segments.	**Moderate** – Suitable habitat is expected to be scarce within the SAR Desktop Study Area due to deforestation and fragmentation of remaining woodlots. However, this species has the potential to occur in the remaining woodlots and may also utilize human-made structures within the SAR Desktop Study Area as roost sites. TRCA data does not include records of snags and/or suitable bat habitat.

Species Name, Status, and Data Source	Preferred Habitat	Location of Occurrence	Potential for Species at Risk Habitat/Occurrence within the Species at Risk Desktop Study Area and Vicinity
Tri-colored Bat (*Perimyotis subflavus*) SARA: Endangered ESA: Endangered S-Rank: S3 Source: BCI, Humphrey and Fotherby 2019	Within treed habitats, Tri-colored Bat primarily roosts in tree foliage (mainly within oak leaves). Leaf roosts are shaped like umbrellas with a "roof" and a hollow core where bats rest. Studies have shown that oak leaves are a preferred roost site. Maple leaves are also selected, although less commonly. It is thought that Tri-colored Bat may prefer roost trees in more open woodlands, as opposed to deep woods. Roosts in tree cavity are used less frequently than Myotis species (COSEWIC 2013b).	Species range covers all three (3) segments.	**Moderate –** Suitable habitat is expected to be scarce within the SAR Desktop Study Area due to deforestation and fragmentation of remaining woodlots, and this species is relatively rare. However, bat distribution and habitat is not fully understood, and absence of this species should not be assumed. TRCA data does not include records of snags and/or suitable bat habitat.
FISH			
Redside Dace (*Clinostomus elongatus*) SARA: Endangered ESA: Endangered S-Rank: S2 Source: NHIC, DFO, 2009 EPR, 2014 EPR Addendum	The current Canadian distribution of Redside Dace is approximately 5% of the global range, and is limited to small, isolated populations in southern Ontario. This species is found in pools and slow-flowing sections of relatively small headwater streams with both pool and riffle habitats and a moderate to high gradient. Redside Dace are typically found in stream segments that flow through open meadows, pasture or shrub overstory as opposed to closed canopy forest in Ontario (COSEWIC 2007f).	Recorded in Don River East Branch, which crosses Segment 2. Pomona Creek, which crosses Segment 2, and German Mills Creek, which crosses Segment 3, may provide contributing habitat.	**Within Segment 1: None** – There are no watercourses within Segment 1 of the SAR Desktop Study Area. **Within Segment 2 and 3: Low** –Available background information indicates no Redside Dace records or critical habitat within the Desktop Study Area for the three watercourses (Don River East Branch, Pomona Creek and German Mills Creek). Based on this, presence of Redside Dace is low to unlikely. As per DFO aquatic SAR mapping, the closest Redside Dace-occupied area is found approximately 1.3 km upstream of the Project crossing under the Don River East branch, well outside the Desktop Study Area. Further, local habitat conditions were assessed against the preferences/requirements for this species which indicated that Redside Dace habitat requirements were not present within the 250 m of all three Project crossings.

Species Name, Status, and Data Source	Preferred Habitat	Location of Occurrence	Potential for Species at Risk Habitat/Occurrence within the Species at Risk Desktop Study Area and Vicinity
Northern Brook Lamprey (*Ichthyomyzon fossor*) SARA: Special Concern ESA: Special Concern S-Rank: S3 Source: 2009 EPR	The Northern Brook Lamprey inhabits clear, coolwater streams. The larval stage requires soft substrates such as silt and sand for burrowing which are often found in the slow-moving portions of a stream. Adults are found in areas associated with spawning, including fast flowing riffles comprised of rock or gravel (MECP 2019a).	None- collected by the TRCA in the main branch of the Don River East Branch approximately 5.3 km upstream of Yonge Street, between Bathurst Street and Carville Road.	**None** – No sources other than the 2009 EPR indicate this species is present. The 2009 EPR states that Northern Brook Lamprey "was collected by the TRCA in the main branch of the Don River East Branch west of the SAR Desktop Study Area in 2002 and 2005, approximately 5.3 km upstream of Yonge Street, between Bathurst Street and Carville Road." It is stated that this is a "considerable distance from Yonge Street."
PLANTS			
Butternut (*Juglans cinerea*) SARA: Endangered ESA: Endangered S-Rank: S3? Source: iNaturalist, TRCA	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 (MNRF 2016b).	At the intersection of Yonge Street and High Tech Road, adjacent to the SAR Desktop Study Area Segments 3.	**Within Segment 1: Low** – Possible occurrences in remaining woodlots throughout the SAR Desktop Study Area, arborist surveys and field surveys will be required to confirm presence/absence. **Within Segment 2: Low** – Outside of the SAR Desktop Study Area, in 2003 and 2013, two (2) Butternuts were recorded in the South Richvale Greenway Walk near Camgreen Court by TRCA. In 2014, one (1) Butternut was recorded in a wooded area near Stockdale Crescent by TRCA. **Within Segment 3: Confirmed -** An iNaturalist record documents the occurrence of one (1) Butternut within the SAR Desktop Study Area Segment 3 near the intersection of High Tech Road and Yonge Street. The health and purity of this individual should be confirmed by field surveys if impacts within 50 m of this area are anticipated.

Notes

Only those species reported within the last 20 years (i.e., since 2000) are included in the findings above.
COSEWIC: Committee on the Status of Endangered Wildlife in Canada status provided in the case that the species has no status under SARA but is listed by COSEWIC.
SARA: *Species at Risk Act, 2002* Schedule 1 unless otherwise noted. The protection and/or conservation measures afforded by SARA apply only to species once they are on Schedule 1.
ESA: *Endangered Species Act, 2007*.
S-Rank: S1 – Extremely rare throughout its range in the province; S2 – Rare throughout its range in the province; S3 – Uncommon or vulnerable species; S4 – Apparently Secure Species; S5 – Secure Species; SX – Extirpated; B – Breeding; N – Non-breeding; ? – Uncertainty

Sources:

BCI: Bat Conservation International Inc. species profile data (BCI 2019).
DFO: Fisheries and Oceans Canada aquatic species at risk map (DFO 2019).
OBA: Ontario Butterfly Atlas (TEA 2018).
eBird: eBird Online Database (eBird 2020).
iNaturalist: iNaturalist Online Database (iNaturalist 2020).
ORAA: *Ontario Reptile and Amphibian Atlas* (Ontario Nature 2020).
OneT+ 2021 field observations.
NHIC: Natural Heritage Information Centre Online Database (MNRF 2019a).
TRCA: Data provided to Metrolinx from the Toronto and Region Conservation Authority.
2009 EPR: *Yonge Subway Extension – Finch Station to Richmond Hill Centre Transit Project Assessment, Environmental Project Report*.
2014 EPR Addendum: *Yonge Subway Extension – Finch Station to Richmond Hill Centre Transit Project Assessment, Environmental Project Report Addendum. Train Storage Facility*.

Appendix B Species Lists

Appendix B: Table B-1 Plant Species Observed within the YNSE Project Study Area

Scientific name	Common name	Type	S-Rank	L-Rank	2022 EPR Addendum Study Area Segment Associated with Observation		
					1	2	3
Abies sp.	Fir sp.		-	-			Δ
Acer negundo	Manitoba Maple	I	S5	L+?	+, X	+, X	+, X
Acer platanoides	Norway Maple	I	SNA	L+	+	+, X	+, X
Acer saccharinum	Silver Maple		S5	L4		R	+, X, R
Acer saccharum	Sugar Maple		S5	L5			+, X
Acer tataricum	Tatarian Maple		SNA	L+			+
Acer x freemanii	(Acer rubrum X Acer saccharinum)		SNA	L4	+		
Achillea filipendulina	Fern-leaved Yarrow		SNA	L+			+
Achillea millefolium	Common Yarrow	I	SNA	L+	+, X		+
Actaea rubra	Red Baneberry		S5	L5			X
Aesculus hippocastanum	Horse Chestnut	I	SNA	L+		+, X	
Agrostis gigantea	Redtop	HI	SNA	L+	X		+
Ailanthus altissima	Tree-of-heaven		SNA	L+	+		
Alliaria petiolata	Garlic Mustard	HI	SNA	L+	+, X	X	+, X
Alnus glutinosa	European Black Alder		SNA	L+			+
Ambrosia artemisiifolia	Common Ragweed		S5	L5	+	X	
Amelanchier sp.	Serviceberry Species		-	-	X	+, X	+, Δ
Aralia nudicaulis	Wild Sarsaparilla		S5	L5			X
Arctium minus	Common Burdock	I	SNA	L+	+, X	+, X	+
Arisaema triphyllum	Jack-in-the-pulpit		S5	L5			X
Asclepias syriaca	Common Milkweed		S5	L5	+, X	X, Δ	+, X
Atropa belladonna	Belladonna		Not ranked	Not ranked			+
Betula papyrifera	Paper Birch		S5	L4			+, R
Bidens frondosa	Devil's Beggarticks		S5	L5	X		+
Bromus inermis	Awnless Brome		SNA	L+	X	X	X
Bromus tectorum	Cheat Grass	I	SNA	L+		X	X
Campanula rapunculoides	Creeping Bellflower	I	SNA	L+	+, X	Δ	
Carex laxiflora	Loose-flowered Sedge		S5	U1, U2, L4		X	
Carex sp.	Sedge species		-	-			+

Scientific name	Common name	Type	S-Rank	L-Rank	2022 EPR Addendum Study Area Segment Associated with Observation		
					1	2	3
Carya cordiformis	Bitternut Hickory		S5	L4			+
Celtis occidentalis	Common Hackberry		S4	R1, L+			+, Δ
Centaurea stoebe	Spotted Knapweed		SNA	L+	X		
Chelidonium majus	Greater Celadine	I	SNA	L+		X	
Chenopodium album	White Goosefoot	I	SNA	L+	X	X	X
Cichorium intybus	Wild Chicory	I	SNA	L+	X	X	+
Cicuta maculata	Spotted Water-hemlock		S5	U2, L5	X		
Circaea canadensis	Broad-leaved Enchanter's Nightshade		S5	L5		X	X
Cirsium arvense	Canada Thistle	HI	SNA	L+	X	+, X, Δ	+, Δ
Cirsium vulgare	Bull Thistle		SNA	L+			+
Convallaria majalis	European Lily-of-the-valley	I	SNA	L+	+	X	Δ
Convolvulus arvensis	Field Bindweed		SNA	L+			+
Cornus alternifolia	Alternate-leaf Dogwood		S5	L5		X	Δ
Cornus obliqua	Silky Dogwood		S5	L4		R	
Cornus rugosa	Roundleaf Dogwood		S5	L4		X	
Cornus sericea	Red-osier Dogwood		S5	L5	+	X, Δ	+, Δ
Crataegus sp.	Hawthorn species		-	-			+
Dactylis glomerata	Orchard Grass		SNA	L+	+		+
Daucus carota	Wild Carrot	I	SNA	L+	+, X	X	+, X
Dipsacus fullonum	Common Teasel		SNA	L+	X		+
Echinocystis lobata	Wild Mock-cucumber		S5	L5			X
Echium vulgare	Viper's Bugloss	I	SNA	L+	X		
Elaeagnus angustifolia	Russian Olive	I	SNA	L+	+	Δ	+, Δ
Eleocharis compressa	Flat-stemmed Spike-rush		S4	-	X		
Elymus canadensis	Canada Wild-rye		S5	L4		R	
Elymus repens	Quackgrass	I	SNA	L+		X	+, X
Elymus virginicus var. virginicus	Virginia Wild-rye		S5	U2, L5			X
Equisetum arvense	Field Horsetail		S5	L5	X	Δ	+
Erigeron annuus	White-top Fleabane		S5	L5	X		
Erigeron canadensis	Canada Horseweed		S5	L5		X	
Erigeron philadelphicus	Philadelphia Fleabane		S5	L5	X		

Scientific name	Common name	Type	S-Rank	L-Rank	2022 EPR Addendum Study Area Segment Associated with Observation		
					1	2	3
Erysimum cheiranthoides	Wormseed Wallflower	I	S5	L+		X	
Euonymus europaeus	European Spindle-tree		SNA	L+		Δ	
Eupatorium perfoliatum	Boneset		S5	L5		R	
Euthamia graminifolia	Grass-leaved Goldenrod		S5	L5			+
Fagus grandifolia	American Beech		S4	L4		R	
Fagus sylvatica	European Beech		Not ranked	Not ranked			+
Fallopia convolvulus	Black Bindweed		SNA	L+		X	
Festuca rubra ssp. rubra	Red Fescue	I	SNA	L+	X	X	X
Forsythia sp.	Forsythia species		-	-	+		
Fragaria virginiana	Wild Strawberry		S5	L5	X		+
Fraxinus americana	White Ash		S4	L5	+, X		+
Fraxinus pennsylvanica	Red Ash		S4	L5		Δ	+
Galium verum	Yellow Spring Bedstraw	I	SNA	L+		Δ	Δ
Geum aleppicum	Yellow Avens		S5	L5	X		
Geum urbanum	Wood Avens	I	SNA	L+		X	+, X
Ginkgo biloba	Gingko		-	-		+	
Glechoma hederacea	Ground Ivy	I	SNA	L+		X, Δ	
Gleditsia triacanthos	Honey Locust		S2?	L+			+
Hackelia virginiana	Virginia Stickseed		S5	U1, R2, L5		Δ	+, X
Hamamelis virginiana	American Witch-hazel		S5	U2, L3			Δ
Hedera helix	English Ivy	I	SNA	L+		Δ	
Helianthus tuberosus	Jerusalem Artichoke		SU	L5		Δ	
Hemerocallis fulva	Orange Daylily		SNA	L+	+		
Hemerocallis sp.	Daylily sp.		-	-		Δ	
Hesperis matronalis	Dame's Rocket	I	SNA	L+		Δ	X
Hieracium piloselloides	Glaucous King-devil	I	SNA	L+	X		
Hypericum perforatum	Common St. John's-wort	I	SNA	L+	X	X	+, X
Impatiens capensis	Spotted Jewelweed		S5	L5		Δ	+, X
Iris sp.	Iris species		-	-	+		
Juglans nigra	Black Walnut		S4	R2, L5	+	+, X	+, X
Juncus torreyi	Torrey's Rush		S5	L5	X		

Scientific name	Common name	Type	S-Rank	L-Rank	2022 EPR Addendum Study Area Segment Associated with Observation		
					1	2	3
Juniperus communis	Ground Juniper		S5	R1, R2, L3	X		
Juniperus virginiana	Eastern Red Cedar		S5	U1, U2, L5	+, X		+
Lactuca serriola	Prickly Lettuce	I	SNA	L+	X	X	X
Larix decidua	European Larch		SNA	L+			+
Larix laricina	Tamarack		S5	L3			R
Leonurus cardiaca	Common Motherwort		SNA	L+		Δ	+, Δ
Leucanthemum vulgare	Oxeye Daisy	I	SNA	L+	X		
Ligustrum vulgare	European Privet		SNA	L+	+		
Linaria vulgaris	Butter-and-eggs	I	SNA	L+		X, Δ	Δ
Lithospermum officinale	European Gromwell		SNA	L+			+
Lolium arundinaceum	Tall Ryegrass		SNA	L+	+		+
Lolium perenne	Perennial Ryegrass	I	SNA	L+		X	
Lonicera japonica	Japanese Honeysuckle		SNA	L+	+		
Lonicera tatarica	Tatarian Honeysuckle		SNA	L+		+	+
Lonicera tatarica	Tartarian Honeysuckle	I	SNA	L+		+, X, Δ	+, X, Δ
Lotus corniculatus	Garden Bird's-foot Trefoil		SNA	L+			+
Lotus corniculatus	Bird's-foot Trefoil	I	SNA	L+		X, Δ	+, X
Lysimachia ciliata	Fringed Loosestrife		S5	L5		Δ	
Lysimachia nummularia	Creeping Jennie	HI	SNA	L+		Δ	
Lythrum salicaria	Purple Loosestrife	HI	SNA	L+	X		+, X
Maianthemum stellatum	Starflower False Solomon's-seal		S5	L5		X	
Malus baccata	Siberian Crabapple		SNA	L+	+	+	
Malus pumila	Common Apple		SNA	L+			+
Matricaria discoidea	Pineappleweed	I	SNA	L+	X		
Matteuccia struthiopteris	Ostrich Fern		S5	L5		X	
Medicago lupulina	Black Medic	I	SNA	L+		X	X
Melilotus albus	White Sweet-clover	I	SNA	L+	X	X	+, X
Melilotus officinalis	Yellow Sweet Clover	I	SNA	L+		X	X
Morus alba	White Mulberry	HI	SNA	L+		+, Δ	+, Δ
Nasturtium microphyllum	Small-leaved Watercress	I	SNA	L+		Δ	
Nepeta cataria	Catnip	I	SNA	L+	X	X	

Scientific name	Common name	Type	S-Rank	L-Rank	2022 EPR Addendum Study Area Segment Associated with Observation		
					1	2	3
Oenothera biennis	Common Evening-primrose		S5	L5	X	Δ	+, Δ
Oxalis stricta	Upright Yellow Wood-sorrel		S5	L5		X	+
Panicum virgatum	Old Switch Panicgrass		S4	L3			+
Parthenocissus vitacea	Thicket Creeper		S5	L5	+	+	
Parthenocissus vitacea	Virginia Creeper		S5	L5	+	+, X	X
Persicaria lapathifolia	Pale Smartweed		S5	L5	X		
Persicaria maculosa	Spotted Lady's-thumb		SNA	L+			+
Phalaris arundinacea	Reed Canarygrass		S5	L+?	+, X	+, X	+, X
Phleum pratense	Meadow Timothy	HI	SNA	L+	X	X	X
Phragmites australis ssp. australis	European Reed	HI	SNA	L+	+	Δ	+, Δ
Picea abies	Norway Spruce	I	SNA	L+	+	X	+, X
Picea glauca	White Spruce		S5	L3		X	+, X, R
Picea pungens	Blue Spruce		SNA	L+		+	+
Pinus mugo	Mugo Pine		SNA		+		
Pinus nigra	Black Pine	I	SNA	L+		Δ	
Pinus resinosa	Red Pine		S5	L1		+, R	+, X, R
Pinus strobus	Eastern White Pine		S5	L4			+, Δ, R
Pinus sylvestris	Scots Pine	I	SNA	L+			+, X
Plantago major	Common Plantain	I	S5	L+	+	X	+
Poa annua	Annual Bluegrass	I	SNA	L+		X	X
Poa compressa	Canada Bluegrass	I	SNA	L+	+	X	+, X
Poa pratensis ssp. pratensis	Kentucky Bluegrass	I	S5	L+	X	X	X
Populus deltoides	Eastern Cottonwood		S5	L5			+
Populus tremuloides	Trembling Aspen		S5	L5	+	X, Δ	+, Δ
Potentilla recta	Sulphur Cinquefoil	I	SNA	L+	X		
Prunella vulgaris	Common Self-heal	I	SNA	L+		X	+
Prunus serotina	Black Cherry		S5	L5			+
Prunus virginiana	Chokecherry		S5	L5	X	X	+, X
Puccinellia distans	Spreading Alkali Grass	I	SNA	L+		X	X
Quercus macrocarpa	Bur Oak		S5	L4		+, Δ, R	+, Δ
Quercus rubra	Northern Red Oak		S5	L4		X	Δ

Scientific name	Common name	Type	S-Rank	L-Rank	2022 EPR Addendum Study Area Segment Associated with Observation		
					1	2	3
Ranunculus acris	Tall Butter-cup	I	SNA	L+			X
Ranunculus sp.	Buttercup species		-	-			+
Reynoutria japonica	Japanese Knotweed	I	SNA	L+		Δ, +	
Rhamnus cathartica	European Buckthorn	HI	SNA	L+	+, X	Δ	+, X, Δ
Rhus aromatica	Fragrant Sumac		S5	R1, R2, L+			Δ
Rhus typhina	Staghorn Sumac		S5	L5	+, X	X, Δ	+, Δ
Ribes rubrum	Northern Red Currant	I	SNA	L+			X
Ribes sp.	Currant species		-	-			+
Robinia pseudoacacia	Black Locust	HI	SNA	L+	+, X	+, X	+, X
Rubus idaeus	Red Raspberry		S5	L+		X	+
Rubus occidentalis	Black Raspberry		S5	L5		+, Δ	+
Rumex crispus	Curled Dock	I	SNA	L+	X	X	+, X
Salix alba	White Willow	I	SNA	L+		X, Δ	
Salix amygdaloides	Peach-leaved Willow		S5	L4			R
Salix discolor	Pussy Willow		S5	L4		R	
Salix sp.	Willow species		-	-	+	+	+
Salix x rubens	Reddish Willow	I	SNA	L+		X	
Salix x sepulcralis	Weeping Willow	I	SNA	L+		X	
Sambucus racemosa	Red Elderberry		S5	L5			Δ
Saponaria officinalis	Bouncing-bet	I	SNA	L+	X	+, Δ	+
Scilla siberica	Siberian Squill		SNA	L+	+		
Securigera varia	Purple Crown-vetch	HI	SNA	L+	+	Δ	Δ
Silene vulgaris	Bladder Campion		SNA	L+			+
Solanum dulcamara	Climbing Nightshade	I	SNA	L+	X	X, Δ	Δ
Solidago altissima	Tall Goldenrod		S5	L5	+, X	+, X	+, X
Solidago canadensis var. canadensis	Canada Goldenrod		S5	L5		X, Δ	Δ
Solidago flexicaulis	Broad-leaved Goldenrod		S5	L5		X	
Solidago gigantea	Giant Goldenrod		S5	L5		Δ	+
Solidago nemoralis ssp. nemoralis	Field Goldenrod		S5	L5	X	X	X
Sonchus arvensis	Field Sow-thistle		SNA				+
Sorbus aucuparia	European Mountain-ash	I	SNA	L+	X		

Scientific name	Common name	Type	S-Rank	L-Rank	2022 EPR Addendum Study Area Segment Associated with Observation		
					1	2	3
Sorbus sp.	Mountain-ash species		-	-			+
Sorghastrum nutans	Yellow Indiangrass		S4	L2			+
Stachys byzantina	Woolly Hedge-nettle		SNA	L+	+		
Symphyotrichum ericoides	White Heath Aster		S5	L5	+, X	Δ	Δ
Symphyotrichum lanceolatum	Panicled Aster		S5	L5	X		+
Symphyotrichum novae-angliae	New England Aster		S5	L5	+	Δ	+, Δ
Symphytum officinale	Common Comfrey		SNA	L+		X	
Syringa vulgaris	Common Lilac	I	SNA	L+	+	+, Δ	
Tanacetum vulgare	Common Tansy	I	SNA	L+	+, X	Δ	Δ
Taraxacum officinale	Common Dandelion	HI	SNA	L+	+	X	+, X
Thuja occidentalis	Eastern White Cedar		S5	L5	+	+, X, R	+, X, R
Tilia americana	Basswood		S5	L5			+
Tilia cordata	Little-leaved Linden		SNA	L+	+	+	
Tilia cordata	Little-leaf Linden	I	SNA	L+	+	+, Δ	
Toxicodendron radicans var. rydbergii	Western Poison Ivy		S5	L5			X, +
Tragopogon dubius	Meadow Goat's-beard	I	SNA	L+	X	X	
Trifolium pratense	Red Clover	I	SNA	L+	+, X	X	X
Trifolium repens	White Clover	I	SNA	L+		X	X
Turritis glabra	Tower-mustard		S5	R1, R2, L3	X		
Tussilago farfara	Coltsfoot	I	SNA	L+	X	X, Δ	+
Typha angustifolia	Narrow-leaved Cattail	I	SNA	L+	X	X	+, X
Typha latifolia	Broad-leaf Cattail		S5	L4	X	X	X
Ulmus americana	White Elm		S5	L5		X	+, Δ
Ulmus pumila	Siberian Elm	I	SNA	L+	+	+, X, Δ	+, Δ
Ulmus rubra	Slippery Elm		S5	U2, L3			+, Δ
Urtica dioica	Stinging Nettle	I	SNA	L+		Δ	+
Verbascum thapsus	Common Mullein	I	SNA	L+		X, Δ	+, Δ
Verbena urticifolia	White Vervain		S5	L5		Δ	X
Viburnum lantana	Wayfaring-tree	I	SNA	L+		Δ	
Viburnum opulus ssp. opulus	Cranberry Viburnum	I	SNA	L+		Δ	+, X
Vicia cracca	Tufted Vetch	HI	SNA	L+	X	X, Δ	+, X

Scientific name	Common name	Type	S-Rank	L-Rank	2022 EPR Addendum Study Area Segment Associated with Observation		
					1	2	3
Vinca minor	Periwinkle	HI	SNA	L+		X	
Vincetoxicum rossicum	European Swallowwort	I	SNA	L+	X	+, X	+
Viola sp.	Violet species		N/A	N/A			+
Vitis riparia	Riverbank Grape		S5	L5	X	+, X, Δ	+

Notes

Due to the high variability of plant common names, this species list has been sorted by scientific name.

No plant species data is available for the southern end of Segment 1.

Some species names (scientific and/or common) have been revised to match current nomenclature specified by the Ministry of Natural Resources and Forestry, as documented in the *Southern Ontario Vascular Plant Species List* (MNR 2013) and/or the Natural Heritage Information Centre database (MNRF 2019).

Type: I = Invasive; HI = Highly Invasive Adventive

S-Rank: The Natural Heritage provincial ranking system (provincial S-rank) is used by the MNRF to set protection priorities for rare species and natural communities.

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

S4 - Apparently Secure Species;

S5 - Secure Species;

L-Rank: Local ranking system as identified by region as reported in the *Yonge Subway Extension Conceptual Design and Functional Planning Study: Natural Environment Report* (Ecoplans Ltd. 2009)

U – Uncommon 1-Greater Toronto Area

R – Rare 2-York Region

L-Rank as provided by TRCA's *Fauna Ranks and Scores for TRCA Jurisdiction, 2020*:

L1 = Species of Regional Conservation Concern, regionally scarce due to either accidental occurrence or extreme sensitivity to human impacts

L2 = Species of Regional Conservation Concern, somewhat more abundant and generally slightly less sensitive than L1 species

L3 = Species of Regional Conservation Concern, generally less sensitive and more abundant than L1 and L2 ranked species

L4 = Species of Urban Concern; occur throughout the region but could show declines if urban impacts are not mitigated effectively

L5 = species that are considered secure throughout the region

L+ = introduced species, not native to the Toronto region

- = L-Rank not assigned

? = Uncertainty

ESA: *Endangered Species Act, 2007*

SARA: *Species at Risk Act, 2002*

Source

Yonge Subway Extension Conceptual Design and Functional Planning Study: Natural Environment Report (Ecoplans Ltd. 2009).

X = Species reported by LGL (2005) *Natural Sciences Report. Yonge Street Transitway from Steeles Avenue to 19th A venue/Gamble Road. Individual Environmental Assessment* (observed during 2003 field surveys).

Δ = Species reported by Ecoplans Ltd. in Oct. 2008, not previously reported by LGL (2005).

☼ = Species reported by TRCA 2000 through 2017.

+ = Species observed during OneT+ 2021 field investigations.

Appendix B: Table B-2 Bird Species Reported in the Vicinity of the YNSE Project Study Area

Scientific name	Common name	S-Rank	TRCA L-Rank	ESA	SARA	2022 EPR Addendum Study Area Segment Associated with Report		
						1	2	3
Empidonax virescens	Acadian Flycatcher	S2S3B	L3	END	END	X	X	X
Empidonax alnorum	Alder Flycatcher	S5B	L4			X	X	X
Botaurus lentiginosus	American Bittern	S4B	L3			X	X	X
Anas rubripes	American Black Duck	S4	L3			X	X	X
Corvus brachyrhynchos	American Crow	S5B	L5			X	X, ☼	X
Spinus tristis	American Goldfinch	S5B	L5			X, +	X, ☼, +	X, +
Falco sparverius	American Kestrel	S4	L4			X	X	X
Setophaga ruticilla	American Redstart	S5B	L4			X	X	X
Turdus migratorius	American Robin	S5B	L5			X, +	X, ☼, +	X, +
Scolopax minor	American Woodcock	S4B	L3			X	X	X
Icterus galbula	Baltimore Oriole	S4B	L5			X	X, ☼	X
Riparia riparia	Bank Swallow	S4B	L3	THR	THR	X	X	X
Hirundo rustica	Barn Swallow	S4B	L4	THR	THR	X	X	X, +
Strix varia	Barred Owl	S5	L2			X	X	X
Megaceryle alcyon	Belted Kingfisher	S4B	L4			X	X	X
Mniotilta varia	Black-and-white Warbler	S5B	L2			X	X	X
Coccyzus erythropthalmus	Black-billed Cuckoo	S5B	L3			X	X	X
Poecile atricapillus	Black-capped Chickadee	S5	L5			X, +	X, ☼	X, +
Setophaga caerulescens	Black-throated Blue Warbler	S5B	L3			X	X	X
Setophaga virens	Black-throated Green Warbler	S5B	L3			X	X	X
Cyanocitta cristata	Blue Jay	S5	L5			X, +	X	X, +
Polioptila caerulea	Blue-gray Gnatcatcher	S4B	L4			X	X	X
Dolichonyx oryzivorus	Bobolink	S4B	L3	THR	THR	X	X	X
Certhia americana	Brown Creeper	S5B	L4			X	X	X
Toxostoma rufum	Brown Thrasher	S4B	L3			X	X	X
Molothrus ater	Brown-headed Cowbird	S4B	L5			X	X	X, +
Branta canadensis	Canada Goose	S5	L5			X, +	X	X, +
Thryothorus ludovicianus	Carolina Wren	S4	L4			X		
Bombycilla cedrorum	Cedar Waxwing	S5B	L5			X	X, ☼	X
Setophaga pensylvanica	Chestnut-sided Warbler	S5B	L3			X	X	X
Chaetura pelagica	Chimney Swift	S4B,S4N	L4	THR	THR	X, +	X	X

Scientific name	Common name	S-Rank	TRCA L-Rank	ESA	SARA	2022 EPR Addendum Study Area Segment Associated with Report		
						1	2	3
Spizella passerina	Chipping Sparrow	S5B	L5			X	X	X
Petrochelidon pyrrhonota	Cliff Swallow	S4B	L5			X	X	X
Quiscalus quiscula	Common Grackle	S5B	L5			X, +	X	X, +
Chordeiles minor	Common Nighthawk	S4B	L3	SC	THR	X		
Geothlypis trichas	Common Yellowthroat	S5B	L4			X	X	X
Accipiter cooperii	Cooper's Hawk	S4	L4			X	X	X
Phalacrocorax auritus	Double-crested Cormorant	S5B	L3			+		
Picoides pubescens	Downy Woodpecker	S5	L5			X	X, ☼	X
Sialia sialis	Eastern Bluebird	S5B	L4			X		
Tyrannus tyrannus	Eastern Kingbird	S4B	L4			X	X	X, ☼, +
Sturnella magna	Eastern Meadowlark	S4B	L3	THR	THR	X	X	X
Sayornis phoebe	Eastern Phoebe	S5B	L5			X	X	X
Megascops asio	Eastern Screech-Owl	S4	L3			X	X	X
Pipilo erythrophthalmus	Eastern Towhee	S4B	L3			X	X	X
Contopus virens	Eastern Wood-Pewee	S4B	L4	SC	SC	X	X	X
Sturnus vulgaris	European Starling	SNA	L+			X, +	X	X, +
Spizella pusilla	Field Sparrow	S4B	L4			X	X	X
Anas strepera	Gadwall	S4	L4			X	X	X
Regulus satrapa	Golden-crowned Kinglet	S5B	L3			X	X	X
Dumetella carolinensis	Gray Catbird	S4B	L4			X, +	X, ☼, +	X
Ardea herodias	Great Blue Heron	S4	L3			+		
Myiarchus crinitus	Great Crested Flycatcher	S4B	L4			X	X	X
Bubo virginianus	Great Horned Owl	S4	L4			X	X	X
Butorides virescens	Green Heron	S4B	L4			X	X	X
Picoides villosus	Hairy Woodpecker	S5	L4			X	X	X
Lophodytes cucullatus	Hooded Merganser	S5B,S5N	L3			X		
Eremophila alpestris	Horned Lark	S5B	L3			X	X	X
Haemorhous mexicanus	House Finch	SNA	L+			X, +	X	X
Passer domesticus	House Sparrow	SNA	L+			X, +	X, ☼	X, +
Troglodytes aedon	House Wren	S5B	L5			X	X, +	X
Passerina cyanea	Indigo Bunting	S4B	L4			X	X	X
Charadrius vociferus	Killdeer	S5B,S5N	L4			X, +	X	X, +

Scientific name	Common name	S-Rank	TRCA L-Rank	ESA	SARA	2022 EPR Addendum Study Area Segment Associated with Report		
						1	2	3
Empidonax minimus	Least Flycatcher	S4B	L3			X	X	X
Asio otus	Long-eared Owl	S4	L3			X	X	X
Anas platyrhynchos	Mallard	S5	L5			X	X	X, +
Zenaida macroura	Mourning Dove	S5	L5			X, +	X	X, +
Geothlypis philadelphia	Mourning Warbler	S4B	L3			X	X	X
Oreothlypis ruficapilla	Nashville Warbler	S5B	L3			X	X	X
Cardinalis cardinalis	Northern Cardinal	S5	L5			X, +	X, ☼, +	X, +
Colaptes auratus	Northern Flicker	S4B	L4			X	X	X
Circus hudsonius	Northern Harrier	S4B	L2			X	X	X
Mimus polyglottos	Northern Mockingbird	S4	L4			X, +	X	X
Stelgidopteryx serripennis	Northern Rough-winged Swallow	S4B	L4			X	X	X, ☼, +
Parkesia noveboracensis	Northern Waterthrush	S5B	L3			X	X	X
Icterus spurius	Orchard Oriole	S4B	L5			X	X	X
Seiurus aurocapilla	Ovenbird	S4B	L2			X	X	X
Falco peregrinus	Peregrine Falcon	S3B	L4	SC		X		
Podilymbus podiceps	Pied-billed Grebe	S4B,S4N	L3			X	X	X
Dryocopus pileatus	Pileated Woodpecker	S5	L3			X	X	X
Setophaga pinus	Pine Warbler	S5B	L4			X	X	X
Progne subis	Purple Martin	S3S4B	L4			X		
Melanerpes carolinus	Red-bellied Woodpecker	S4	L5			X	X	X
Sitta canadensis	Red-breasted Nuthatch	S5	L4			X	X, ☼	X, +
Vireo olivaceus	Red-eyed Vireo	S5B	L4			X	X, ☼	X
Melanerpes erythrocephalus	Red-headed Woodpecker	S4B	L3	SC	THR	X	X	X
Buteo jamaicensis	Red-tailed Hawk	S5	L5			X, +	X, ☼	X
Agelaius phoeniceus	Red-winged Blackbird	S4	L5			X, +	X, +	X, +
Larus delawarensis	Ring-billed Gull	S5B,S4N	L4			+		
Phasianus colchicus	Ring-necked Pheasant	SNA	L+			X	X	X
Columba livia	Rock Pigeon	SNA	L+			X, +	X	X, +
Pheucticus ludovicianus	Rose-breasted Grosbeak	S4B	L4			X	X	X
Archilochus colubris	Ruby-throated Hummingbird	S5B	L4			X	X	X

Scientific name	Common name	S-Rank	TRCA L-Rank	ESA	SARA	2022 EPR Addendum Study Area Segment Associated with Report		
						1	2	3
Bonasa umbellus	Ruffed Grouse	S4	L2			X	X	X
Passerculus sandwichensis	Savannah Sparrow	S4B	L4			X	X	X, +
Piranga olivacea	Scarlet Tanager	S4B	L3			X	X	X
Accipiter striatus	Sharp-shinned Hawk	S5	L3			X	X	X
Melospiza melodia	Song Sparrow	S5B	L5			X, +	X, ☼	X, +
Porzana carolina	Sora	S4B	L3			X	X	X
Actitis macularius	Spotted Sandpiper	S5	L4			X	X	X
Melospiza georgiana	Swamp Sparrow	S5B	L4			X	X	X
Tachycineta bicolor	Tree Swallow	S4B	L4			X	X	X, +
Cathartes aura	Turkey Vulture	S5B	L5			X	X	X
Catharus fuscescens	Veery	S4B	L2			X	X	X
Pooecetes gramineus	Vesper Sparrow	S4B	L3			X	X	X
Vireo gilvus	Warbling Vireo	S5B	L5			X	X	X, +
Sitta carolinensis	White-breasted Nuthatch	S5	L4			X	X	X
Zonotrichia albicollis	White-throated Sparrow	S5B	L3			X	X	X
Empidonax traillii	Willow Flycatcher	S5B	L4			X	X	X, ☼, +
Gallinago delicata	Wilson's Snipe	S5B	L2			X		
Troglodytes hiemalis	Winter Wren	S5B	L3			X	X	X
Aix sponsa	Wood Duck	S5	L4			X	X	X
Hylocichla mustelina	Wood Thrush	S4B	L3	SC	THR	X	X	X
Setophaga petechia	Yellow Warbler	S5B	L5			X	X	X, +
Sphyrapicus varius	Yellow-bellied Sapsucker	S5B	L3			X	X	X
Vireo flavifrons	Yellow-throated Vireo	S4B	L3			X	X	X

Notes

The division of grid ID 17PJ24 and grid ID 17PJ25 is at the intersection of Yonge Street and Goulding Avenue (approximately 100 m south of Newton Drive). As such, Segment 1 is partially within grid ID 17PJ24 and partially within grid ID 17PJ25.

ESA: *Endangered Species Act, 2007;* SARA: *Species at Risk Act, 2002*

SC = Special Concern; THR = Threatened; END = Endangered

S-Rank: The Natural Heritage provincial ranking system (provincial S-rank) is used by the MNRF to set protection priorities for rare species and natural communities.

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

S2 - Rare throughout its range in the province;

S3 - Uncommon or vulnerable species;

S4 - Apparently Secure Species;

S5 - Secure Species;

B - Breeding;

N - Non-breeding

Toronto and Region Conservation Authority (TRCA) L-Rank as provided by TRCA's *Fauna Ranks and Scores for TRCA Jurisdiction, 2020*:

L1 = Species of Regional Conservation Concern, regionally scarce due to either accidental occurrence or extreme sensitivity to human impacts
L2 = Species of Regional Conservation Concern, somewhat more abundant and generally slightly less sensitive than L1 species
L3 = Species of Regional Conservation Concern, generally less sensitive and more abundant than L1 and L2 ranked species
L4 = Species of Urban Concern; occur throughout the region but could show declines if urban impacts are not mitigated effectively
L5 = species that are considered secure throughout the region
L+ = introduced species, not native to the Toronto region

Source

X = Species reported in *Ontario Breeding Bird Atlas* (BSC et al. 2008).
☼ = Species reported by TRCA 2000 through 2017.
+ = Species observed during OneT+ 2021 field investigations.

Appendix B: Table B-3 Herpetofauna Species Reported in the Vicinity of the YNSE Project Study Area

Scientific Name	Common Name	S-Rank	TRCA L-Rank	ESA	SARA	2022 EPR Addendum Study Area Segment Associated with Report		
						1	2	3
AMPHIBIANS (Frogs, Toads, and Salamanders)								
Anaxyrus americanus	American Toad	S5	L4			X	X	X
Plethodon cinereus	Eastern Red-backed Salamander	S5	L3			X	X	X
Hyla versicolor	Grey Treefrog	S5	L2			X	X	X
Lithobates clamitans	Green Frog	S5	L4			X	X, ☼	X
Lithobates pipiens	Northern Leopard Frog	S5	L3			X	X	X
Notophthalmus viridescens viridescens	Red-spotted Newt	S5	L2			X	X	X
Ambystoma maculatum	Spotted Salamander	S4	L1			X	X	X
Pseudacris crucifer	Spring Peeper	S5	L2			X	X	X
Lithobates sylvaticus	Wood Frog	S5	L2			X	X	X
REPTILES (Snakes, Lizards, and Turtles)								
Emydoidea blandingii	Blanding's Turtle	S3	L1	THR	THR	X		
Storeria dekayi	DeKay's Brownsnake	S5	L4			X	X	X
Thamnophis sirtalis sirtalis	Eastern Gartersnake	S5	L4			X	X	X
Chrysemys picta marginata	Midland Painted Turtle	S4	L3			X	X	X
Lampropeltis triangulum	Eastern Milksnake	S4	L3		SC	X	X	X
Graptemys geographica	Northern Map Turtle	S3	L2	SC	SC	X	X	X
Trachemys scripta	Pond Slider	SNA	L+			X	X	X
Storeria occipitomaculata	Red-bellied Snake	S5	L3			X	X	X
Chelydra serpentina	Snapping Turtle	S4	L3	SC	SC	X	X	X

Notes

The division of grid ID 17PJ24 and grid ID 17PJ25 is at the intersection of Yonge Street and Goulding Avenue (approximately 100m south of Newton Drive). As such, Segment 1 is partially within grid ID 17PJ24 and partially within grid ID 17PJ25.

Only those species reported within the last 20 years (i.e., since 2000) are included in the findings above.

S-Rank: The Natural Heritage provincial ranking system (provincial S-rank) is used by the MNRF to set protection priorities for rare species and natural communities.

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

S3 - Uncommon or vulnerable species;

S4 - Apparently Secure Species;

S5 - Secure Species.

Toronto and Region Conservation Authority (TRCA) L-Rank as provided by TRCA's *Fauna Ranks and Scores for TRCA Jurisdiction, 2020*:

L1 = Species of Regional Conservation Concern, regionally scarce due to either accidental occurrence or extreme sensitivity to human impacts

L2 = Species of Regional Conservation Concern, somewhat more abundant and generally slightly less sensitive than L1 species

L3 = Species of Regional Conservation Concern, generally less sensitive and more abundant than L1 and L2 ranked species

L4 = Species of Urban Concern; occur throughout the region but could show declines if urban impacts are not mitigated effectively
L+ = introduced species, not native to the Toronto region
ESA: *Endangered Species Act, 2007;* SARA: *Species at Risk Act, 2002*
SC = Special Concern; THR = Threatened
Source
X = Species reported in *Ontario Reptile and Amphibian Atlas* (Ontario Nature 2020). Data accessed via datasets imported into GIS.
☼ = Species reported by TRCA 2000 through 2017.

Appendix B: Table B-4 Butterfly Species Reported in the Vicinity of the YNSE Project Study Area in the *Ontario Butterfly Atlas*

Scientific Name	Common Name	S-Rank	ESA	SARA	2022 EPR Addendum Study Area Segment Associated with Report	
					Segment 1 (Grid ID 17PJ24 & 17PJ25)	Segments 2 & 3 (Grid ID 17PJ25)
Satyrium acadica	Acadian Hairstreak	S4			X	
Vanessa virginiensis	American Lady	S5			X	X
Speyeria aphrodite	Aphrodite Fritillary	S5			X	
Lethe appalachia	Appalachian Brown	S4			X	
Celastrina sp.	Azure sp.	-			X	X
Euphydryas phaeton	Baltimore Checkerspot	S4			X	X
Satyrium calanus	Banded Hairstreak	S4			X	
Papilio polyxenes	Black Swallowtail	S5			X	X
Poanes viator	Broad-winged Skipper	S4			X	
Lycaena hyllus	Bronze Copper	S5			X	
Pieris rapae	Cabbage White	SNA			X	X
Papilio canadensis	Canadian Tiger Swallowtail	S5			X	
Colias philodice	Clouded Sulphur	S5			X	X
Phoebis sennae	Cloudless Sulphur	SNA			X	
Junonia coenia	Common Buckeye	SNA			X	X
Coenonympha tullia	Common Ringlet	S5			X	X
Cercyonis pegala	Common Wood-Nymph	S5			X	X
Nymphalis l-album	Compton Tortoiseshell	S5			X	X
Satyrium titus	Coral Hairstreak	S5			X	
Polites origenes	Crossline Skipper	S4			X	
Euphyes dion	Dion Skipper	S4			X	
Erynnis icelus	Dreamy Duskywing	S5			X	
Euphyes vestris	Dun Skipper	S5			X	X
Erora laeta	Early Hairstreak	S2			X	
Polygonia comma	Eastern Comma	S5			X	X
Cupido comyntas	Eastern Tailed Blue	S5			X	X
Papilio glaucus	Eastern Tiger Swallowtail	S5			X	X
Satyrium edwardsii	Edwards' Hairstreak	S4			X	

Scientific Name	Common Name	S-Rank	ESA	SARA	2022 EPR Addendum Study Area Segment Associated with Report	
					Segment 1 (Grid ID 17PJ24 & 17PJ25)	Segments 2 & 3 (Grid ID 17PJ25)
Polyommatus icarus	European Common Blue	SNA			X	X
Thymelicus lineola	European Skipper	SNA			X	X
Lethe eurydice	Eyed Brown	S5			X	
Hylephila phyleus	Fiery Skipper	SNA			X	
Polygonia progne	Gray Comma	S5			X	X
Speyeria cybele	Great Spangled Fritillary	S5			X	
Satyrium caryaevorus	Hickory Hairstreak	S4			X	
Poanes hobomok	Hobomok Skipper	S5			X	
Hesperia sassacus	Indian Skipper	S4			X	
Erynnis juvenalis	Juvenal's Duskywing	S5			X	
Ancyloxypha numitor	Least Skipper	S5			X	X
Hesperia leonardus	Leonard's Skipper	S4			X	
Pompeius verna	Little Glassywing	S4			X	
Megisto cymela	Little Wood-Satyr	S5			X	X
Pyrisitia lisa	Little Yellow	SNA			X	X
Polites mystic	Long Dash Skipper	S5			X	
Boloria bellona	Meadow Fritillary	S5			X	
Papilio canadensis X glaucus	Midsummer Tiger Swallowtail	#N/A			X	
Aglais milberti	Milbert's Tortoiseshell	S5			X	
Danaus plexippus	Monarch	S2N,S4B	SC	SC	X	X
Nymphalis antiopa	Mourning Cloak	S5			X	X
Pieris oleracea	Mustard White	S4			X	
Celastrina lucia	Northern Spring Azure	S5			X	X
Wallengrenia egeremet	Northern Broken-Dash	S5			X	
Thorybes pylades	Northern Cloudywing	S5			X	
Phyciodes cocyta	Northern Crescent	S5			X	X
Lethe anthedon	Northern Pearly-Eye	S5			X	
Colias eurytheme	Orange Sulphur	S5			X	X
Vanessa cardui	Painted Lady	S5			X	X
Phyciodes tharos	Pearl Crescent	S4			X	X

Scientific Name	Common Name	S-Rank	ESA	SARA	2022 EPR Addendum Study Area Segment Associated with Report	
					Segment 1 (Grid ID 17PJ24 & 17PJ25)	Segments 2 & 3 (Grid ID 17PJ25)
Polites peckius	Peck's Skipper	S5			X	X
Battus philenor	Pipevine Swallowtail	SNA			X	
Polygonia interrogationis	Question Mark	S5			X	X
Vanessa atalanta	Red Admiral	S5			X	X
Limenitis arthemis astyanax	Red-spotted Purple	S5			X	
Epargyreus clarus	Silver-spotted Skipper	S4			X	X
Glaucopsyche lygdamus	Silvery Blue	S5			X	X
Satyrium liparops	Striped Hairstreak	S5			X	
Polites themistocles	Tawny-edged Skipper	S5			X	X
Euphyes bimacula	Two-spotted Skipper	S4			X	
Limenitis archippus	Viceroy	S5			X	X
Limenitis arthemis arthemis	White Admiral	S5			X	
Erynnis baptisiae	Wild Indigo Duskywing	S4			X	X

Notes

The division of grid ID 17PJ24 and grid ID 17PJ25 is at the intersection of Yonge Street and Goulding Avenue (approximately 100m south of Newton Drive). As such, Segment 1 is partially within grid ID 17PJ24 and partially within grid ID 17PJ25.

Only those species reported within the last 20 years (i.e., since 2000) are included in the findings above.

The Toronto and Region Conservation Authority (TRCA) *Fauna Ranks and Scores for TRCA Jurisdiction, 2020* does not include L-Ranks for butterfly species.

S-Rank: The Natural Heritage provincial ranking system (provincial S-rank) is used by the MNRF to set protection priorities for rare species and natural communities.

SNA - Not applicable because the species is not a suitable target for conservation activities
S2 - Rare throughout its range in the province
S4 - Apparently Secure Species
S5 - Secure Species
B - Breeding
N - Non-breeding

ESA: *Endangered Species Act, 2007;* SARA: *Species at Risk Act, 2002*

SC = Special Concern

Source

Ontario Butterfly Atlas (TEA 2018).

Appendix B: Table B-5 Mammal Species Reported in the Vicinity of the YNSE Project Study Area

Scientific Name	Common Name	S-Rank	TRCA L-Rank	ESA	SARA	2022 EPR Addendum Study Area Segment Associated with Observation		
						1	2	3
Ursus americanus	American Black Bear	S5	-			X	X	X
Eptesicus fuscus	Big Brown Bat	S4	L4			C	C	C
Sorex cinereus	Common Shrew	S5	L3			H		
Canis latrans	Coyote	S5	L5			X	X	X
Peromyscus maniculatus	Deer Mouse	S5	L5			H		
Tamias striatus	Eastern Chipmunk	S5	L4			X	X	X
Sylvilagus floridanus	Eastern Cottontail	S5	L4			X	X	X, +
Lasiurus borealis	Eastern Red Bat	S4	LX			C	C	C
Sciurus carolinensis	Grey Squirrel	S5	L5			X, +	X, +, ☼	X, +
Parascalops breweri	Hairy-tailed Mole	S4	L3			H		
Lasiurus cinereus	Hoary Bat	S4	LX			C	C	C
Mus musculus	House Mouse	SNA	L+			X	X	X
Myotis lucifugus	Little Brown Myotis	S4	L4	END	END	C	C	C
Mustela frenata	Long-tailed Weasel	S4	L3			H		
Zapus hudsonius	Meadow Jumping Mouse	S5	L3			H	P?	P?
Microtus pennsylvanicus	Meadow Vole	S5	L5			X	X	X
Mustela vison	Mink	S4	L4			X	X	X
Ondatra zibethicus	Muskrat	S5	L4			X	X	X
Glaucomys sabrinus	Northern Flying Squirrel	S5	L2			H?	H?	H?
Myotis septentrionalis	Northern Long-eared Myotis	S3	-	END	END	C	C	C
Blarina brevicauda	Northern Short-tailed Shrew	S5	L3			H	H?	H?
Rattus norvegicus	Norway Rat	SNA	L+			X	X	X
Erethizon dorsatum	Porcupine	S5	L2			X	X	X
Procyon lotor	Raccoon	S5	L5			X	X	X
Vulpes vulpes	Red Fox	S5	L4			X	X	X
Tamiasciurus hudsonicus	Red Squirrel	S5	L4			X	X	X, +
Lasionycteris noctivagans	Silver-haired Bat	S4	-			C	C	C
Sorex fumeus	Smoky Shrew	S5	-			H		
Mephitis mephitis	Striped Skunk	S5	L5			X	X	X
Peromyscus leucopus	White-footed Mouse	S5	L4			X	X	X

Scientific Name	Common Name	S-Rank	TRCA L-Rank	ESA	SARA	2022 EPR Addendum Study Area Segment Associated with Observation		
						1	2	3
Odocoileus virginianus	White-tailed Deer	S5	L4					☼
Marmota monax	Woodchuck	S5	L4			X	X	X

Notes

The division of grid ID 17PJ24 and grid ID 17PJ25 is at the intersection of Yonge Street and Goulding Avenue (approximately 100m south of Newton Drive). As such, Segment 1 is partially within grid ID 17PJ24 and partially within grid ID 17PJ25.

As the *Atlas of the Mammals of Ontario* was published in 1994 some species ranges may be historic due to recent development and urbanization. Records are assigned to the square that is most likely the origin of the record. Findings have been identified by the following notation:

X = 1970 to 1993 (as reported by Dobbyn 1994)
H = 1900 to 1969 (as reported by Dobbyn 1994)
P = Pre-1900 (as reported by Dobbyn 1994)
? = Indicates that a mammal record can't be pinpointed to a single square (as reported by Dobbyn 1994).

S-Rank: The Natural Heritage provincial ranking system (provincial S-rank) is used by the MNRF to set protection priorities for rare species and natural communities.

S3 - Uncommon or vulnerable species
S4 - Apparently Secure Species
S5 - Secure Species

Toronto and Region Conservation Authority (TRCA) L-Rank:

L1 = Species of Regional Conservation Concern, regionally scarce due to either accidental occurrence or extreme sensitivity to human impacts
L2 = Species of Regional Conservation Concern, somewhat more abundant and generally slightly less sensitive than L1 species
L3 = Species of Regional Conservation Concern, generally less sensitive and more abundant than L1 and L2 ranked species
L4 = Species of Urban Concern; occur throughout the region but could show declines if urban impacts are not mitigated effectively
L5 = species that are considered secure throughout the region
L+ = introduced species, not native to the Toronto region
LX = extirpated species; species not recorded in the region in the past 10 years
- = L-Rank not assigned

ESA: *Endangered Species Act, 2007;* SARA: *Species at Risk Act, 2002*
SC = Special Concern; THR = Threatened; END = Endangered

Source

X, H, P, ? = Species reported in *Atlas of the Mammals of Ontario* (Dobbyn 1994).
☼ = Species reported by TRCA 2000 through 2017.
C = Bat Conservation International species profiles – approximate range (BCI 2020).
+ = Species observed during OneT+ 2021 field investigations.

Appendix B: Table B-6 Fish Species Reported within the East Don River, Pomona Creek and German Mills Creek in the Vicinity of the YNSE Project Study Area

SCIENTIFIC NAME	COMMON NAME	S-RANK	ESA	SARA	Most Recent Reported Capture Date and Location		
					Don River East Branch (Segment 2) [1,2]	Pomona Creek (Segment 2) [1,2,4]	German Mills Creek (Segment 3) [2,3,4]
Rhinichthys atratulus	Blacknose Dace	S5			2019	1984, 2019	2005, 2019
Notropis heterolepis	Blacknose Shiner	S5				2019	
Lepomis macrochirus	Bluegill	S5					2001
Pimephales notatus	Bluntnose Minnow	S5			2005		2003
Hybognathus hankinsoni	Brassy Minnow	S5			1996		
Culaea inconstans	Brook Stickleback	S5			2003	1984	
Salmo trutta	Brown Trout	SNA			2019		
Luxilus cornutus	Common Shiner	S5			1997	1984	1985
Semotilus atromaculatus	Creek Chub	S5			2019	1984, 2019	2005, 2019
Etheostoma sp.	Darter sp.	-			2002		
Pimephales promelas	Fathead Minnow	S5			2019	1984	2005, 2019
Carassius auratus	Goldfish	SNA			1991		2005, 2019
Etheostoma nigrum	Johnny Darter	S5			2019	1984	2005
Rhinichthys cataractae	Longnose Dace	S5			2019		2005
Cottus bairdi	Mottled Sculpin	S5			2005	2005	1998, 2019
Hypentelium nigricans	Northern Hog Sucker	S4			1983		
Phoxinus eos	Northern Redbelly Dace	S5			1992	1984, 2019	1949
Lepomis gibbosus	Pumpkinseed	S5			2019	1984	2003, 2019
Etheostoma caeruleum	Rainbow Darter	S4			1949		1949
Oncorhynchus mykiss	Rainbow Trout	SNA			2005		
Cottus sp.	Sculpin sp.	-			1991		
Catostomus commersoni	White Sucker	S5			2019	1984, 2019	2005

Notes

Due to the historic nature of these data, for simplicity, only the most recent capture dates are reported in the findings above.

The 2019 Watershed Fish Data (with weights) from Toronto and Region Conservation Authority (TRCA) was reviewed for all creeks; however, fish data was only available for the East Don River.

The TRCA *Fauna Ranks and Scores for TRCA Jurisdiction, 2020* does not include L-Ranks for aquatic species.

S-Rank: The Natural Heritage provincial ranking system (provincial S-rank) is used by the MNRF to set protection priorities for rare species and natural communities.

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

S2 - Rare throughout its range in the province

S4 - Apparently Secure Species

S5 - Secure Species

ESA: *Endangered Species Act, 2007;* SARA: *Species at Risk Act, 2002*
END = Endangered

Source

[1] *Yonge Subway Extension Conceptual Design and Functional Planning Study: Natural Environment Report (Ecoplans Ltd. 2009).*
[2] *2019 Watershed Fish Data (with weights) (Toronto and Region Conservation. 2019).*
[3] *Don River Watershed Plan: Aquatic System – Report on Current Conditions (Toronto and Region Conservation. 2009).*
[4] MNDMNRF GeoHub LIO ARA (2020)

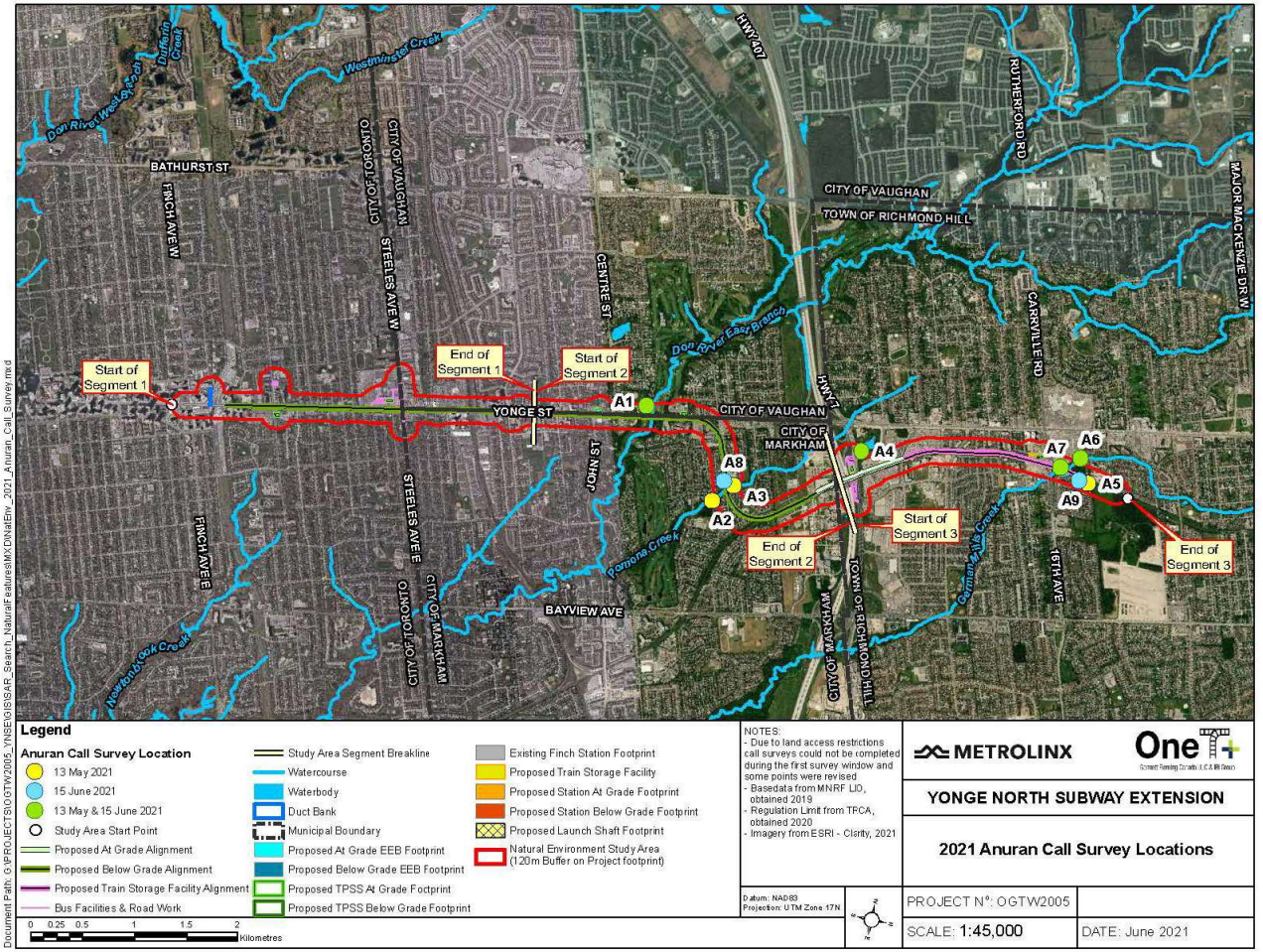


Figure C-1: 2021 Anuran Call Survey Locations

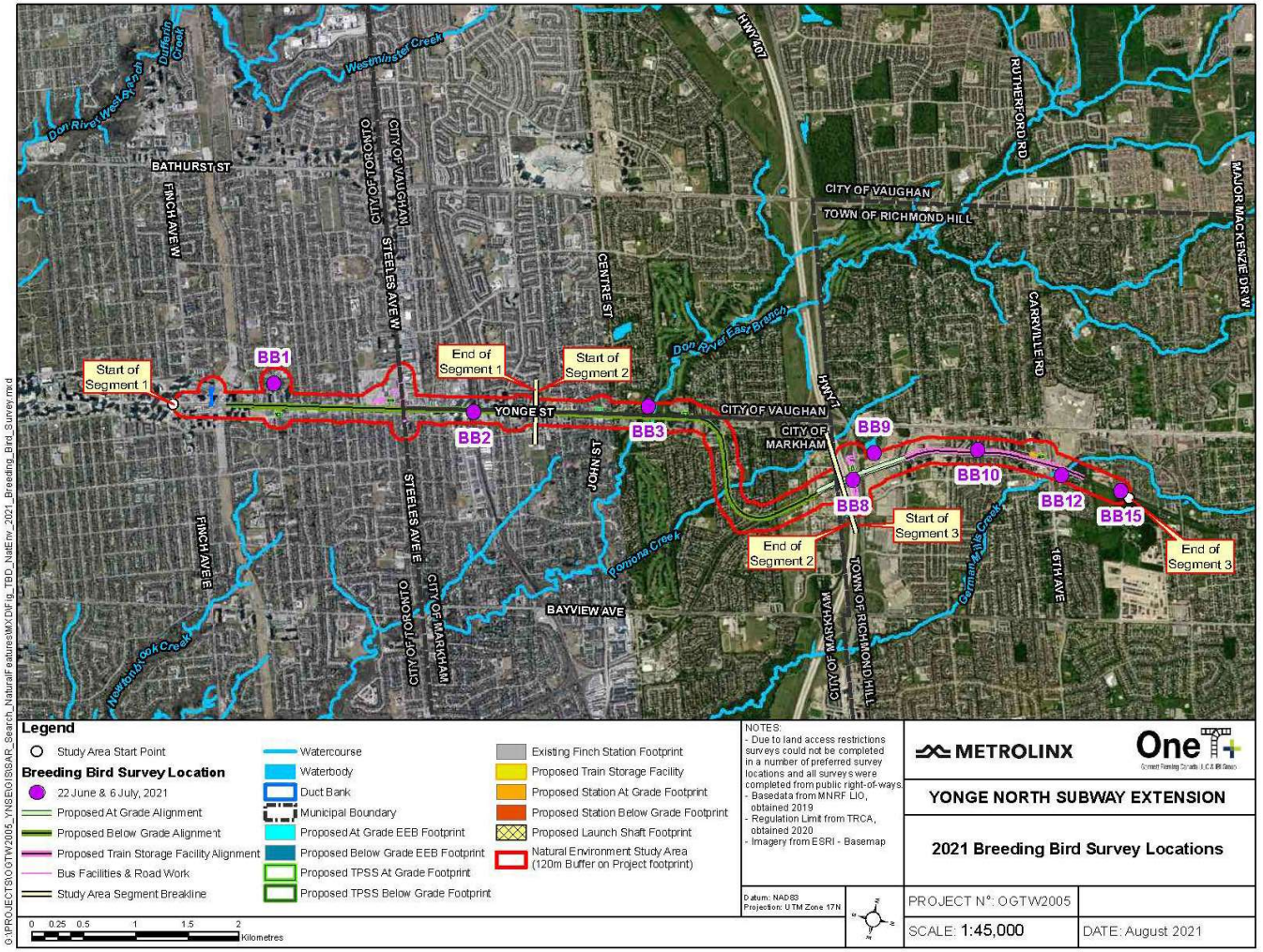


Figure C-2: 2021 Breeding Bird Locations

PART B - YNSE EPR ADDENDUM IMPACT ASSESSEMENT REPORT

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

APPENDICES

B 1.0 Purpose

The purpose of Part B of this report is to document the Natural Environment impact assessment that was carried out as part of the Yonge North Subway Extension (YNSE) EPR Addendum, including identification of potential effects, a description of proposed mitigation measures and monitoring activities.

B 2.0 Methodology

The Natural Environment existing conditions information, presented in Part A of this report, was used as the basis from which the potential effects (positive and negative) of constructing, operating, and maintaining the Project were identified.

A four-step process was followed to assess potential impacts associated with the Project and to identify mitigation measures and monitoring activities (as required):

- Step 1 – Identify potential impacts resulting from the construction and operation of the Project;
- Step 2 – Establish mitigation measures to eliminate or reduce potential adverse effects, as well as monitoring activities to verify and validate that mitigation measures are functioning effectively;
- Step 3 – Carry out consultation with stakeholders/regulatory authorities; update impact assessment results and/or proposed mitigation and monitoring measures as appropriate; and
- Step 4 – Document impact assessment results.

For the purposes of differentiating the various types of potential environmental impacts associated with the Project, impacts were characterized and grouped in **Table B 2-1**.

Table B 2-1: Characterization of Potential Impacts

Construction Impacts	Potential temporary effects (e.g., disruption/disturbance) on existing Study Area features or receptors due to construction activities associated with the Project (e.g., construction of new tracks, tunnelling, storage facility, bridge modifications, etc.).
Operations and Maintenance Impacts	Potential permanent effects on existing Study Area features (i.e., displacement or removal) or receptors due to operations and/or maintenance activities associated with the Project (e.g., operation of the new subway system/trains, operation of train storage facility, etc.).

B 3.0 Impact Assessment

Potential impacts to the natural environment as a result of disturbances associated with the YNSE Study Area have been assessed and are presented within **Table B 4-1** which also includes suggested mitigation measures and monitoring activities. Impact assessment results are further described in **Sections B 3.1** through **Sections B 3.3**.

B 3.1 Segment 1 – Finch Station to Clark Station

Figure 1 through Figure 11 in Appendix D provides an overview of the infrastructure proposed within this segment.

B 3.1.1 Natural Heritage Features

Potential Impacts

Natural heritage features within Segment 1 have been identified in Section A 3.3.1. The only identified natural heritage feature is a narrow belt of woodland along the rail corridor at the north end of the segment (**Figure B 3-1 - Figure B 3-3**). This woodland is a narrow band of trees with limited natural heritage significance. Direct impacts to this feature are not anticipated.

Mitigation Measures and Monitoring

Mitigation measures and associated monitoring recommended for Project work around natural heritage features can be found in **Table B 4-1**.

B 3.1.2 Vegetation and Vegetation Communities

Potential Impacts

Information relating to existing vegetation and vegetation communities in Segment 1 has been identified in Section A 3.3.3 with three ELC communities identified**.** Very limited natural vegetation cover is present in this segment. Impacts to vegetation are primarily associated with the proposed bus loop on Drewry Avenue (**Figure B 3-1**). Project construction activities in other areas of Segment 1 are not expected to disturb vegetation communities, though removal of individual trees (e.g., street trees) may occur. Other potential impacts may include damage of vegetation adjacent to construction areas as a result of accidental intrusion, introduction of invasive species, increased erosion and sedimentation, and soil contamination as a result of spills (e.g., fuel) from equipment use. Several species of locally uncommon or rare plants have been previously identified in this segment, but all are either species typical of heavily disturbed areas or likely present only due to plantings, and as such significant negative impacts are not anticipated.

Work on the proposed bus loop on Drewry Avenue will likely require removal of some areas of existing natural vegetation. Other at grade and below grade works are expected to have minimal impact on vegetation. With respect to Project activities within identified vegetation communities, the proposed areas of vegetation removal (based on the engineering design) will be quantified during detailed design.

Mitigation Measures and Monitoring

Mitigation measures and associated monitoring recommended for Project work around trees, vegetation, and vegetation communities can be found in **Table B 4-1**. If wildlife and/or wildlife habitat, including but not limited to SAR and bird nests, are observed during construction, mitigation measures and monitoring should be followed, as

applicable. Compensation and/or replanting of vegetation to compensate for all removals of trees is to be completed in accordance with the Metrolinx's Vegetation Guideline (2020), as amended from time to time.

B 3.1.3 Wildlife and Wildlife Habitat

Potential Impacts

Information about existing wildlife and wildlife habitat in Segment 1 has been identified in Section A 3.3.3. No significant wildlife habitats (SWH) have been identified in this area or determined to be potentially present. The construction of the YNSE may have direct and indirect impacts on existing wildlife and wildlife habitat, as outlined in **Table B 4-1**. Due to the highly urbanized nature of Segment 1, wildlife that may be present includes species commonly found in urban environments, such as raccoon, skunks, grey squirrel and red squirrel, and wildlife habitat is very limited. Nevertheless, wildlife may be injured or displaced as a result of construction activities.

The potential impacts listed above are relevant to both non-SAR and SAR wildlife. For SAR-specific potential impacts, refer to **Section B 3.1.6.**

Mitigation Measures and Monitoring

Mitigation measures and associated monitoring recommended for Project work around existing wildlife and wildlife habitat can be found in **Table B 4-1**. If SAR wildlife and/or SAR habitat are confirmed present during the future phases of the Project (i.e., detailed design or construction), the mitigation measures and monitoring recommended should be followed, as applicable.

B 3.1.4 Surface Water

Potential Impacts

There is no surface water within or adjacent to Segment 1, and as such no impacts to surface water are expected in this segment.

Mitigation Measures and Monitoring

As no impacts are expected, no mitigation measures or monitoring are required.

B 3.1.5 Fish and Fish Habitat

Potential Impacts

There is no fish habitat within or adjacent to Segment 1, and as such no impacts are expected.

Mitigation Measures and Monitoring

As no impacts are expected, no mitigation measures or monitoring are required.

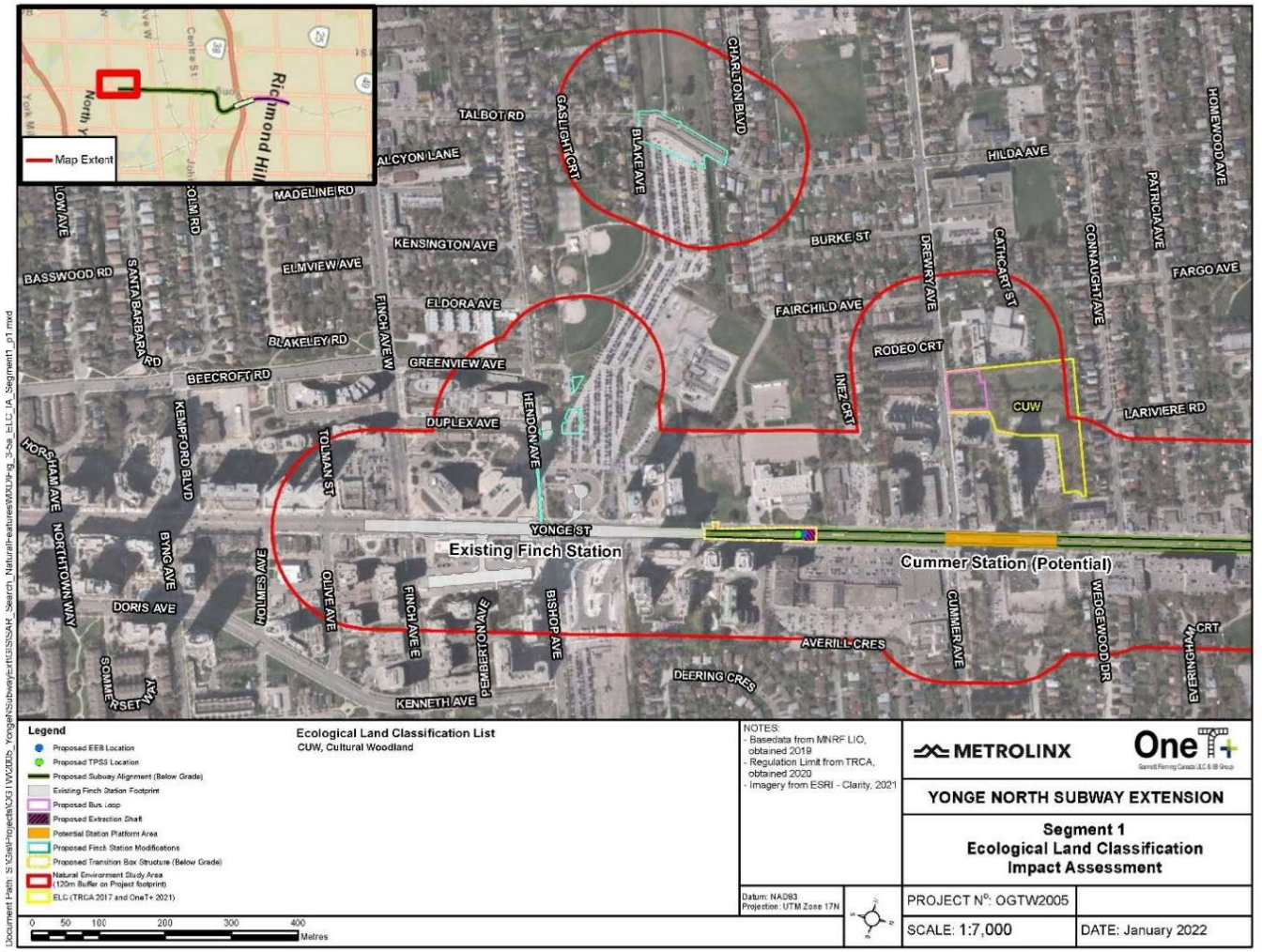


Figure B 3-1: Segment 1 Natural Environment ELC Impact Assessment

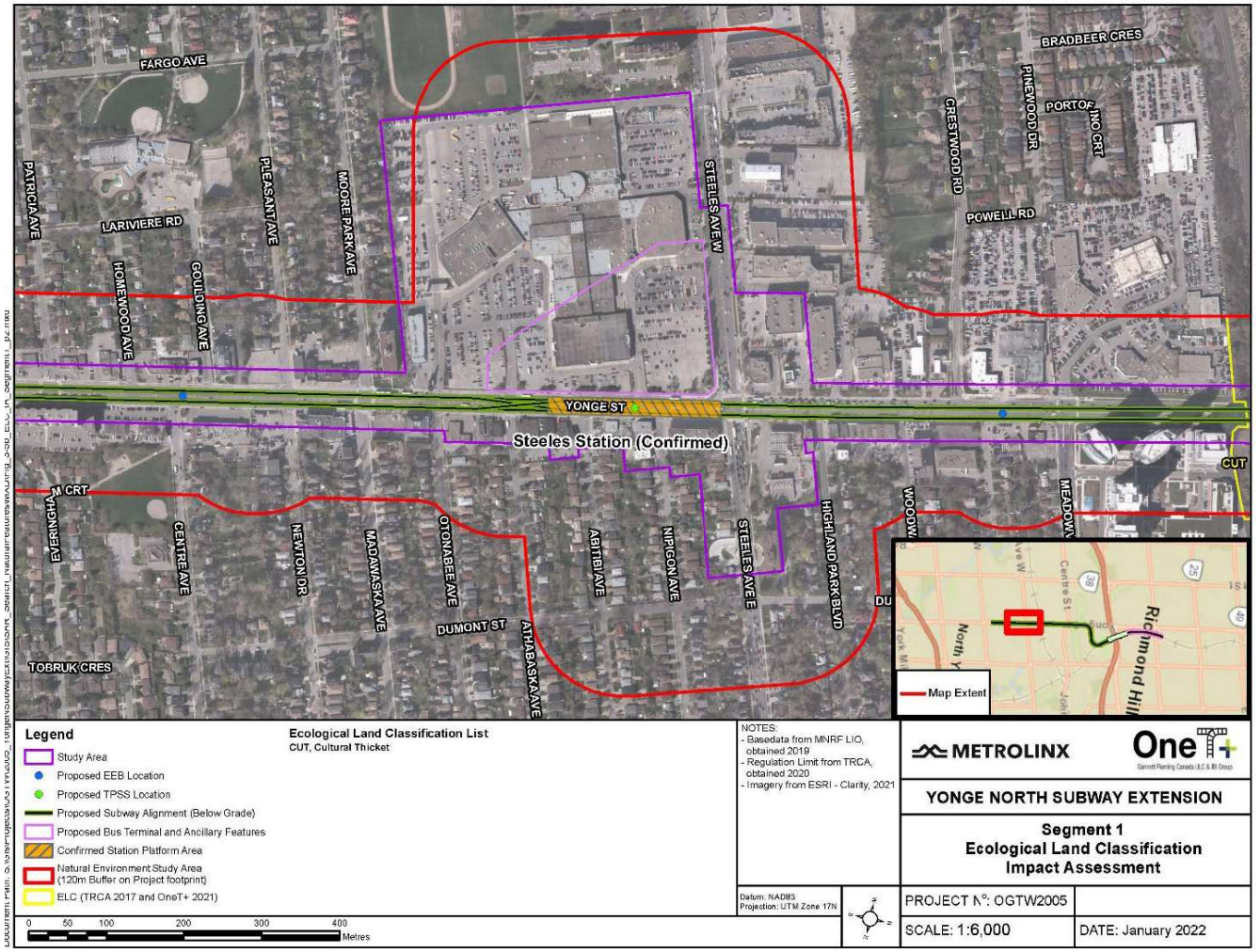


Figure B 3-2: Segment 1 Natural Environment ELC Impact Assessment

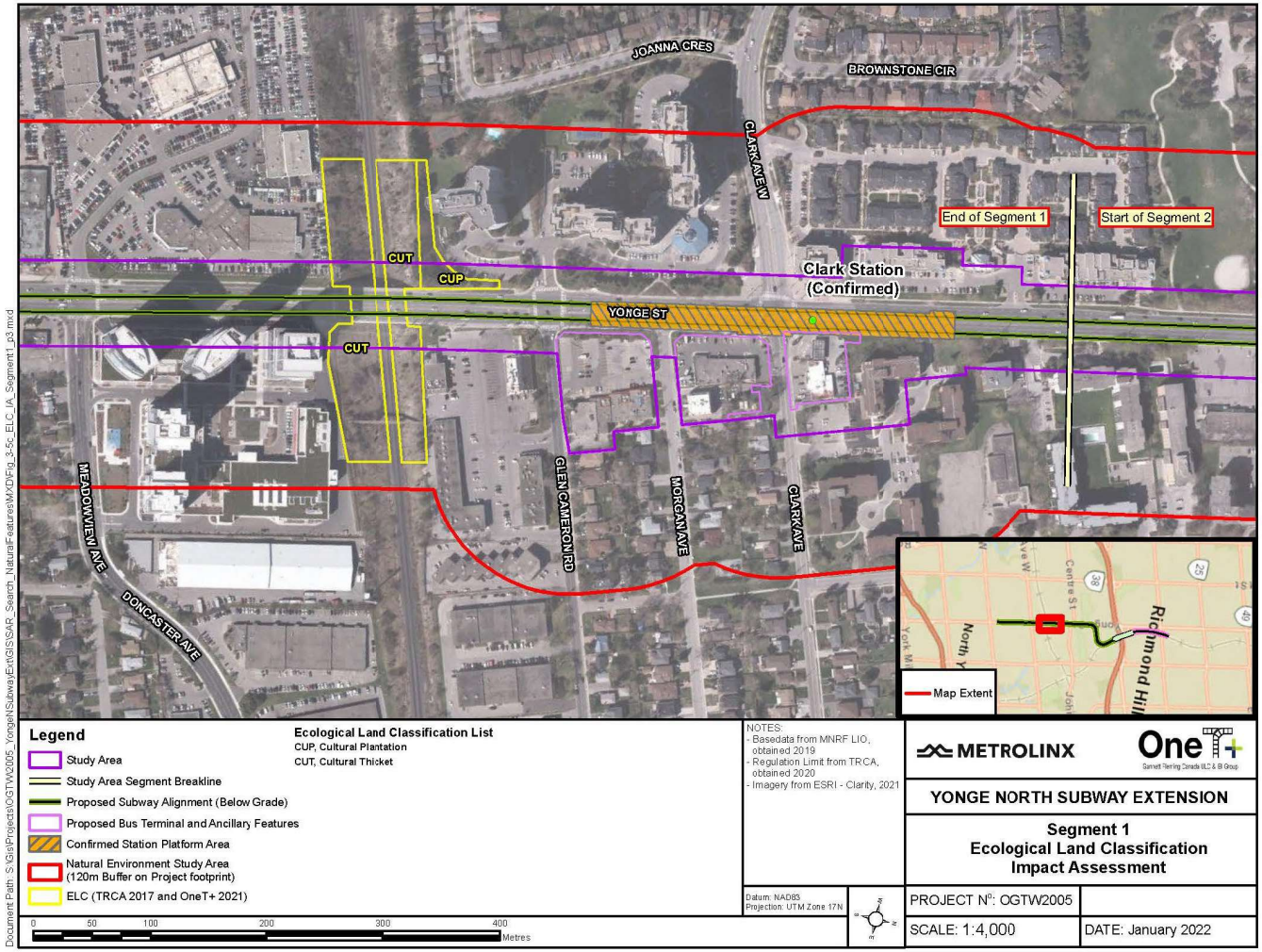


Figure B 3-3: Segment 1 Natural Environment ELC Impact Assessment

B 3.1.6 Species at Risk

Potential Impacts

One (1) SAR and its habitat is confirmed present and four (4) other SAR have a moderate or high potential to occur within the SAR Desktop Study Area in Segment 1, details can be found in Section A 3.3.6. Potential impacts to these species are outlined below.

- Barn Swallow is not known to nest in this segment of the Project Study Area but has the potential to make use of any existing or newly created structures in and around the existing natural areas associated with the proposed bus loop on Drewry Avenue. If nests are present, but not identified ahead of disturbance-causing activities there may be negative impacts on this species.
- Chimney Swift was confirmed present and nesting in a chimney within Segment 1. This species is tolerant of urban environments, and as such, it is not anticipated that construction activities will result in modification or removal of the nesting site.
- SAR bats have the potential to occur in existing trees/vegetation communities. Within Segment 1, potential bat SAR habitat is most likely to occur in the natural habitats in the vicinity of the proposed bus loop on Drewry Avenue. Further surveys to confirm presence of SAR bat habitat will be conducted in bat-suitable vegetation communities, subject to the requirements of the ESA.

Mitigation Measures and Monitoring

Mitigation measures and associated monitoring recommended for Project work around SAR and SAR habitat can be found in Table B 4-1.

B 3.2 Segment 2 – Clark Station to Portal/Launch Shaft

Figure 11 through Figure 22 in Appendix D provide an overview of the infrastructure proposed within this segment.

B 3.2.1 Natural Heritage Features

Potential Impacts

Natural heritage features within Segment 2 have been identified in Section A 3.4.1. With the exception of a small at grade portion of Royal Orchard Station, Project works in the vicinity of the identified natural heritage features are below grade, and the potential for impacts is low (**Figure B 3-4** – **Figure B 3-5**). Potential impacts may include damage or disturbance of vegetation communities, introduction/spread of invasive species, contamination via accidental spills (e.g., fuel), increased erosion and sedimentation. Please see **Table B 4-1** for further details. In general, impacts to the natural heritage features are anticipated to be minimal, and potentially negligible, as limited work will occur at grade. Below-grade work occurring under/in vicinity of the Don River East and Pomona Creek is not anticipated to impact these features.

Scattered areas of York Region Woodland are located throughout Segment 2 and Project activities may be subject to limited vegetation removal. The TRCA regulated areas located south of Centre Street are generally thought to offer low

quality habitat and have been largely altered by human development. Coupled with limited anticipated vegetation removal, impacts in these areas are anticipated to be low.

Mitigation Measures and Monitoring

Mitigation measures and associated monitoring recommended for Project work around Natural Heritage Features can be found in **Table B 4-1**.

B 3.2.2 Vegetation and Vegetation Communities

Potential Impacts

Information about vegetation and vegetation communities in Segment 2 have been identified in Section A 3.4.2 with 38 ELC communities identified. No rare vegetation communities have been identified in this segment or determined to be potentially present. However, Red Pine and White Spruce were recorded in Segment 2 and are species of regional conservation concern but are likely only present due to plantings. As such, large-scale negative impacts are not anticipated. The trees located in the Project footprint could still be impacted through cutting, tree / root injury, or intrusion on a tree protection zone. Other potential impacts may include damage of vegetation adjacent to construction areas as a result of accidental intrusion, introduction of invasive species, increased erosion and sedimentation, and soil contamination as a result of spills (e.g., fuel) from equipment use.

Due to the disturbed nature, and generally low-quality vegetation communities that have been heavily influenced by human development located within Segment 2, impacts to vegetation are anticipated to be low.

With respect to Project activities within identified vegetation communities, the areas of vegetation removal (based on the engineering design) will be quantified during detailed design.

Mitigation Measures and Monitoring

Mitigation measures and associated monitoring recommended for Project work around trees, vegetation, and vegetation communities can be found in **Table B 4-1.** Compensation and/or replanting of vegetation to compensate for all removals of trees will be completed in accordance with Metrolinx's Vegetation Guideline (2020), as amended from time to time.

B 3.2.3 Wildlife and Wildlife Habitat

Potential Impacts

Information about existing wildlife and wildlife habitat in Segment 2 have been identified in **Section A 3.4.3**. No SWH have been identified in this area or determined to be potentially present.

Four (4) L4 species (i.e., of urban concern) Gray Catbird, Red-breasted Nuthatch, Red-eyed Vireo, and Green Frog were documented in Segment 2. These species, and their nests/habitats could be present throughout Segment 2 and mitigation measures for wildlife should be followed.

Construction activities may result in disturbance/displacement and/or mortality of wildlife, as well as wildlife habitat disturbance or removal. As above grade construction in Segment 2 is not anticipated to be extensive, no substantial impacts to wildlife and wildlife habitat are anticipated.

Mitigation measures and monitoring have been recommended to avoid, and/or reduce impacts to the existing wildlife and wildlife habitat, as outlined in **Table B 4-1.**

Mitigation Measures and Monitoring

Mitigation measures and associated monitoring recommended for Project work around existing wildlife and wildlife habitat can be found in **Table B 4-1**. If SAR wildlife and/or SAR habitat are confirmed present during future phases of the Project (i.e., detailed design or construction), the mitigation measures and monitoring recommended for Species at Risk should also be followed, as applicable.

B 3.2.4 Surface Water

Potential Impacts

Surface water features located within Segment 2 include the Don River East Branch and Pomona Creek as well as underground crossings of Yonge Street where flows are piped through culverts that extend beyond the Yonge Street ROW (see Section A 3.4.4. As Project works in the vicinity of these watercourses are primarily below grade, the potential for impacts to these features is low. The Don River East Branch is located within a naturalized watershed and therefore could be sensitive to potential impacts to the surface water and riparian vegetation community. Pomona Creek is located within a more urbanized landscape, which could reduce its sensitivity to temporary Project works. However, at grade works are not proposed in the vicinity of Pomona Creek.

Mitigation Measures and Monitoring

Mitigation measures and associated monitoring recommended for Project work around surface water features can be found in **Table B 4-1**.

B 3.2.5 Fish and Fish Habitat

Potential Impacts

Fish Habitat in Segment 2 is limited to the Don River East Branch and Pomona Creek. The fish community data for these watercourses is presented in Section A 3.4.5. As Project works in the vicinity of these watercourses are primarily below grade, the potential for impacts to these features is low. Although not anticipated, in-water construction activities could result in negative impacts to fish and fish habitat (e.g., harmful alteration of fish habitat), and appropriate mitigation measures are to be followed to eliminate or reduce the potential impacts.

Alterations to riparian vegetation can also have a negative impact to fish and fish habitat. The Don River East Branch provides habitat for diverse species of both coldwater and warmwater fish, and Pomona Creek is classified as coldwater, making them potentially sensitive to impacts from runoff, effluents, sedimentation, and alterations to riparian habitats. Notwithstanding, as Project works in the vicinity of these watercourses are primarily below grade, the potential for impacts to these features is low.

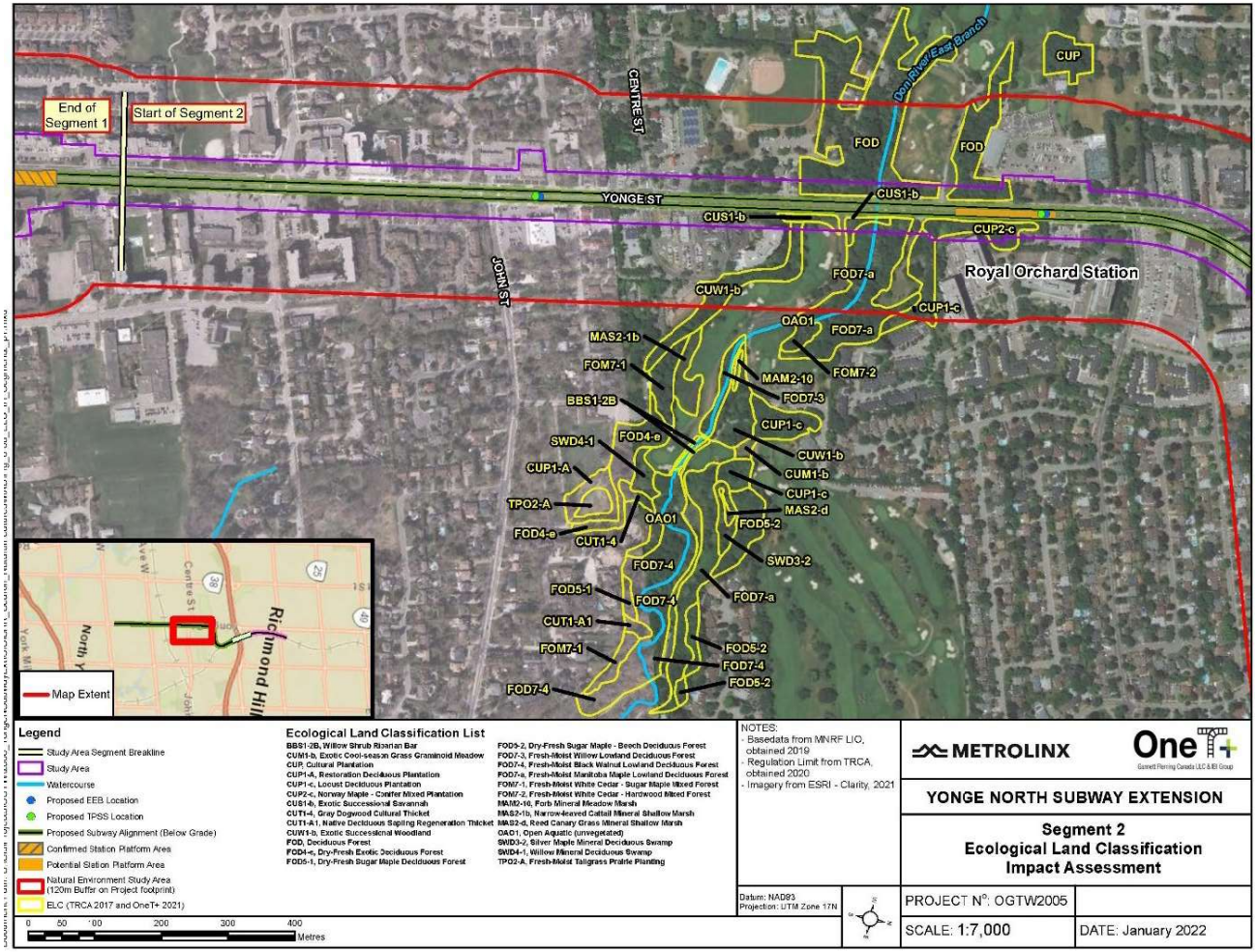


Figure B 3-4: Segment 2 Natural Environment ELC Impact Assessment

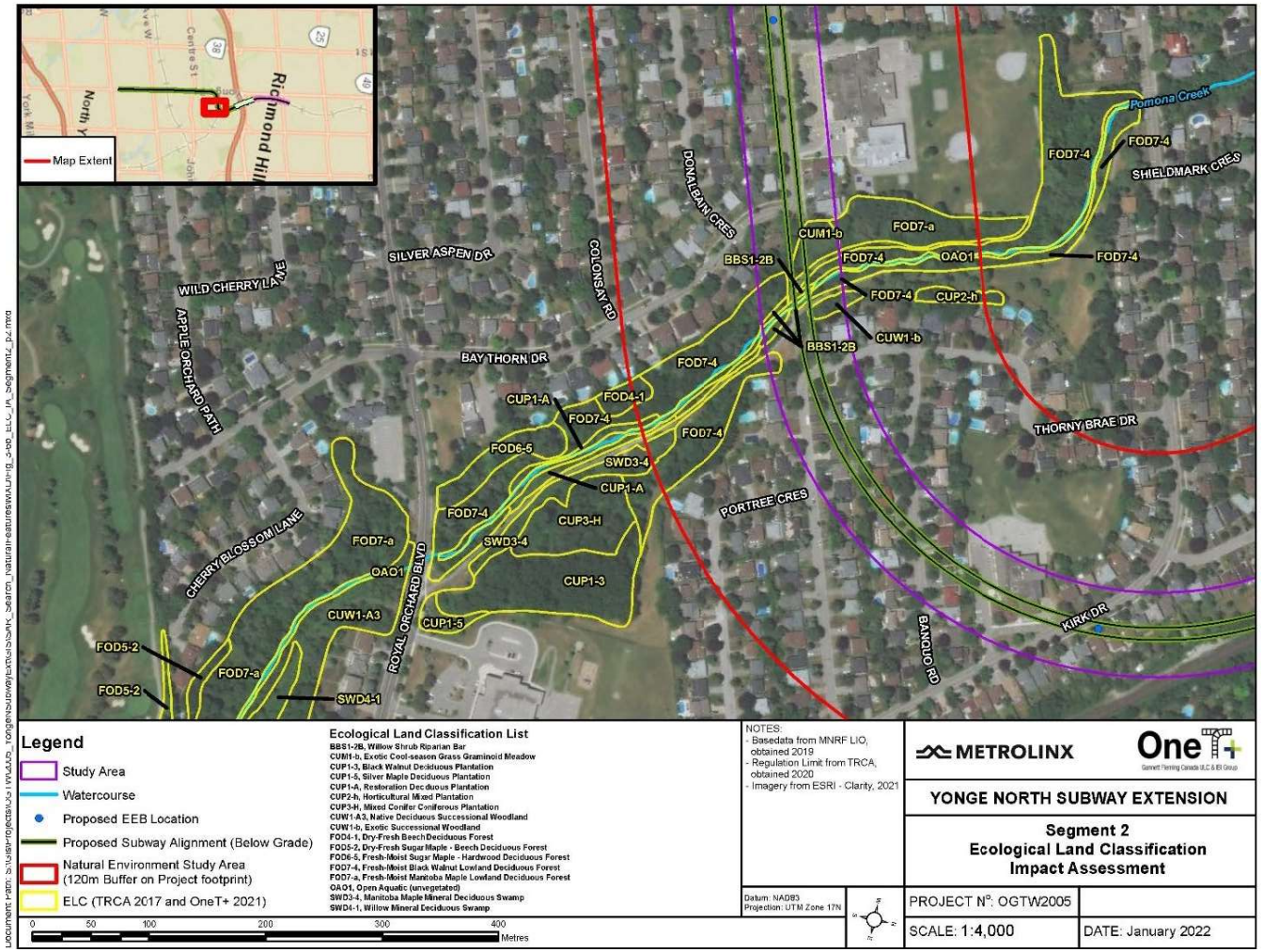


Figure B 3-5: Segment 2 Natural Environment ELC Impact Assessment

Mitigation Measures and Monitoring

Mitigation measures and associated monitoring recommended for Project work around fish and fish habitat can be found in **Table B 4-1**.

B 3.2.6 Species at Risk

Potential Impacts

One (1) SAR is confirmed present and five (5) other SAR have a moderate or high potential to occur within the SAR Desktop Study Area in Segment 2, details can be found in Section A 3.4.6. Potential impacts to these species are outlined below. In addition to the specific issues outlined below, the general impacts to vegetation and wildlife as discussed in the previous sections generally apply to plant and animal SAR, respectively.

- Barn Swallow records have been confirmed within this segment. This species has the potential to make use of any existing or newly created structures in and around the existing natural areas. Structures associated with the Don River East Branch and Pomona Creek watercourse crossings (bridges, culverts, etc.) could provide suitable nesting habitat. To avoid negative impacts on this species, surveys of structures constituting potentially suitable nesting habitat should be conducted and installation of exclusion measures if required, ahead of disturbance-causing activities.
- Chimney Swift records suggest that it is possible this species may be nesting in or on buildings in the SAR Desktop Study Area; however, it is not anticipated that construction activities in Segment 2 will result in modification or removal of any such buildings. This species range widely for foraging and are unlikely to be affected by construction activities beyond any impacts to nesting sites.
- SAR bats have the potential to occur in existing trees/vegetation communities. Potentially suitable bat SAR habitat is most likely to occur in the natural habitats associated with the Don River East Branch and Pomona Creek watersheds and the designated York Region Woodlands. Further surveys to confirm presence of SAR bat habitat will be conducted in bat-suitable vegetation communities, subject to the requirements of the ESA.

Mitigation Measures and Monitoring

Mitigation measures and associated monitoring recommended for Project work around SAR and SAR habitat can be found in **Table B 4-1**.

B 3.3 Segment 3 – Portal/Launch Shaft to Moonlight Lane

Figure 22 through Figure 30 in Appendix D provides an overview of the infrastructure proposed within this segment.

B 3.3.1 Natural Heritage Features

Potential Impacts

Within Segment 3 natural heritage features, as described in Section A 3.5.1, primarily occur in the areas surrounding German Mills Creek and at the extreme northern end of the Study Area (the significant woodland), but also near the Bridge Station north of the 407 ETR and within hedgerow features on the east side of the corridor. The TRCA regulated area encompasses German Mills Creek and in outlying sections further from the watercourse is thought to be low quality and largely altered by human development (**Figure B 3-6, Figure B 3-7, Figure B 3-8** and **Figure B 3-9**).

Features which may be impacted by at grade works include:

- The significant woodland;
- The York Region Woodland;
- TRCA Regulated areas at German Mills Creek;
- The York Region Greenland System; and
- The City of Richmond Hill Natural Core.

Construction-related potential impacts to natural features may include damage or disturbance of vegetation communities, introduction/spread of invasive species, contamination via accidental spills (e.g., fuel), increased erosion and sedimentation. Please see **Table B 4-1** for further details.

Potential for impacts to the significant functions of the significant woodland is low. This woodlot is primarily significant due to its size, which will be minimally reduced if at all by project activities. The woodlot is already heavily disturbed and modified and indirect effects are not expected to change its ecological functions.

Mitigation Measures and Monitoring

Mitigation measures and associated monitoring recommended for Project work around Natural Heritage Features can be found in **Table B 4-1**.

B 3.3.2 Vegetation and Vegetation Communities

Potential Impacts

Information about vegetation and vegetation communities in Segment 3 have been identified in Section A 3.5.2. Several locally rare plants have been recorded in Segment 3 including the SAR Butternut (see Appendix A). Butternut is an Endangered species in Ontario and potential impacts, mitigation measures and monitoring are discussed further in **Section B 3.3.6**. The Project design is not anticipated to result in removal of the recorded Butternut tree. No rare vegetation communities have been previously identified in this Segment. Project construction activities have the potential to disturb and/or destroy plants, trees and vegetation communities located throughout Segment 3 in areas where work is planned. Due to the disturbed nature, and generally low-quality vegetation communities that have been heavily influenced by human development located within Segment 3, impacts to vegetation are anticipated to be low. However, construction activities occurring within the naturalized areas associated with the proposed Bus terminal north of 407 ETR, German Mills Creek crossing, and York Region Woodlands north of the German Mills Creek crossing have potential to disturb and/or destroy native trees and vegetation communities. Vegetation removal occurring within the German Mills Creek TRCA regulated area also has the potential to increase erosion and sediment movement during precipitation and flooding events.

With respect to Project activities, the proposed areas of vegetation removal (based on the engineering design) will be quantified during detailed design.

Mitigation Measures and Monitoring

Mitigation measures and associated monitoring recommended for Project work around trees, vegetation and vegetation communities can be found in **Table B 4-1**. Compensation and/or replanting of vegetation to compensate for tree removals will follow Metrolinx's Vegetation Guideline (2020), as amended from time to time.

B 3.3.3 Wildlife and Wildlife Habitat

Potential Impacts

Known information about existing wildlife and wildlife habitat in Segment 3 have been identified in Section A 3.5.3. No SWH have been identified in this area or determined to be potentially present. The construction of the YNSE may have impacts on general wildlife, such as wildlife habitat removal or disturbance, and wildlife displacement or mortality. It is important to note that the existing wildlife and wildlife habitat associated with the Study Area are already susceptible to disturbance activities that arise from adjacent urbanized landscape. Mitigation measures will be implemented to reduce and/or avoid potential Project-specific negative impacts.

Mitigation Measures and Monitoring

Mitigation measures and associated monitoring recommended for Project work around existing wildlife and wildlife habitat can be found in **Table B 4-1**. If SAR wildlife and/or habitat are confirmed present during the SAR species-specific surveys during future phases of the Project where such surveys are required, the mitigation measures and monitoring recommended for the SAR species should also be followed, as applicable.

B 3.3.4 Surface Water

Potential Impacts

German Mills Creek is present within Segment 3 (see Section A 3.5.4 for more details). At grade Project works in Segment 3 such as the German Mills Creek crossing culvert replacement have the potential to impact the watercourse. Without mitigation, in- or near-water construction activities such as use of industrial equipment may cause impacts such as increased potential for erosion and sedimentation and introduction of deleterious substances as result of accidental spills. Potential impacts should be avoided and/or minimized by implementing appropriate mitigation measures and monitoring activities.

Mitigation Measures and Monitoring

Mitigation measures and associated monitoring recommended for Project work around surface water features can be found in **Table B 4-1**.

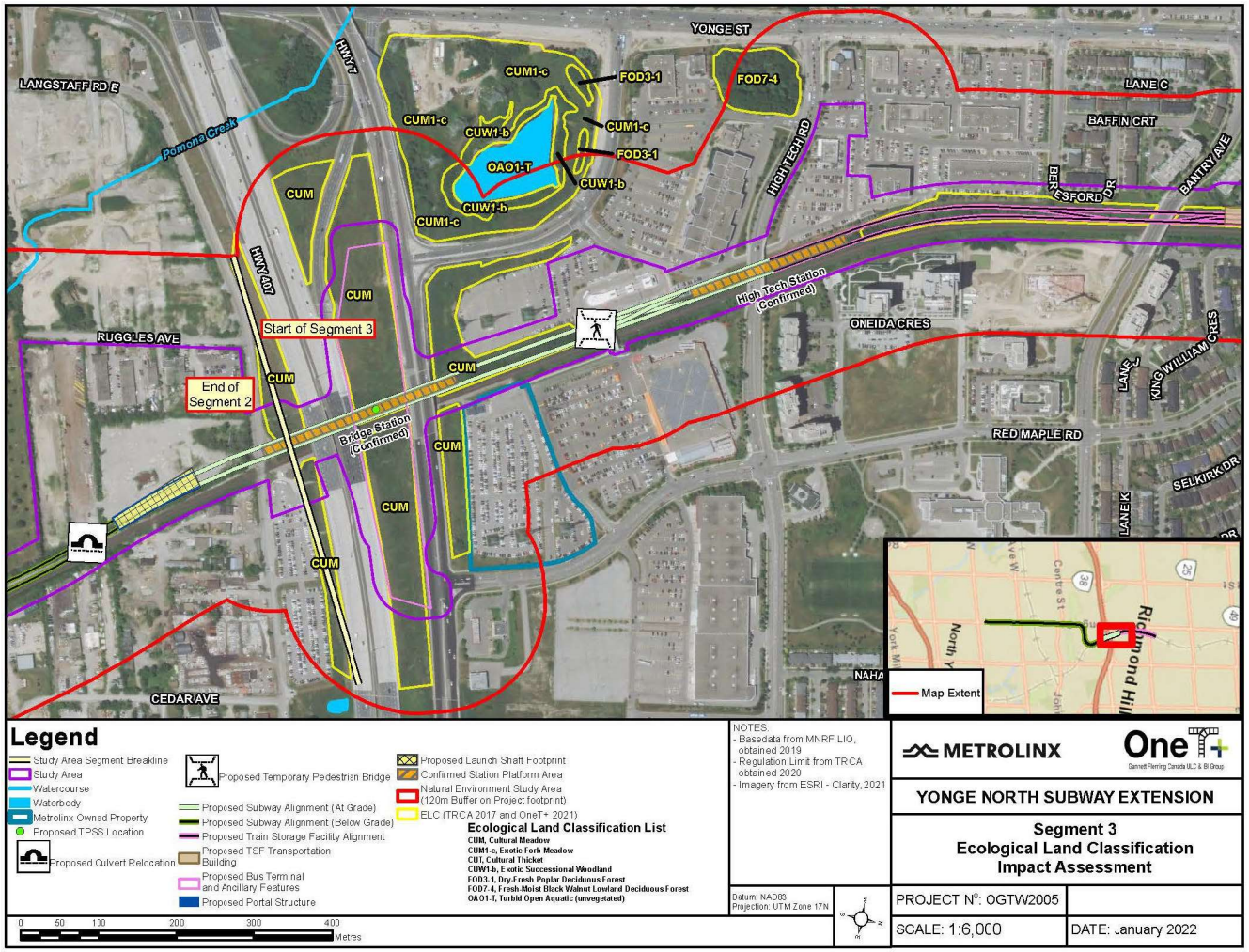


Figure B 3-6: Segment 3 Natural Environment ELC Impact Assessment

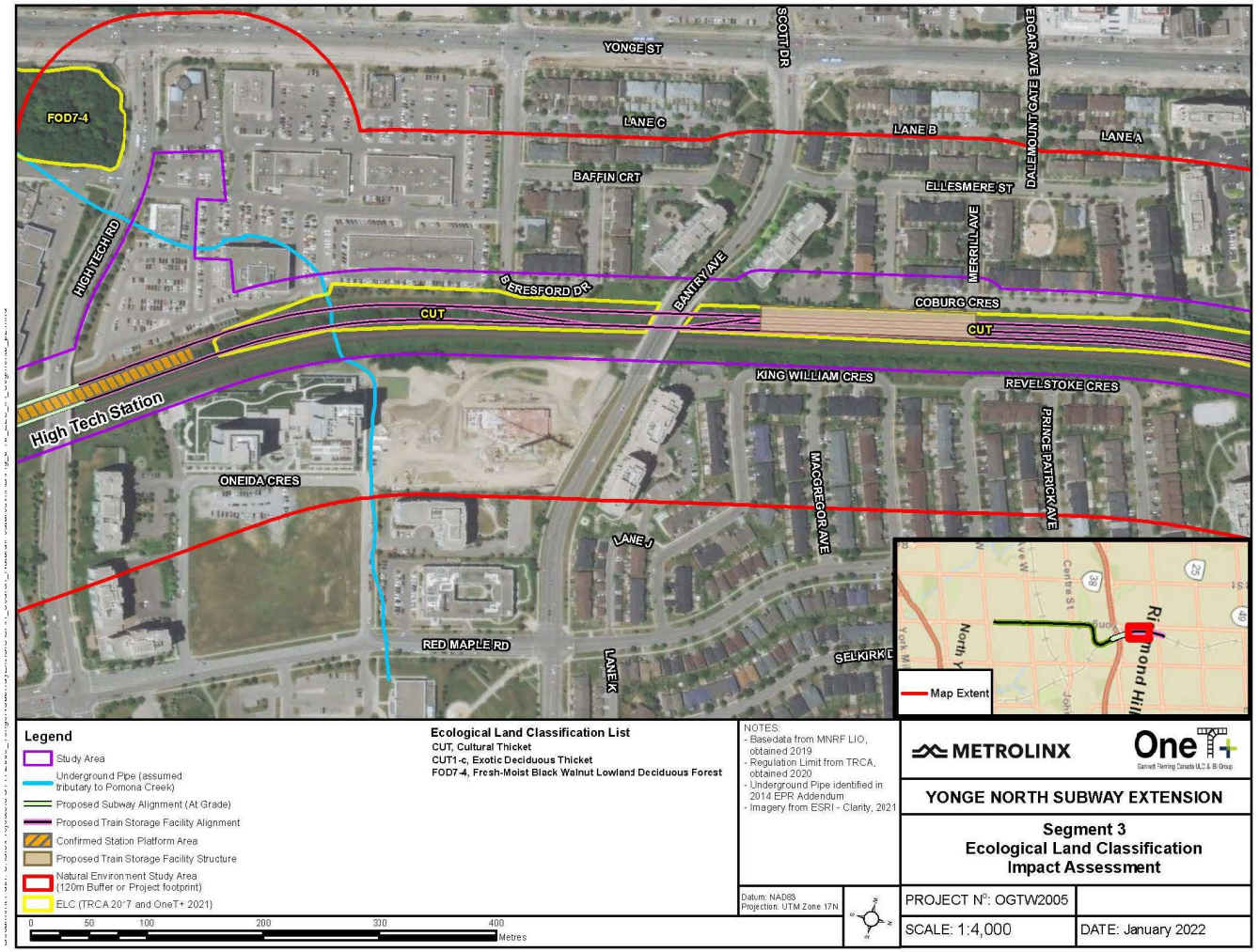


Figure B 3-7: Segment 3 Natural Environment ELC Impact Assessment

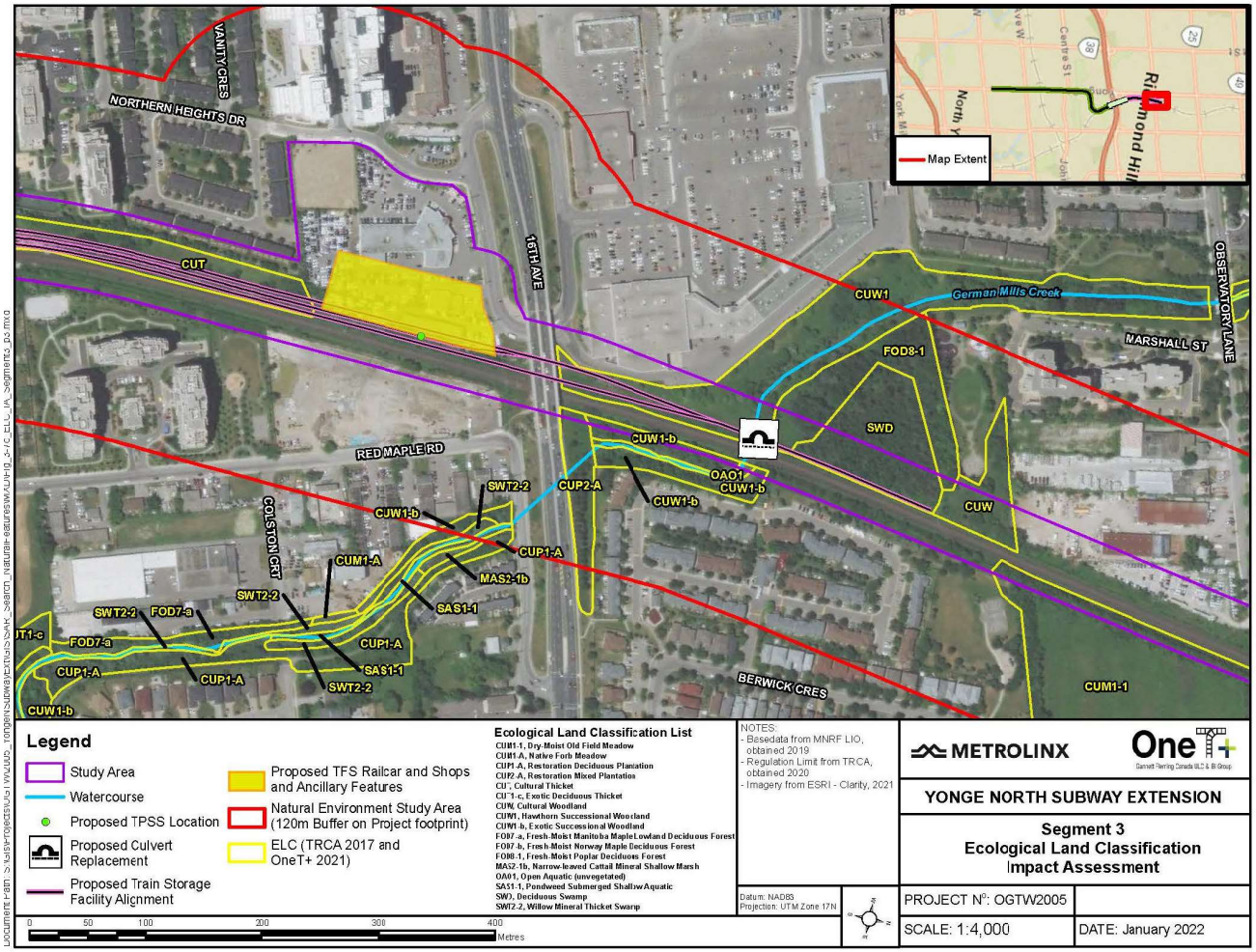


Figure B 3-8: Segment 3 Natural Environment ELC Impact Assessment

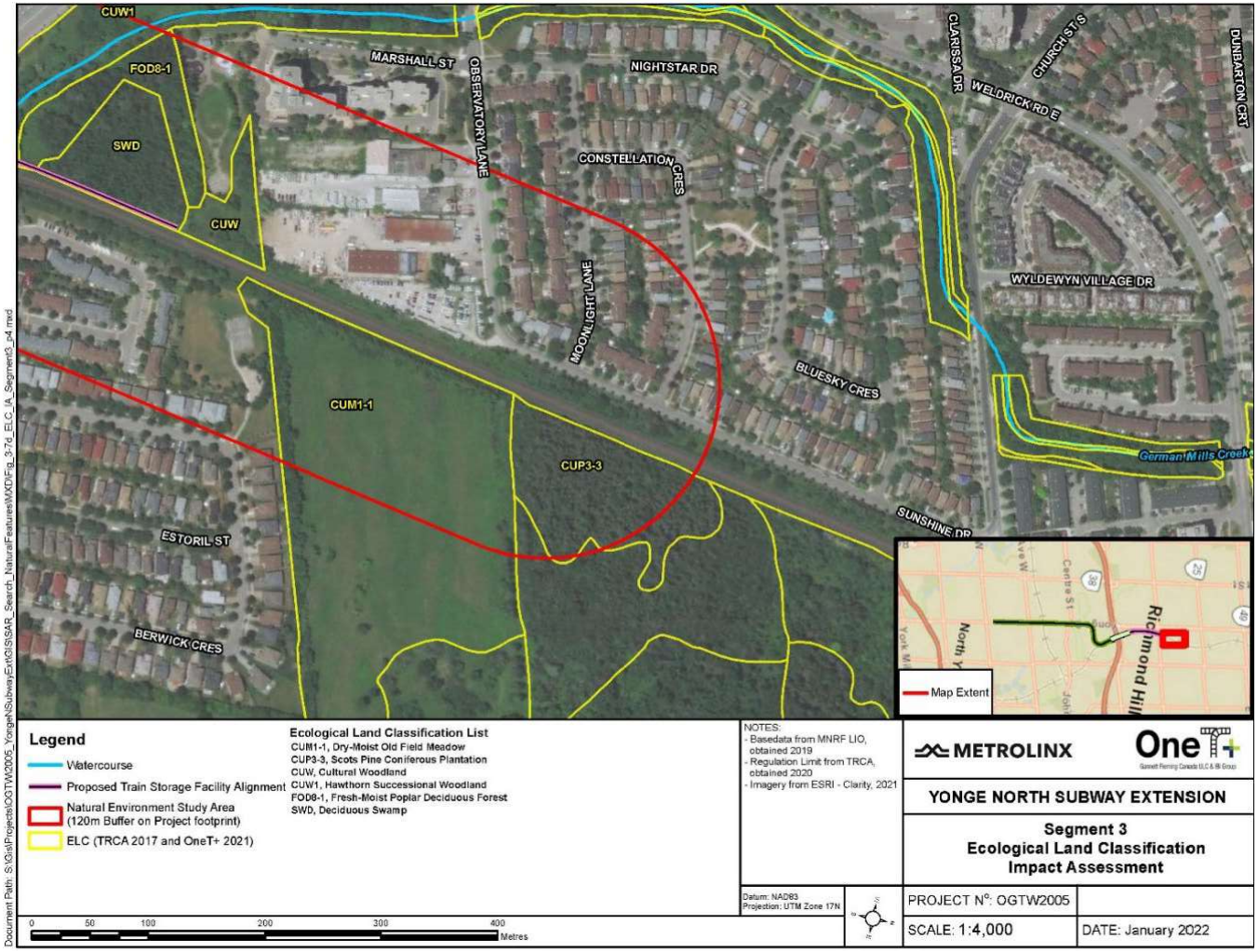


Figure B 3-9: Segment 3 Natural Environment ELC Impact Assessment

B 3.3.5 Fish and Fish Habitat

Potential Impacts

Fish Habitat within Segment 3 is limited to German Mills Creek. The existing fish habitat and background information regarding the fish community within German Mills Creek is presented in Section A 3.5.5. Construction near German Mills Creek involves the replacement of the existing culvert. Without mitigation, construction activities occurring near or within the watercourses and/or at the watercourse crossing could have negative impacts to fish and fish habitat, such as harmful alteration of fish habitat. Potential impacts can be avoided or reduced via implementation of appropriate mitigation measures and monitoring activities.

Mitigation Measures and Monitoring

Mitigation measures and associated monitoring recommended for Project work around fish and fish habitat can be found in **Table B 4-1**.

B 3.3.6 Species at Risk

Potential Impacts

A total of two (2) SAR are confirmed present and five (5) other SAR have a moderate or high potential to occur within the SAR Desktop Study Area in Segment 3, as outlined in Section A 3.5.6.

- Barn Swallow was observed to be foraging in Segment 3. Barn Swallow is not known to nest in the Project Study Area but has the potential to make use of any existing or newly created structures in and around the existing natural areas associated with the proposed bus terminal north of the 407 ETR, Bridge Station, High Tech Station, TSF and the German Mills Creek crossing. If such nests are not identified and adequately protected prior to construction activities that may impact confirmed nesting habitat, there may be negative impacts on this species. This species was observed foraging during 2021 field investigations.
- Chimney Swift records suggest that it is possible this species may be nesting in or on buildings in the SAR Desktop Study Area; however, it is not anticipated that construction activities in Segment 3 will result in modification or removal of any such buildings. This species range widely for foraging and are unlikely to be affected by construction activities beyond any impacts to nesting sites.
- SAR Bats have the potential to occur in existing trees/vegetation communities. Potentially suitable SAR bat habitat is most likely to occur in the natural habitats in the vicinity of German Mills Creek, and the proposed bus terminal north of 407 ETR. Further surveys to confirm presence of SAR bat habitat will be conducted in bat-suitable vegetation communities, subject to the requirements of the ESA.
- Butternut is present within the SAR Desktop Study Area and has the potential to be present in the natural areas associated with the proposed TSF, the German Mills Creek crossing, and the proposed bus terminal north of 407 ETR. Any construction activities occurring in the vicinity of existing trees may result in the removal or damage of Butternuts. Identification of all tree species will be completed as part of arborist studies and reporting to confirm presence / absence of this species.

Mitigation Measures and Monitoring

Mitigation measures and associated monitoring recommended for Project work around SAR and SAR habitat can be found in **Table B 4-1**.

B 4.0 Summary of Potential Impacts, Mitigation Measures and Monitoring Activities

Table B 4-1 outlines the potential Natural Environment effects, mitigation measures and monitoring activities associated with the Project.

Table B 4-1: Summary of Natural Environment Mitigation Measures and Monitoring Requirements

Project Phase	Environmental Components	Potential Impacts	Mitigation Measures	Monitoring Activities
CONSTRUCTION	• **Natural Heritage Features**	• Disturbance or destruction to natural heritage features.	• Prepare an Erosion and Sediment Control Plan (ESC Plan), in accordance with the Erosion and Sediment Control Guide for Urban Construction (TRCA 2019), as amended from time to time. • Implement the ESC Plan during construction and maintain all ESC measures for the duration of construction to reduce the risk of erosion and sedimentation. • Develop a Spill Prevention and Response Plan. Implement the Spill Prevention and Response Plan for the duration of construction. Spills will be immediately contained and cleaned up in accordance with provincial regulatory requirements and this Plan. • Establish barriers (e.g., silt fencing around the perimeter of the site) to clearly delineate the construction areas and prevent accidental damage or intrusion to adjacent vegetation or vegetation communities. Maintain the barriers during construction. • Ensure that machinery arrives on site in a clean condition (free of fluid leaks, invasive species, and noxious weeds) and will be handled in accordance with the Clean Equipment Protocol for Industry (Halloran et al, 2013). • Reduce the size of construction areas, including staging and laydown areas and construction access, to the extent feasible. • Stockpiled materials or equipment will be stored within the construction areas but shall be kept at least 30 m away from any wetland or watercourse to the extent feasible. If not feasible, install a heavy-duty silt fence and Silt Soxx (or equivalent) around the construction areas where within 30 m from a watercourse.	• On-site inspection should be undertaken to confirm the implementation and efficacy of mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts. • All erosion and sediment control measures should be inspected weekly, after every rainfall event and significant snow melt event, and daily during periods of extended rain or snow melt. • All damaged erosion and sediment control measures will be repaired and/or replaced within 48 hours of the inspection.
	• **Surface Water**	• Removal or impacts to wetland, aquatic, and riparian vegetation. • Erosion and sedimentation to surface water from construction. • Risk of contamination to wetlands / waterbodies as a result of spills.	• Shorelines or banks disturbed by construction activities will be immediately stabilized to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site. • Stockpiled materials or equipment will be stored within the construction areas but shall be kept at least 30 m away from any wetland or watercourse to the extent feasible. If not feasible, install a heavy-duty silt fence and Silt Soxx (or equivalent) around the construction areas within 30 m of a watercourse. • Schedule construction activities immediately adjacent to waterbodies to avoid wet and rainy periods, to the extent feasible. • Conduct in-water works in the dry during low flow condition, where feasible. • Reduce the disturbance and removal of riparian vegetation, natural woody debris, rocks, sand or other materials from the banks, the shoreline or the bed of the waterbody below the ordinary high-water mark. • Where applicable to Project activities, in-water work should comply with the Ontario Provincial Standard Specifications (OPSS), including but not limited to OPSS 805 (Erosion and Sediment Control Measures), and OPSS 182 (Environmental Protection for Construction in Waterbodies and on Waterbody Banks). • Refueling is to be undertaken at least 30 m from any watercourse or any other surface drainage feature (as indicated OPSS 182). • Please refer to the **Natural Heritage Features** environmental component within this table for other applicable mitigation measures.	• On-site inspection should be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include alteration of activities to minimize impacts and enhance mitigation measures. • All erosion and sediment control measures should be inspected weekly, after every rainfall event and significant snow melt event, and daily during periods of extended rain or snow melt. • All damaged erosion and sediment control measures will be repaired and/or replaced within 48 hours of the inspection.
	• **Fish and Fish Habitat**	• Potential for direct, in-water impacts to fish and fish habitat	• All requirements of the Fisheries Act will be met.	• On-site inspection should be undertaken to confirm the implementation of the mitigation measures and identify corrective

Project Phase	Environmental Components	Potential Impacts	Mitigation Measures	Monitoring Activities
			• If dewatering of isolated work areas is required, capture and relocate fish to suitable habitat outside of the work area under a License to Collect Fish for Scientific Purposes from the MNDMNRF prior to dewatering isolated work areas. • Any fish isolated in the work area shall be transferred (using appropriate capture, handling and release techniques to prevent harm and minimize stress) downstream or away from the construction area. • Reduce the disturbance and removal of riparian vegetation, natural woody debris, rocks, sand or other materials from the banks, the shoreline or the bed of the waterbody below the ordinary high-water mark. • Shorelines or banks disturbed by construction activities will be immediately stabilized to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site. • To the extent feasible, schedule work to avoid wet, windy and rainy periods that may result in high flow volumes and/or increase erosion and sedimentation. • Ensure that all in-water activities, or associated in-water structures, do not interfere with fish passage, constrict the channel width, or reduce flows. • Fish screens, if required, will be used to avoid entrainment of fish in pumps and hoses as per the End-of-pipe fish protection screens for small water intakes in freshwater and Fisheries and Oceans Canada's Interim Standard and Code of Practice. • If in-water and/or near water construction works are required, appropriate mitigation measures will be followed, as identified in Applicable Law and through consultation with the relevant authorities such as Fisheries and Oceans Canada. • Erosion and Sediment Control (ESC) measures shall be used to contain/isolate the construction zone and to manage site drainage to prevent erosion and sedimentation to the waterbody. ESC measures will be installed prior to the start of construction, maintained and repaired in place until all areas are stabilized. Site-specific ESC plans should be developed for in-water and near-water work. • All equipment shall be operated, stored, and maintained in a manner that prevents the entry of any deleterious substances to the waterbody. All refueling should occur beyond 30m from the watercourse, and a spill tray should be used when completing maintenance and refueling. • Please refer to the **Natural Heritage Features and Surface Water** environmental component within this table for other applicable mitigation measures.	actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts. • Monitoring associated with any authorizations, permits, licenses and agreements to be completed as required. • All erosion and sediment control measures should be inspected weekly, after every rainfall event and significant snow melt event, and daily during periods of extended rain or snow melt. • All damaged erosion and sediment control measures will be repaired and/or replaced within 48 hours of the inspection.
	• **Vegetation Communities**	• Disturbance, and destruction of trees, plants and plant communities.	• Vegetation removal will be reduced and limited to within the construction areas. • Construction activities will maintain the buffers established during the design phase to reduce potential impacts to the vegetation communities. • Restore disturbed vegetated area with native species suitable for the site in adherence with the Metrolinx (2020) *Vegetation Guideline, or as amended* from time to time. Plant species used for site restoration should be common to the region and appropriate for the site-specific soil moisture regime. • Removal of ash trees, or portions of ash trees, will be carried out in compliance with the Canada Food and Inspection Agency Directive D-03-08: Phytosanitary Requirements to Prevent the Introduction into and Spread within Canada of the Emerald Ash Borer, *Agrilus planipennis* (Fairmaire) (2014), as amended from time to time. To comply with this Directive, all ash trees requiring removal, including any wood, bark or chips, will be restricted from being transported outside of the Emerald Ash Borer Regulated Areas of Canada unless otherwise authorized by a	• On-site inspection should 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.

Project Phase	Environmental Components	Potential Impacts	Mitigation Measures	Monitoring Activities
			Movement Certificate issued by the CFIA, moving these products out of the Regulated Area is prohibited. This is necessary to prevent the spread of the Emerald Ash Borer to un-infested areas in other part of Ontario and Canada. The Contractor must dispose of all wood at a registered waste facility. • Provide compensation for the removal of vegetation in accordance with Metrolinx Vegetation Guideline (2020), as amended from time to time. • An Arborist Report by an International Society of Arboriculture Certified Arborist will be prepared in accordance with the Ontario Forestry Act R.S.O. 1990, and other regulations and best management practices as applicable. • Prior to the undertaking of tree removals, a tree removal strategy/Tree Preservation Plan will be developed during detailed design to document tree protection and mitigation measures that follow Metrolinx (2020) *Vegetation Guideline* and/or relevant municipal guidelines (i.e., the City of Toronto Tree Protection Policy and Specifications for Construction Near Tree Guidelines (2016)) and adherence with best practices, standards and regulations on safety, environmental and wildlife protections. • Tree Protection Zone fencing will be established to protect and prevent tree injuries and Tree Protection Zones will be clearly staked prior to construction using barriers in accordance with local by-law requirements and/or in accordance with Metrolinx (2020) *Vegetation Guideline*, as amended from time to time. • Adhere to the local bylaws for tree protection as per Metrolinx (2020) *Vegetation Guideline*. • Please refer to the **Natural Heritage Features** environmental component within this table for other applicable mitigation measures.	
	• **Wildlife and Wildlife Habitat – General**	• Disturbance, displacement, or mortality of wildlife.	• Prior to construction, investigate the construction areas for wildlife and wildlife habitat that may have established following the completion of previous surveys/site inspections, as appropriate. • On-site personnel should be provided with information (e.g., factsheets) regarding wildlife (including Special Concern and SAR wildlife species) that have potential to occur on site. This should include information related to the identification of the wildlife species and the procedure(s) to follow if wildlife are encountered or injured. • If wildlife is encountered, measures to avoid destruction, injury, or interference with the species, and/or its habitat should be implemented. For example, construction activities should cease or be reduced, and wildlife will be encouraged to move off site and away from the construction area on its own. As necessary, a qualified biologist should be consulted to define the appropriate buffer required for wildlife and/or its habitat.	• Regular on-site inspection by on-site environmental workers or construction staff will occur within the construction area to ensure that no wildlife is trapped within the construction area.
	• **Migratory Breeding Birds and Nests**	• Disturbance or destruction of migratory birds and/or nests.	• Works must adhere to the Migratory Birds Convention Act (MBCA), including the timing windows for the general nesting period (April 1 to August 31 in Ontario). • If activities, including tree/vegetation removal, are proposed to occur during the general nesting period, then a breeding bird and nest survey should be undertaken prior to commencement of the activities. Nest searches should be performed no more than 48 hours prior to vegetation removal. Nest searches should be performed by a biologist with experience conducting nest searches. • Nests (including ground nests) of migratory bird found outside of the general nesting period should still receive protection.	• Regular monitoring should be undertaken to confirm that activities do not encroach into nesting areas or disturb active nesting sites.

Project Phase	Environmental Components	Potential Impacts	Mitigation Measures	Monitoring Activities
			• If an active nest is found, then a protective buffer area should be established around the nest. The extent of the buffer should be determined in consultation with a qualified biologist and if applicable, additional consultation with the agencies having jurisdiction (e.g., ECCC, MECP) may be required to determine extent of protection and mitigations. • Please refer to the **Vegetation and Vegetation Communities** and **Wildlife and Wildlife Habitat** environmental components within this table for other applicable mitigation measures.	
	• **Species at Risk – General**	• Habitat loss, disturbance and/or mortality to SAR.	• All requirements of the ESA and/or SARA Species-specific mitigation measures will be implemented, in consultation with MECP as required. • Please refer to the **Vegetation and Vegetation Communities, Surface Water, Wildlife and Wildlife Habitat** and **Fish and Fish Habitat** environmental components within this table for other applicable mitigation measures.	• Species-specific monitoring activities will be developed in accordance with any registration and/or permitting requirements under the ESA.
	• **Species at Risk - Barn/Bank Swallow**	• Habitat loss, disturbance and/or mortality to Barn and/or Bank Swallow.	• Field surveys should be undertaken prior to construction to confirm the number of Barn and/or Bank Swallow nests present in known nest locations and whether the nests remain active. • Where loss or disturbance cannot be avoided (e.g., due to work on bridges or banks) in confirmed Bank/Barn Swallow habitat, all requirements under the ESA will be met, including any registration, compensation, replacement structures and/or permitting requirements. • Loose soil faces (including aggregate piles) should be graded at an angle of no greater than 70° to discourage Bank Swallow nesting. • If construction activities that would cause disturbance to structures confirmed to provide Barn Swallow habitat and/or banks confirmed to provide Bank Swallow habitat are scheduled during the nesting season for Barn and/or Bank Swallow (April 1 to August 31), a nest search should be undertaken by a qualified biologist. The nest search should confirm that no Barn and/or Bank Swallow are nesting on structures or banks that may be affected by construction activities on or near these areas. If feasible, exclusion measures will be installed in the area prior to the nesting season to dissuade use of these areas for nesting. • Swallow nesting. Loose soil faces (including aggregate piles) should be graded at an angle of no greater than 70° to discourage Bank Swallow nesting. • Loose soil faces (including aggregate piles) should be graded at an angle of no greater than 70° to discourage Bank Swallow nesting. • Please refer to **Wildlife and Wildlife Habitat** environmental components within this table for other applicable general mitigation measures.	• On-site inspection should 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-specific monitoring activities will be developed in accordance with any registration and/or permitting requirements under the ESA.
	• **Species at Risk - Chimney Swift**	• Habitat loss, disturbance and/or mortality to Chimney Swift.	• If repair, maintenance or demolition of buildings/structures with suitable roosting/nesting habitat (e.g., chimneys) is to take place, targeted surveys for Chimney Swift should be completed by a qualified biologist as per the Bird Studies Canada Chimney Swift Monitoring Protocol (2009). • If required, repair, maintenance, or demolition of an identified confirmed roosting/nesting will meet all requirements of the ESA. • Please refer to **Wildlife and Wildlife Habitat** environmental components within this table for other applicable mitigation measures.	• On-site inspection should 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-specific monitoring activities will be developed in accordance with any registration and/or permitting requirements under the ESA.
	• **Species at Risk -- Bats**	• Habitat loss, disturbance and/or mortality to SAR Bats.	• Should removal of potential SAR bat habitat be required, SAR bat surveys will be completed by a qualified specialist in advance of the removal activities to confirm SAR bat habitat presence.	• On-site inspection should 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.

Project Phase	Environmental Components	Potential Impacts	Mitigation Measures	Monitoring Activities
			• If removal of confirmed SAR bat habitat is required, all requirements under the ESA will be met, including any registration, compensation, replacement structures and/or permitting requirements. • Please refer to **Wildlife and Wildlife Habitat** environmental components within this table for other applicable mitigation measures.	• Species-specific monitoring activities will be developed in accordance with any registration and/or permitting requirements under the ESA.
	• **Species at Risk - Butternut**	• Disturbance and/or destruction of Butternut.	• All requirements of the Endangered Species Act will be met. Species-specific mitigation measures will be implemented, in consultation with MECP as required.	• Species-specific monitoring activities will be developed in accordance with any registration and/or permitting requirements under the ESA.
OPERATION	• **Natural Heritage Features - General**	• No impacts are anticipated during the operation phase.	• NA	• NA
	• **Surface Water**	• Risk of contamination to wetlands / waterbodies as a result of spills.	• Refueling at least 30 m from any watercourse or any other surface drainage feature.	• NA
	• **Fish and Fish Habitat**	• Risk of contamination to wetlands / waterbodies as a result of spills.	• Refueling at least 30 m from any watercourse or any other surface drainage feature.	• NA
	• **Vegetation Communities**	• Removal of vegetation during operational vegetation maintenance activities, if applicable. • Removal and/or damage to adjacent vegetation or ELC communities as a result of accidental intrusion during vegetation maintenance activities, if applicable.	• Vegetation removal will be reduced to the extent possible and limited to the Project right-of-way. • Herbicide applications will be administered subject to the Pesticides Act.	• 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 reduce impacts.
	• **Wildlife and Wildlife Habitat – General**	• Operations activities such as vegetation maintenance may cause disturbance or displacement of wildlife.	• Ensure routine maintenance of ROW fences as an exclusionary measure within the above ground portion of the project. • Operation maintenance activities will include nest searches and wildlife surveys prior to maintenance work commencing, as required.	• On-site inspection should be regularly 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.
	• **Migratory Breeding Birds and Nests**	• No impacts are anticipated	• NA	• NA
	• **Wildlife - Barn/Bank Swallow**	• No impacts are anticipated	• NA	• NA
	• **Wildlife - Chimney Swift**	• No impacts are anticipated	• NA	• NA
	• **Species at Risk -- Bats**	• No impacts are anticipated	• NA	• NA
	• **Species at Risk - Butternut**	• No impacts are anticipated	• NA	• NA

B 5.0 Permits and Approvals

Information pertaining to the natural heritage legislation, policies, and planning components relative to federal, provincial, and municipal sections associated with the Project are summarized in **Part A Section A 1.5**.

This section outlines the permits and approvals that may be required for the Project. Permit and approval requirements will be confirmed during detailed design.

B 5.1 Federal

An Authorization or Letter of Advice for completion of near-water / in-water works may be required, issued by DFO in response to a formal Request for Review.

B 5.2 Provincial

B 5.2.1 Endangered Species Act, 2007

All requirements of the Endangered Species Act will be met. Species-specific mitigation, monitoring, surveys, and corrective action will be implemented in accordance with permits and approvals under the ESA, and in consultation with MECP, as necessary.

B 5.2.2 Fish and Wildlife Conservation Act, 1997

A Licence to Collect Fish for Scientific Purposes, under the Fish and Wildlife Conservation Act, from the MNDMNRF to move or salvage fish.

B 5.2.3 Conservation Authorities

Metrolinx will consult with TRCA with respect to construction activities in regulates areas within the YNSE Study Area in relation to Ontario Regulation 166/06: Toronto and Region Conservation Authority Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses.

B 5.3 Municipal

A range of municipal permits (e.g., Permit to Injure or Remove Trees) may be required for the project, particularly as pertaining to municipally owned lands and infrastructure. Metrolinx will obtain all required permits and approvals. However, Metrolinx as a Crown Agency of the Province of Ontario is exempt from certain municipal processes and requirements. In these instances, Metrolinx will engage with the municipalities to incorporate municipal requirements as a best practice, where practical, and may obtain associated permits and approvals.

B 6.0 Future Work

B 6.1 Field Investigations

The following natural environment field investigations may be undertaken in the appropriate timing window (as per the applicable protocol) prior to construction commencement, as required:

- Bat Species at Risk Surveys;
- Breeding bird surveys within appropriate nesting habitat; and
- Fish habitat assessment during high-flow conditions.

B 6.1.1 Bat Species at Risk Surveys

Species – specific surveys (i.e., acoustic monitoring) for bat Species at Risk following the Survey Protocol for Species at Risk within Treed Habitats: Little Brown Myotis, Northern Myotis and Tri-coloured Bat (Ministry of Natural Resources and Forestry, 2017) or newer protocol if it becomes available from Ministry of the Environment, Conservation and Parks, will be required for tree removals proposed within potential bat SAR habitat to confirm potential impacts and necessary level of compensation under the Endangered Species Act and any applicable permits obtained. Total tree removal areas (including both temporary and permanent removals) in suitable bat SAR habitat are recommended to be calculated based on at least 60% design to inform compensation requirements.

If demolition of potentially suitable buildings is required as planning progresses, detailed searches for potential entry points from all sides of the building and exit surveys following the Ministry of the Environment, Conservation and Parks protocols should be completed. Surveys should be completed prior to scheduled construction to confirm habitat use by bat SAR and to identify potential for disturbance of the species during construction in order to confirm authorization requirements under the Endangered Species Act.

B 6.1.2 Migratory Breeding Bird Surveys and Pre-Construction Nest Surveys

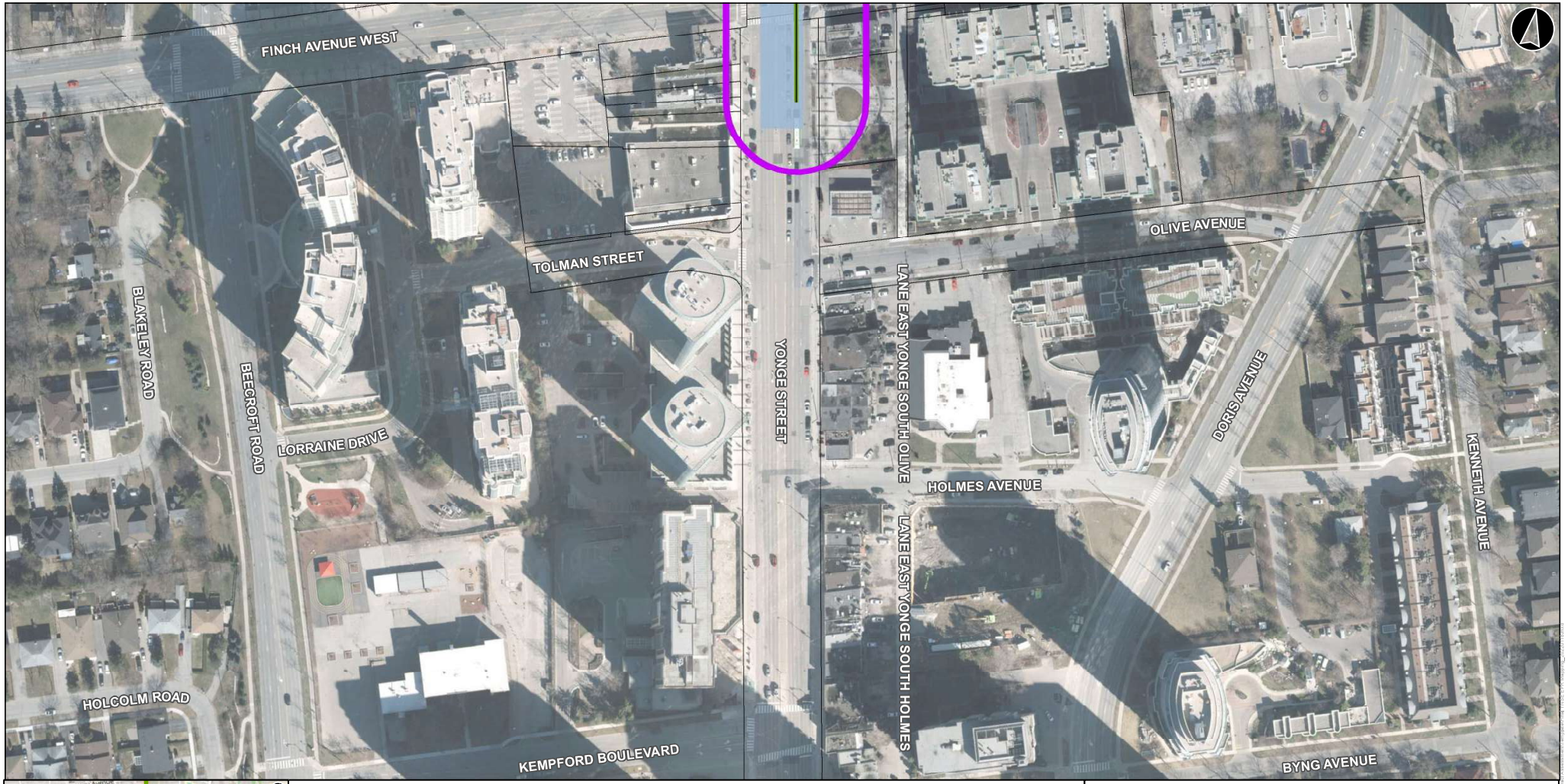
Breeding bird surveys, within appropriate nesting habitat, should be completed following the Ontario Breeding Bird Atlas Protocol (2001). Details are provided in Section A 3.2 under the Breeding Bird Survey sub-heading.

All structures that are anticipated to be demolished, modified or replaced to facilitate the construction of the YNSE shall be inspected for nests or nesting activity of Migratory Birds Convention Act protected birds. These surveys can occur at any time of year but must be completed prior to the onset of construction activities.

B 6.1.3 Fish Habitat Assessment

Surveys during low flow periods (e.g., late summer/fall, sometimes winter) are beneficial to assess presence, quality, connectivity, and fish use of refuge habitats that have little to no base flows or minimal depths seasonally (MTO 2020); however, site-specific information and photos during high flows may be beneficial, in conjunction with modeling data, to support design of watercourse crossings and/or enhancement of existing structures.

Appendix D **Yonge North Subway Extension (YNSE) EPR Addendum Impact Assessment Study Area Mapping**



Legend

- Study Area
- Existing Finch Station
- Proposed Subway Alignment (Below Grade)
- Property Fabric

Designs are conceptual and subject to change.

Yonge North Subway Extension (YNSE)
YNSE EPR Addendum Mapping

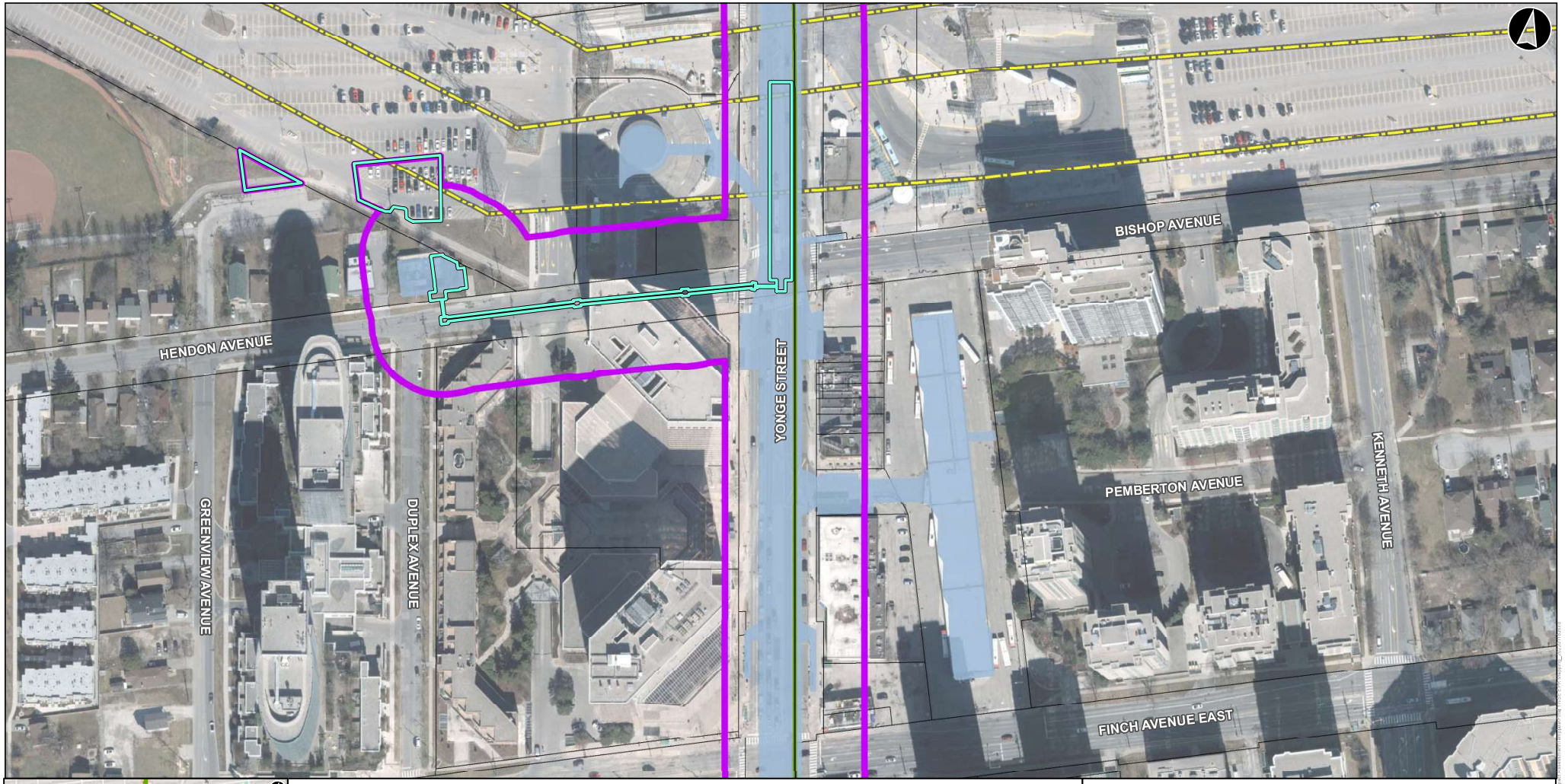
0 25 50
Metres
Datum: NAD27 MTM zone 10

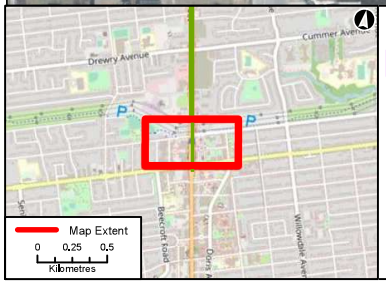
Segment 1 - Figure 1

METROLINX
Infrastructure Ontario

Data Sources:
Aerial imagery provided by ESRI dated 2019.
Mapping contains open data from TRCA & Municipal/Provincial Data Catalogues.

Jan, 2022	1:1,600	One
P 067400	Rev 0	





Legend

- Study Area
- Existing Finch Station
- Proposed Finch Station Modifications
- Proposed Subway Alignment (Below Grade)
- Existing Hydro One Transmission
- Property Fabric

Designs are conceptual and subject to change.

Yonge North Subway Extension (YNSE)
YNSE EPR Addendum Mapping

0 25 50
Metres
Datum: NAD27 MTM zone 10

Segment 1 - Figure 2

METROLINX
Infrastructure Ontario
One

Data Sources:
Aerial imagery provided by ESRI dated 2019.
Mapping contains open data from TRCA & Municipal/Provincial Data Catalogues.

Jan, 2022	1:1,600	
P 067400	Rev 0	

Legend

- Study Area
- Existing Finch Station
- Proposed Finch Station Modifications
- Proposed Transition Box Structure (Below Grade)
- Proposed Subway Alignment (Below Grade)
- Proposed Extraction Shaft
- Proposed TPSS Location
- Proposed EEB Location
- Existing Hydro One Transmission
- Property Fabric

Designs are conceptual and subject to change.

Yonge North Subway Extension (YNSE)
YNSE EPR Addendum Mapping

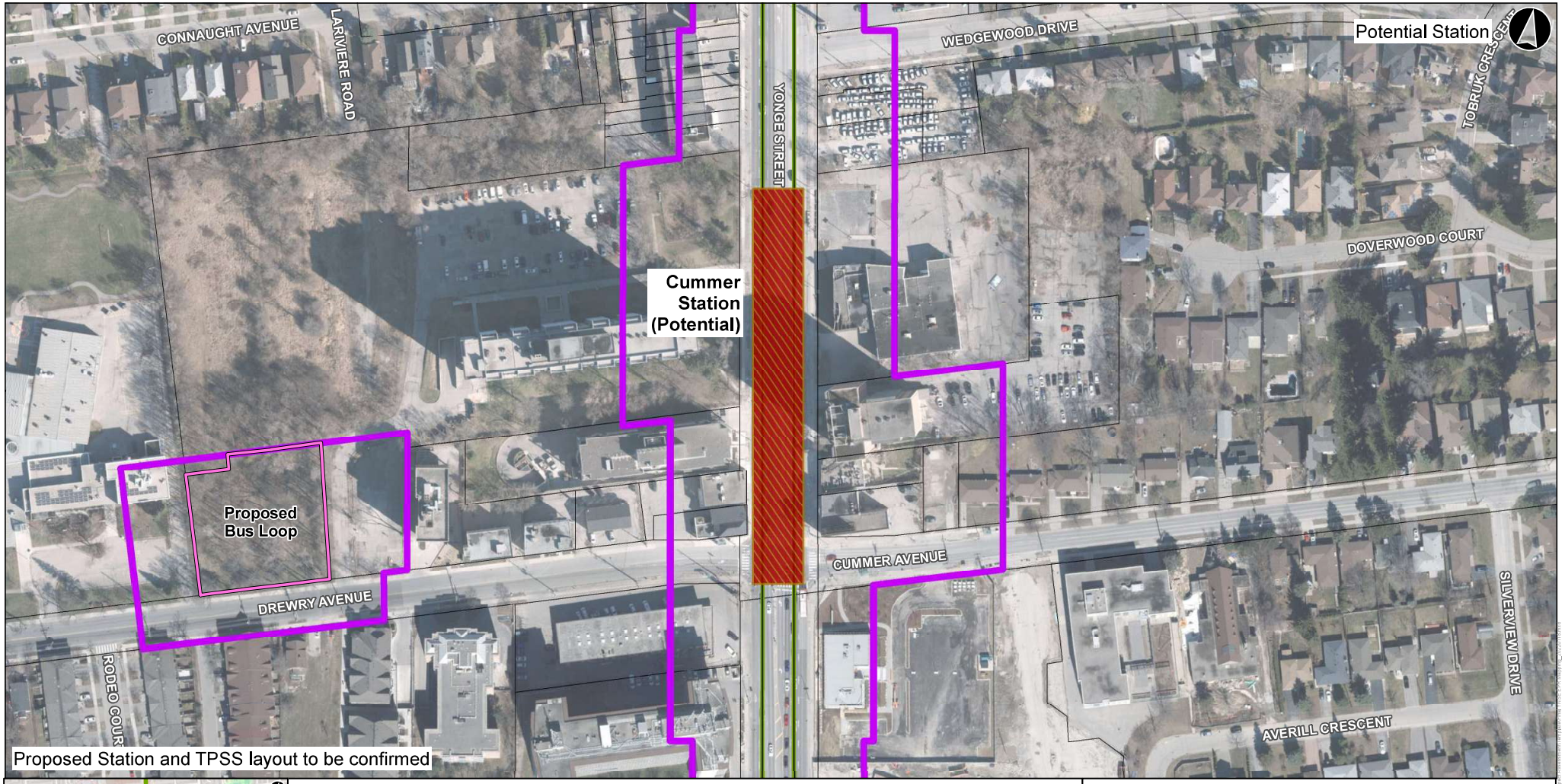
0 25 50 75
Metres
Datum: NAD27 MTM zone 10

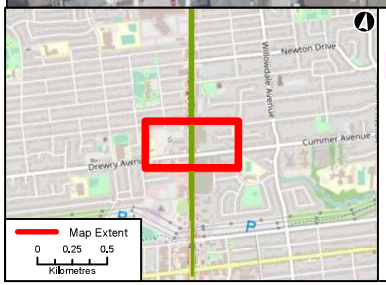
Data Sources:
Aerial imagery provided by ESRI dated 2019.
Mapping contains open data from TRCA & Municipal/Provincial Data Catalogues.

Segment 1 - Figure 3

Jan, 2022	1:1,900
P 067400	Rev 0

METROLINX
Infrastructure Ontario
One





Legend

- Study Area
- Proposed Subway Alignment (Below Grade)
- Potential Station Platform Area
- Proposed Bus Loop
- Property Fabric

Designs are conceptual and subject to change.

Yonge North Subway Extension (YNSE)
YNSE EPR Addendum Mapping

0 25 50
Metres
Datum: NAD27 MTM zone 10

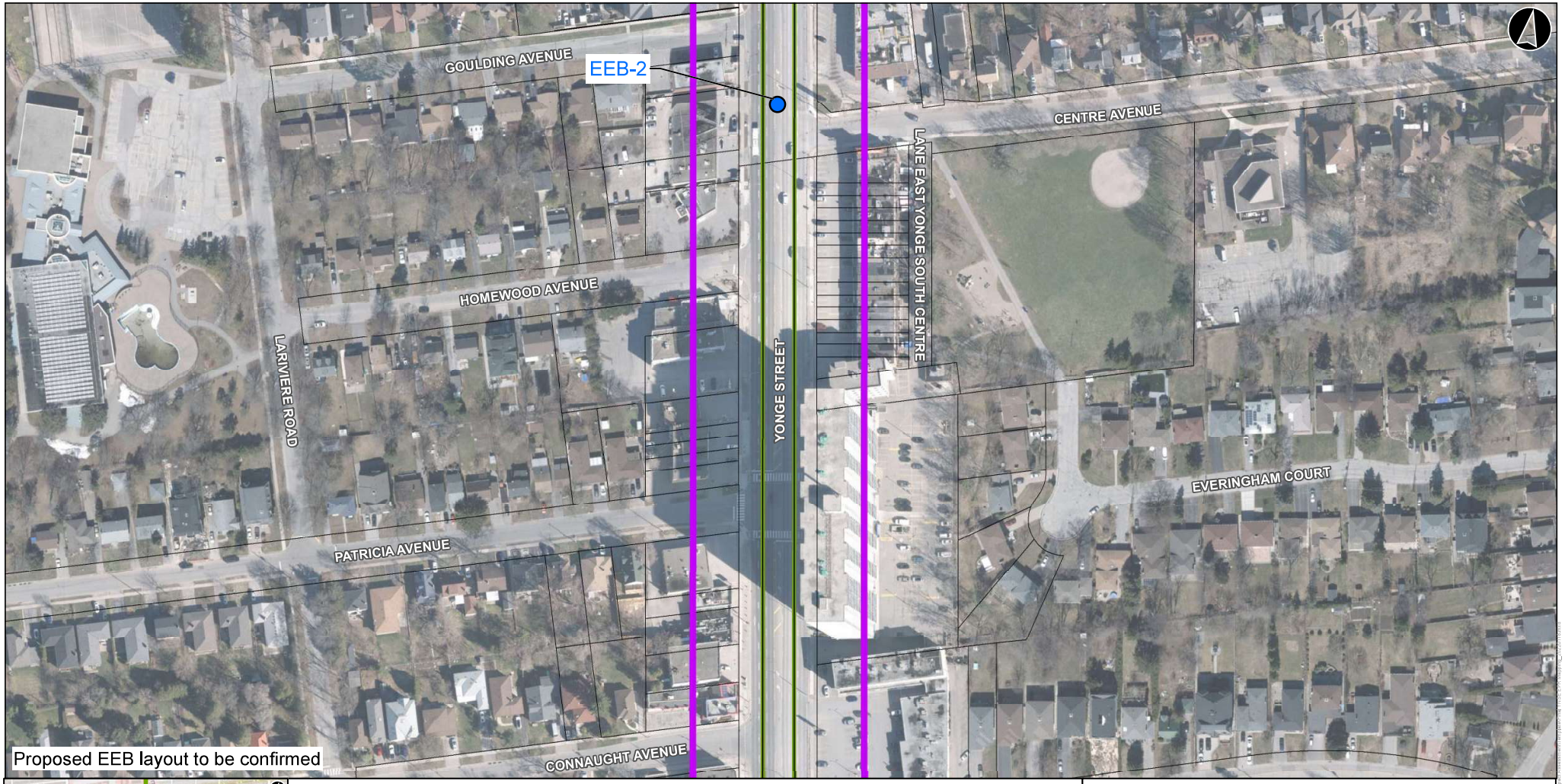
Segment 1 - Figure 4

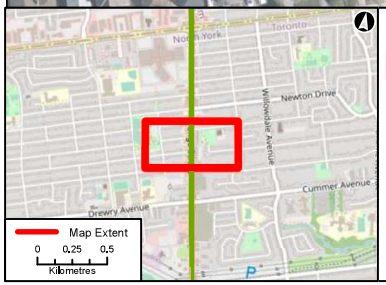
METROLINX
Infrastructure Ontario

Data Sources:
Aerial imagery provided by ESRI dated 2019.
Mapping contains open data from TRCA & Municipal/Provincial Data Catalogues.

Jan, 2022	1:1,600
P 067400	Rev 0

One+





Legend

- Study Area
- Proposed Subway Alignment (Below Grade)
- Proposed EEB Location
- Property Fabric

Designs are conceptual and subject to change.

Yonge North Subway Extension (YNSE)
YNSE EPR Addendum Mapping

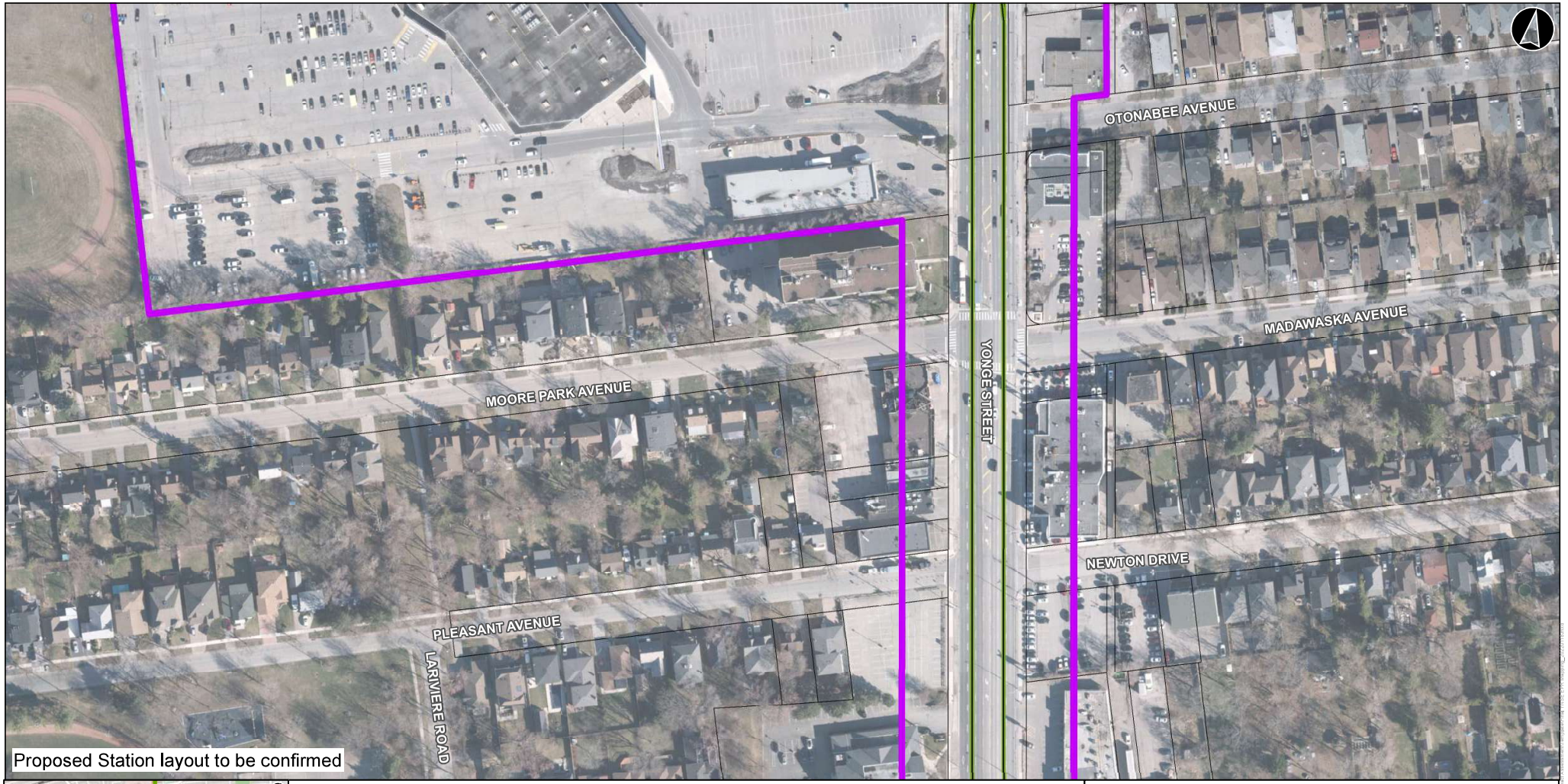
0 25 50
Metres
Datum: NAD27 MTM zone 10

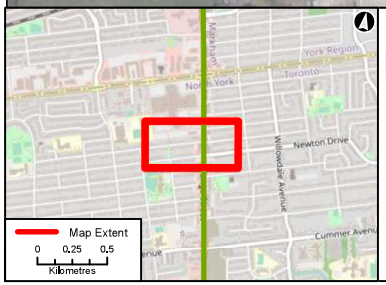
Segment 1 - Figure 5

METROLINX
Infrastructure Ontario

Data Sources:
Aerial imagery provided by ESRI dated 2019.
Mapping contains open data from TRCA & Municipal/Provincial Data Catalogues.

Jan, 2022	1:1,600
P 067400	Rev 0





Legend

- Study Area
- Proposed Subway Alignment (Below Grade)
- Property Fabric

Designs are conceptual and subject to change.

Yonge North Subway Extension (YNSE)
YNSE EPR Addendum Mapping

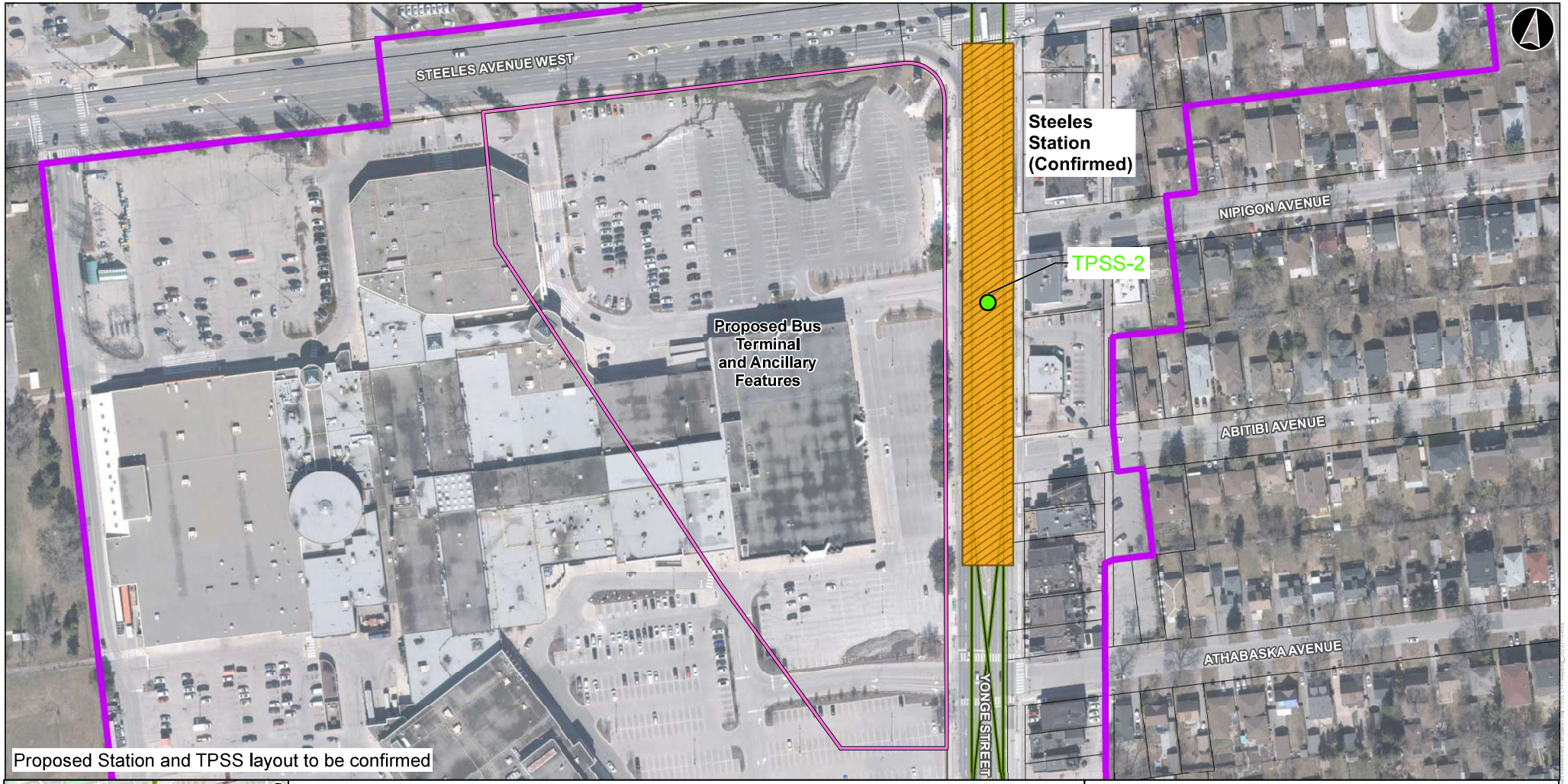
0 25 50
Metres
Datum: NAD27 MTM zone 10

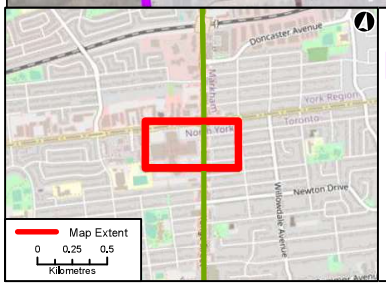
Segment 1 - Figure 6

METROLINX
Infrastructure Ontario

Data Sources:
Aerial imagery provided by ESRI dated 2019.
Mapping contains open data from TRCA & Municipal/Provincial Data Catalogues.

Jan, 2022	1:1,600	One+
P 067400	Rev 0	





Legend

- Study Area
- Proposed Subway Alignment (Below Grade)
- Confirmed Station Platform Area
- Proposed Bus Terminal and Ancillary Features
- Proposed TPSS Location
- Property Fabric

Designs are conceptual and subject to change.

Yonge North Subway Extension (YNSE)
YNSE EPR Addendum Mapping

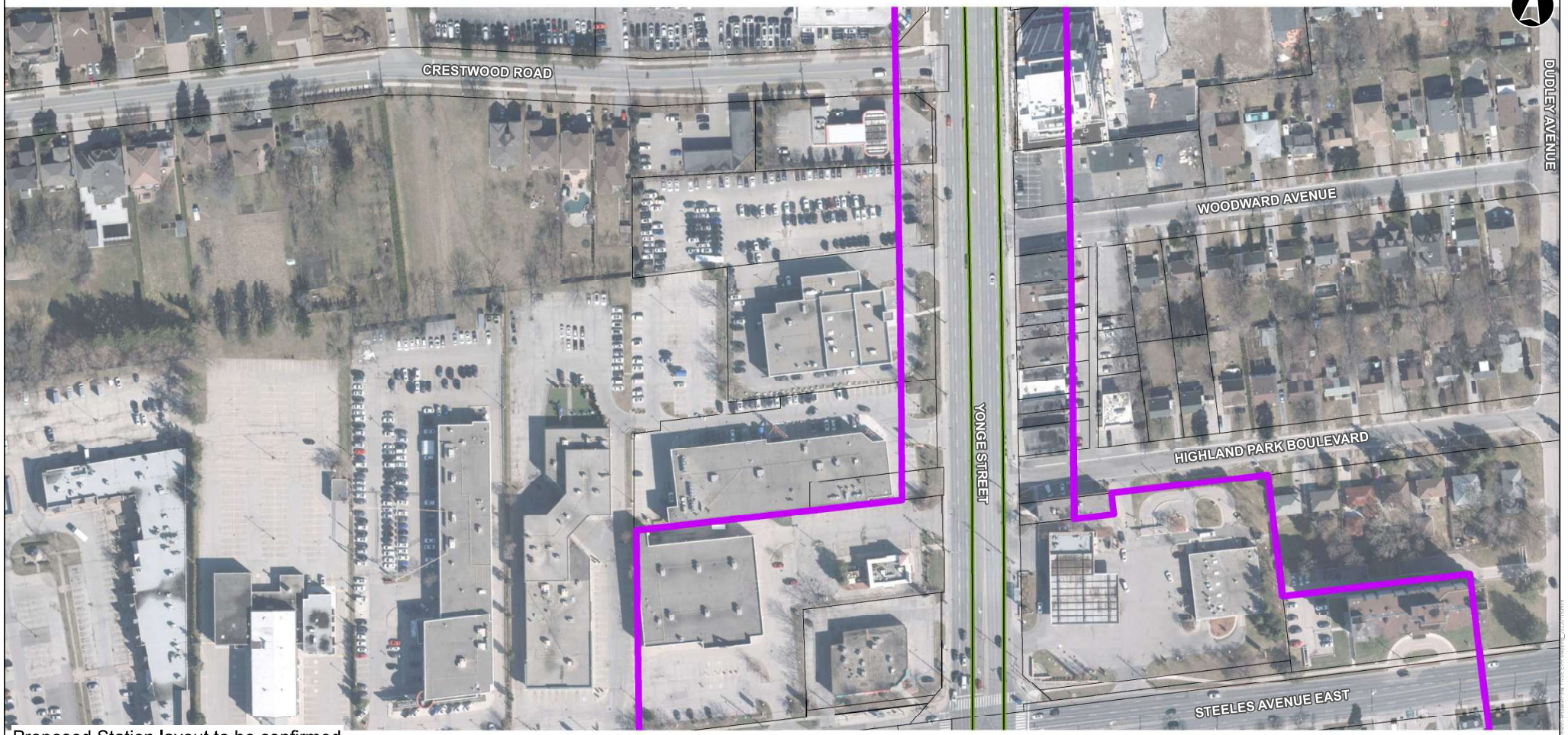
0 25 50
Metres
Datum: NAD27 MTM zone 10

Segment 1 - Figure 7

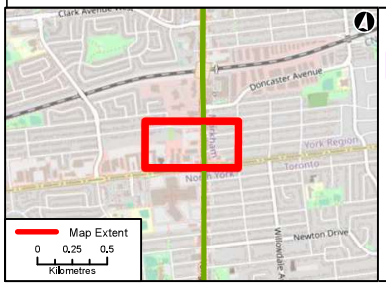
METROLINX
Infrastructure Ontario

Data Sources:
Aerial imagery provided by ESRI dated 2019.
Mapping contains open data from TRCA & Municipal/Provincial Data Catalogues.

Jan, 2022	1:1,600
P 067400	Rev 0



Proposed Station layout to be confirmed



Legend

- Study Area
- Proposed Subway Alignment (Below Grade)
- Property Fabric

Designs are conceptual and subject to change.

Yonge North Subway Extension (YNSE)
YNSE EPR Addendum Mapping

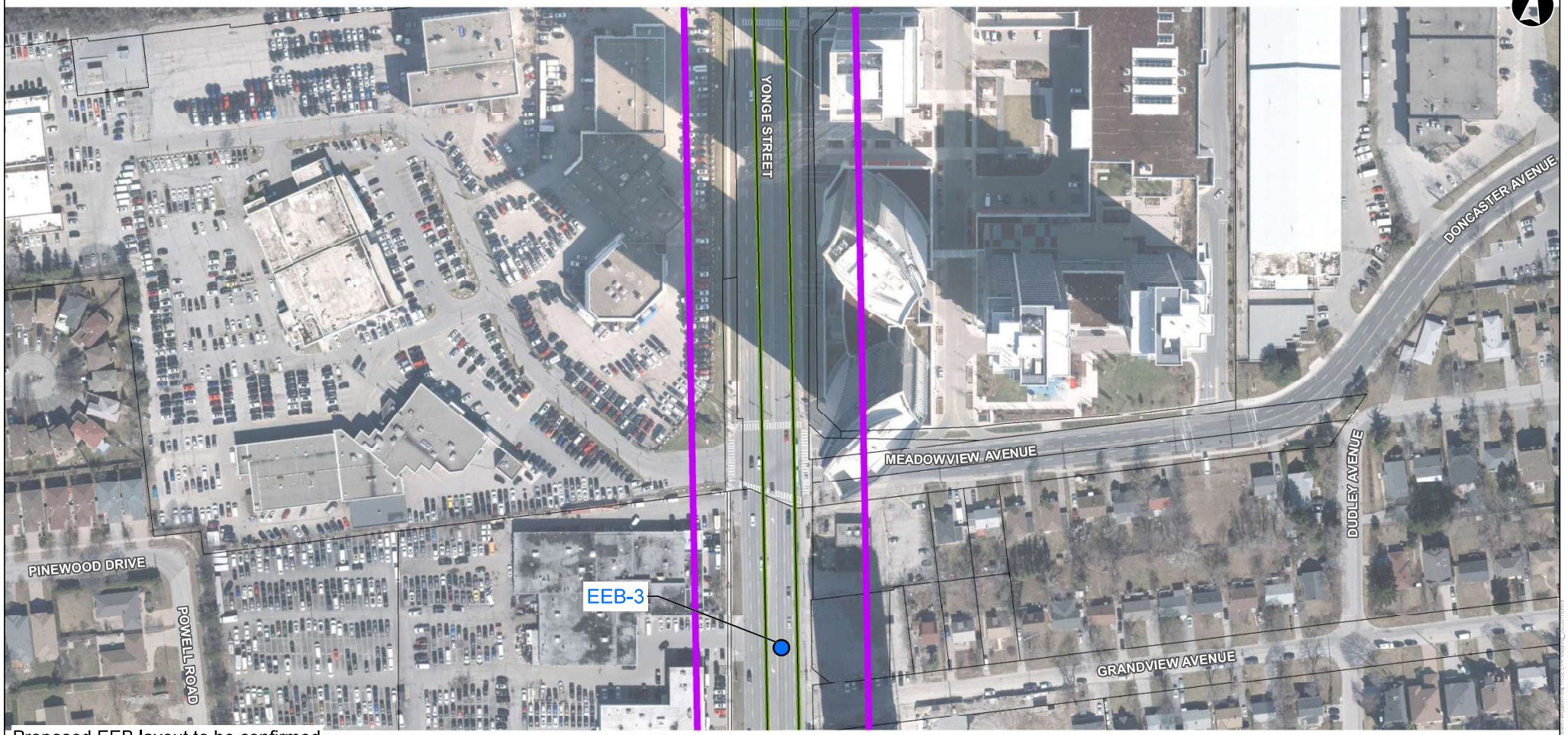
0 25 50
Metres
Datum: NAD27 MTM zone 10

Segment 1 - Figure 8

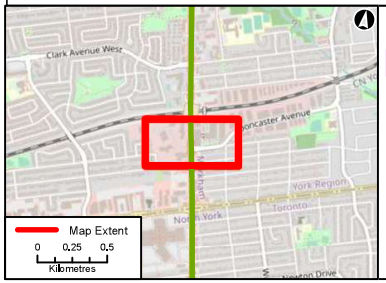
METROLINX
Infrastructure Ontario

Data Sources:
Aerial imagery provided by ESRI dated 2019.
Mapping contains open data from TRCA & Municipal/Provincial Data Catalogues.

Jan, 2022	1:1,600	One
P 067400	Rev 0	



Proposed EEB layout to be confirmed



Legend

- Study Area
- Proposed Subway Alignment (Below Grade)
- Proposed EEB Location
- Property Fabric

Designs are conceptual and subject to change.

Yonge North Subway Extension (YNSE)
YNSE EPR Addendum Mapping

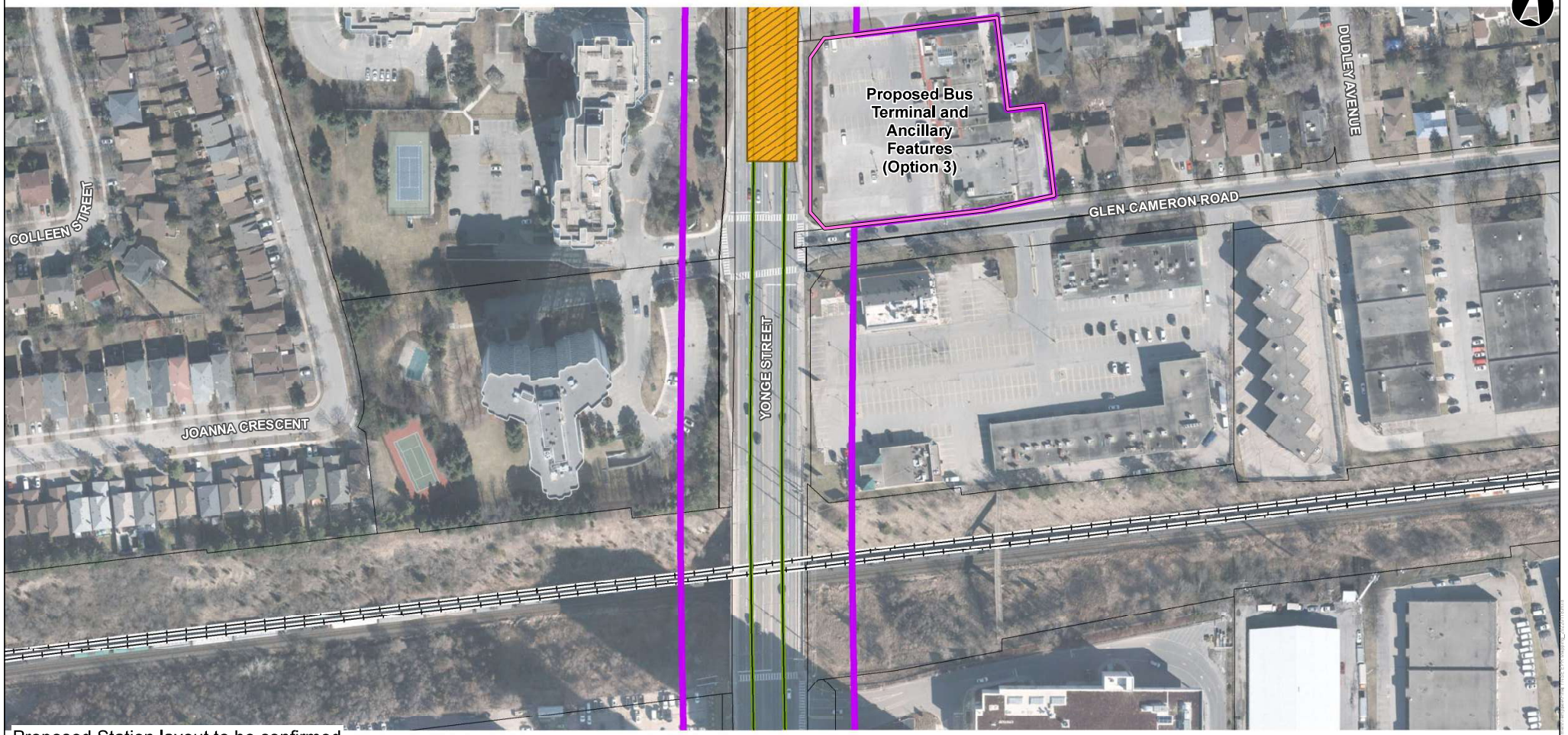
0 25 50
Metres
Datum: NAD27 MTM zone 10

Segment 1 - Figure 9

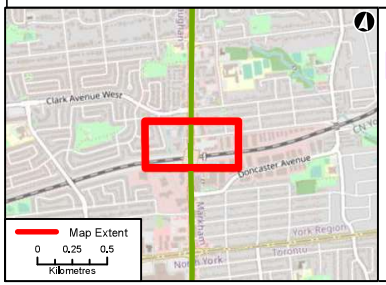
METROLINX
Infrastructure Ontario

Data Sources:
Aerial imagery provided by ESRI dated 2019.
Mapping contains open data from TRCA & Municipal/Provincial Data Catalogues.

Jan, 2022	1:1,600	One
P 067400	Rev 0	



Proposed Station layout to be confirmed



Legend

- Study Area
- Proposed Subway Alignment (Below Grade)
- Confirmed Station Platform Area
- Proposed Bus Terminal and Ancillary Features
- Existing CN Track
- Property Fabric

Designs are conceptual and subject to change.

Yonge North Subway Extension (YNSE)
YNSE EPR Addendum Mapping

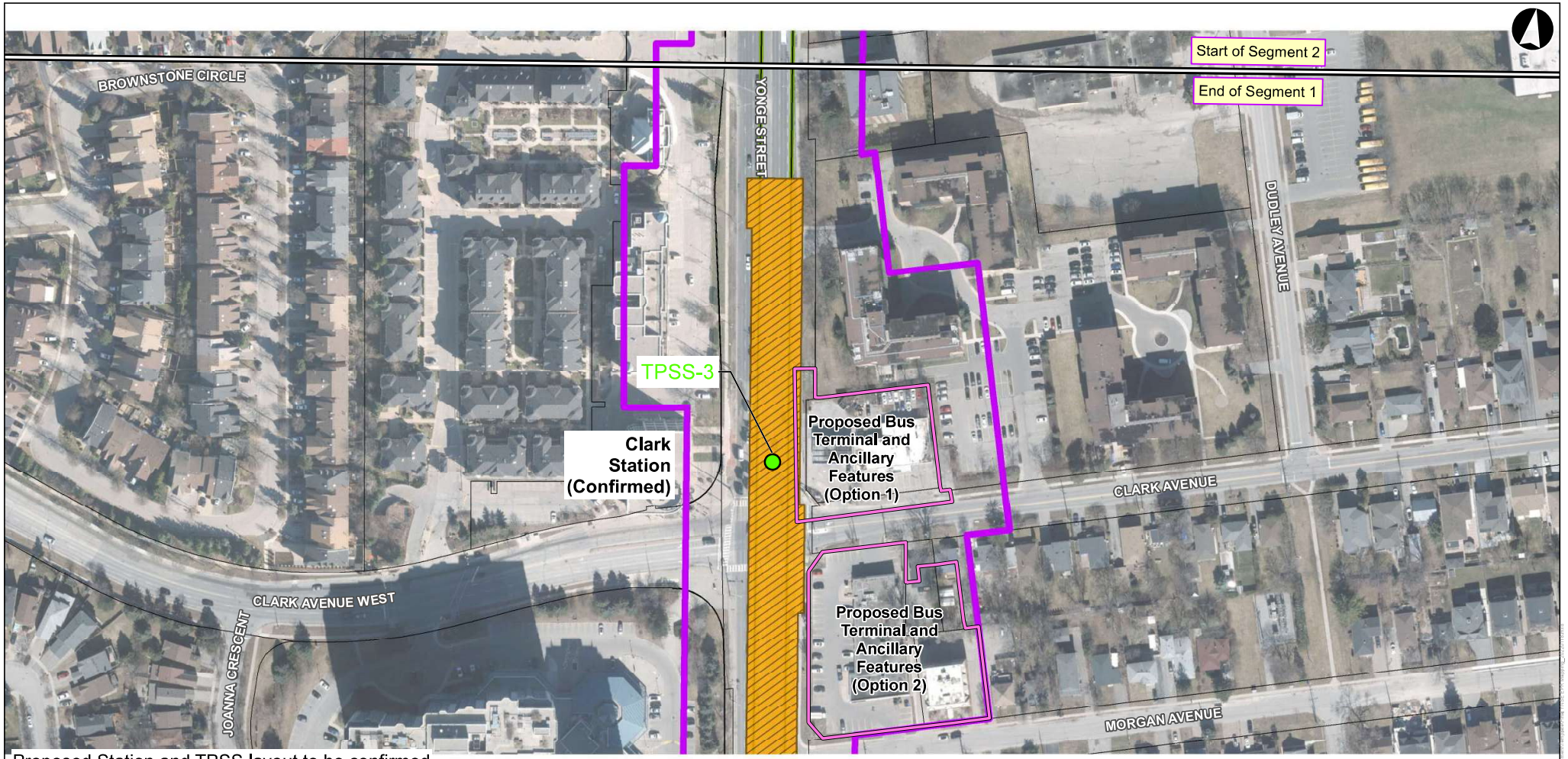
0 25 50
Metres
Datum: NAD27 MTM zone 10

Segment 1 - Figure 10

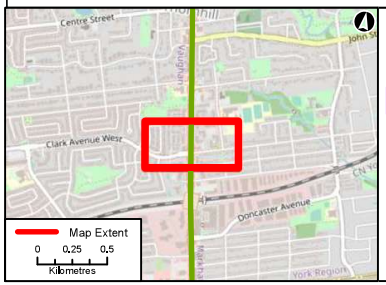
METROLINX
Infrastructure Ontario

Data Sources:
Aerial imagery provided by ESRI dated 2019.
Mapping contains open data from TRCA & Municipal/Provincial Data Catalogues.

Jan, 2022	1:1,600	One
P 067400	Rev 0	



Proposed Station and TPSS layout to be confirmed



Legend

- Study Area Segment Breakline
- Study Area
- Proposed Subway Alignment (Below Grade)
- Confirmed Station Platform Area
- Proposed Bus Terminal and Ancillary Features
- Proposed TPSS Location
- Property Fabric

Designs are conceptual and subject to change.

Yonge North Subway Extension (YNSE)
YNSE EPR Addendum Mapping

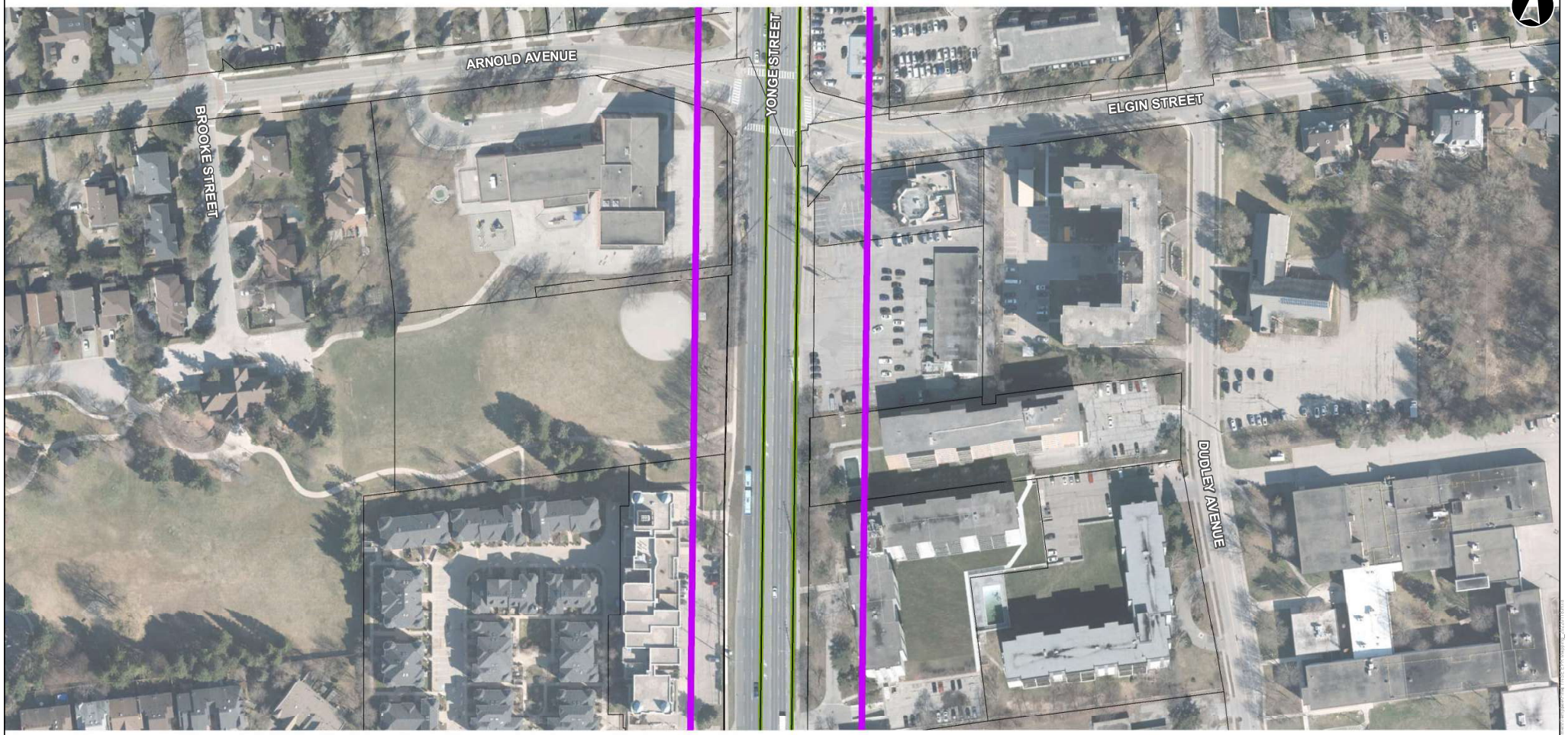
0 25 50
Metres
Datum: NAD27 MTM zone 10

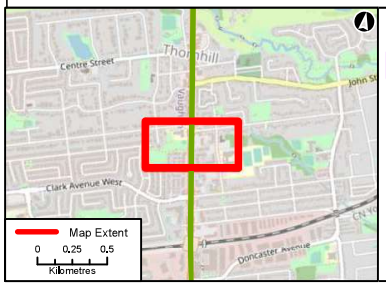
Segment 1/2 - Figure 11

METROLINX
Infrastructure Ontario

Data Sources:
Aerial imagery provided by ESRI dated 2019.
Mapping contains open data from TRCA & Municipal/Provincial Data Catalogues.

Jan, 2022	1:1,600
P 067400	Rev 0





Legend

- Study Area
- Proposed Subway Alignment (Below Grade)
- Property Fabric

Designs are conceptual and subject to change.

Yonge North Subway Extension (YNSE)
YNSE EPR Addendum Mapping

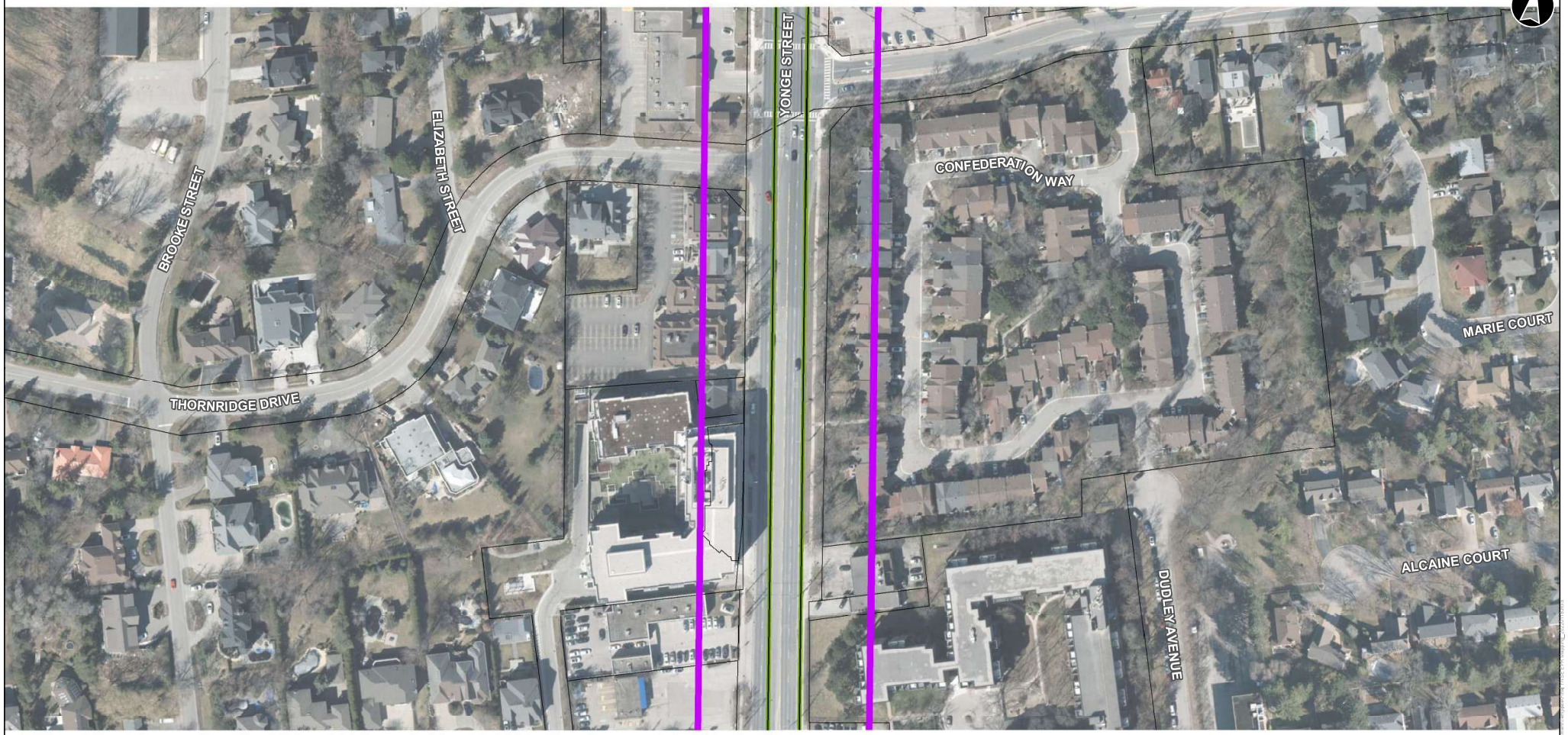
0 25 50
Metres
Datum: NAD27 MTM zone 10

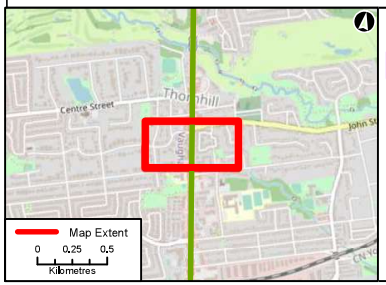
Segment 2 - Figure 12

METROLINX
Infrastructure Ontario

Data Sources:
Aerial imagery provided by ESRI dated 2019.
Mapping contains open data from TRCA & Municipal/Provincial Data Catalogues.

Jan, 2022	1:1,600	One
P 067400	Rev 0	





Legend

- Study Area
- Proposed Subway Alignment (Below Grade)
- Property Fabric

Designs are conceptual and subject to change.

Yonge North Subway Extension (YNSE)
YNSE EPR Addendum Mapping

0 25 50
Metres
Datum: NAD27 MTM zone 10

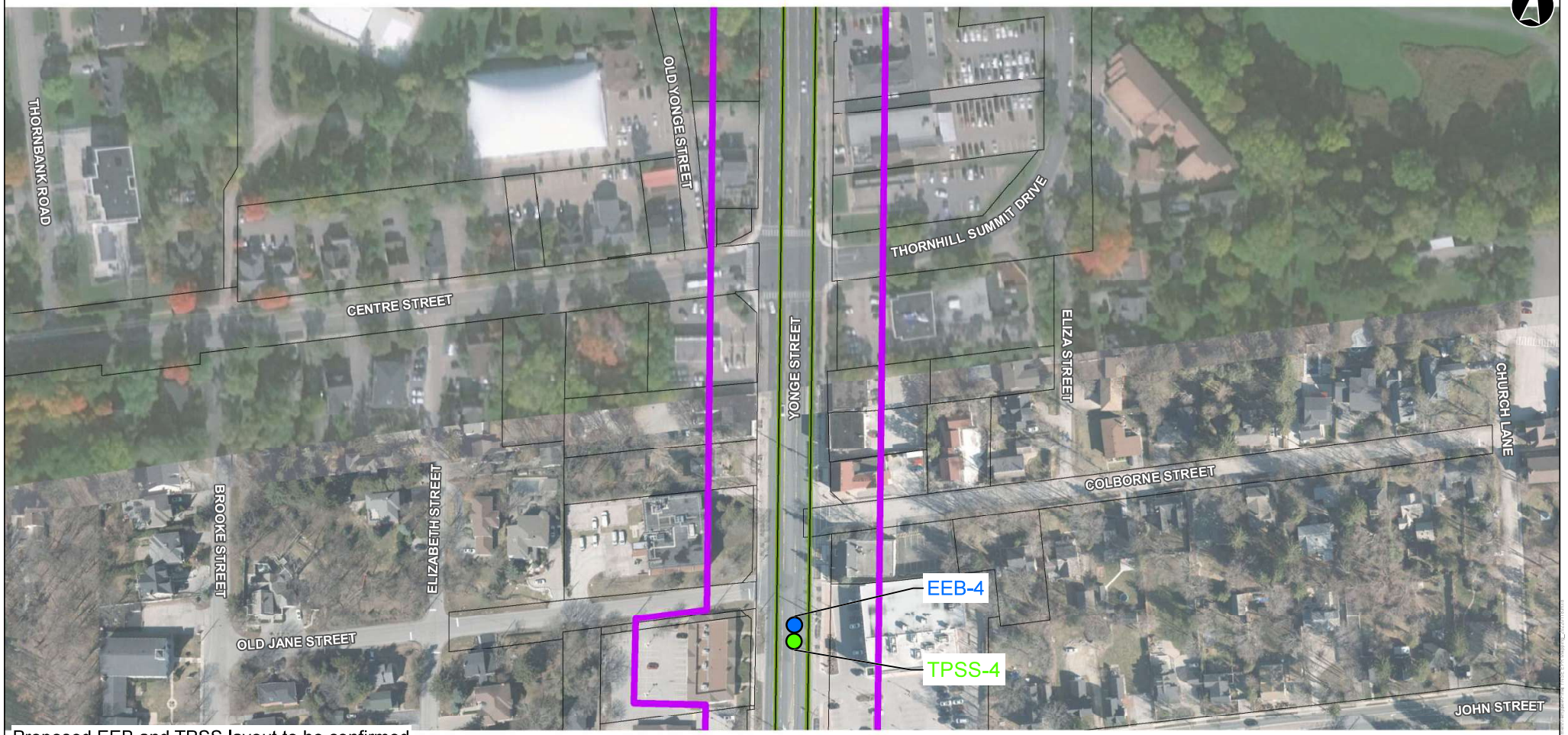
Segment 2 - Figure 13

METROLINX
Infrastructure Ontario

Data Sources:
Aerial imagery provided by ESRI dated 2019.
Mapping contains open data from TRCA & Municipal/Provincial Data Catalogues.

Jan, 2022	1:1,600
P 067400	Rev 0

One+



Proposed EEB and TPSS layout to be confirmed

Legend

- Study Area
- Proposed Subway Alignment (Below Grade)
- Proposed TPSS Location
- Proposed EEB Location
- Property Fabric

Designs are conceptual and subject to change.

Yonge North Subway Extension (YNSE)
YNSE EPR Addendum Mapping

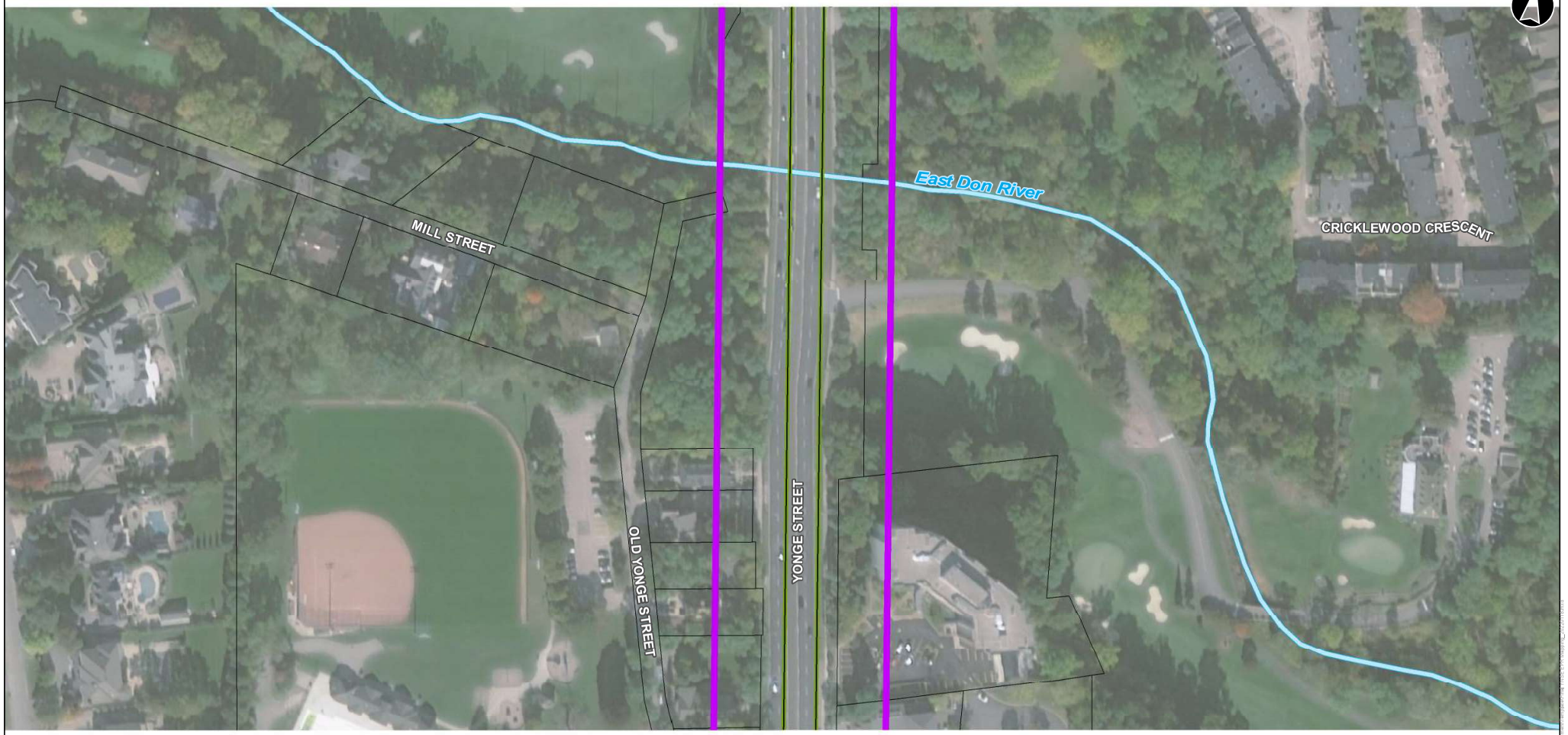
0 25 50
Metres
Datum: NAD27 MTM zone 10

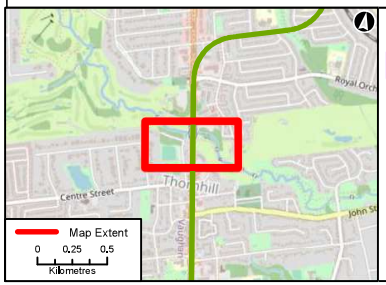
Segment 2 - Figure 14

METROLINX
Infrastructure Ontario

Data Sources:
Aerial imagery provided by ESRI dated 2019.
Mapping contains open data from TRCA & Municipal/Provincial Data Catalogues.

Jan, 2022	1:1,600	One
P 067400	Rev 0	





Legend

- Study Area
- Proposed Subway Alignment (Below Grade)
- Watercourse
- Property Fabric

Designs are conceptual and subject to change.

Yonge North Subway Extension (YNSE)
YNSE EPR Addendum Mapping

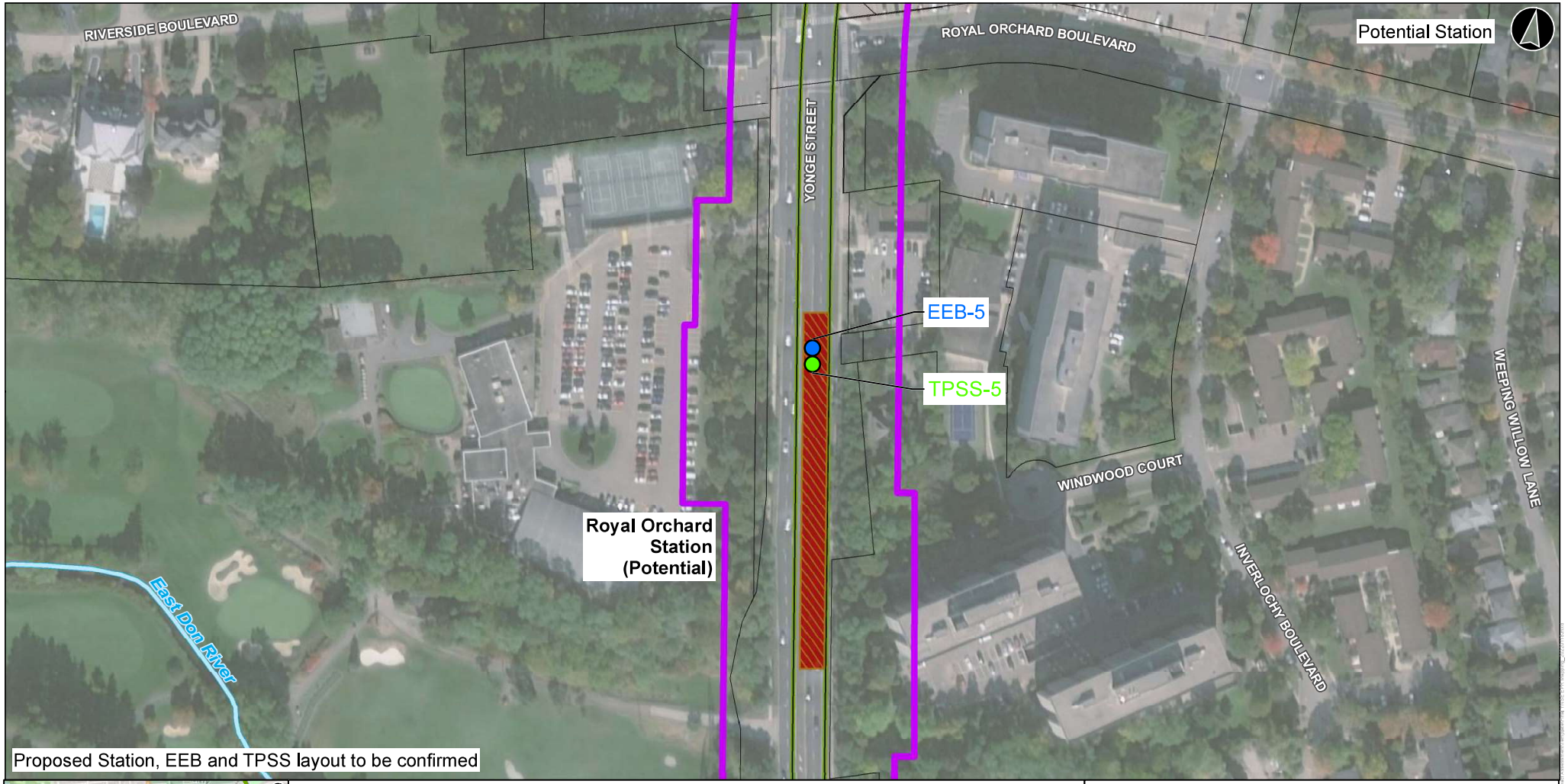
0 25 50
Metres
Datum: NAD27 MTM zone 10

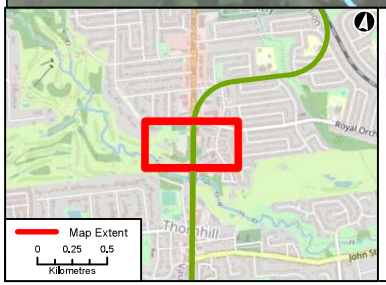
Segment 2 - Figure 15

METROLINX
Infrastructure Ontario

Data Sources:
Aerial imagery provided by ESRI dated 2019.
Mapping contains open data from TRCA & Municipal/Provincial Data Catalogues.

Jan, 2022	1:1,600	One+
P 067400	Rev 0	





Legend

- Study Area
- Property Fabric
- Proposed Subway Alignment (Below Grade)
- Potential Station Platform Area
- Proposed TPSS Location
- Proposed EEB Location
- Watercourse

Designs are conceptual and subject to change.

Yonge North Subway Extension (YNSE)
YNSE EPR Addendum Mapping

0 25 50
Metres
Datum: NAD27 MTM zone 10

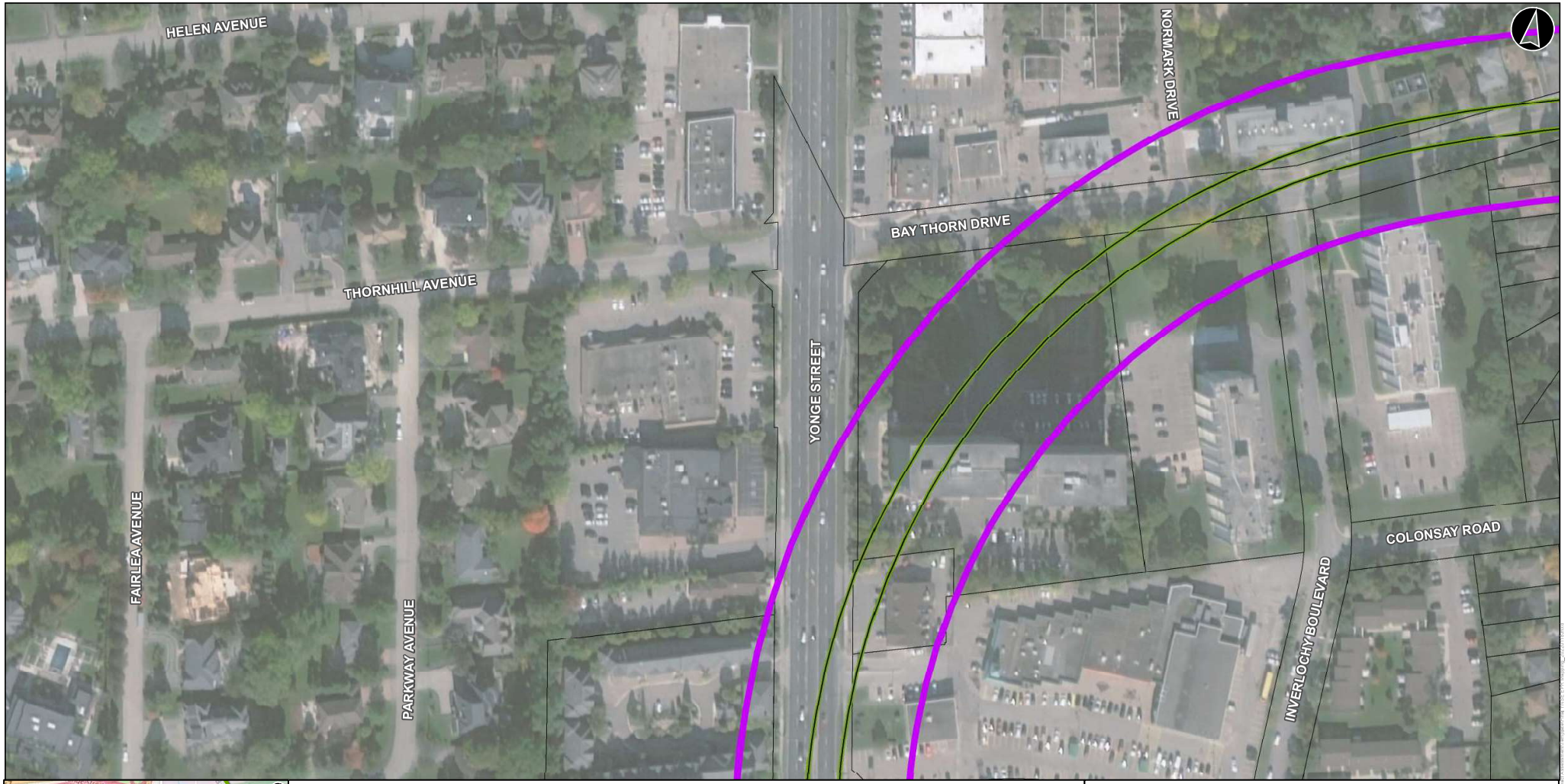
Segment 2 - Figure 16

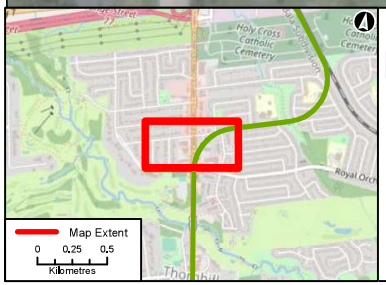
METROLINX
Infrastructure Ontario

Data Sources:
Aerial imagery provided by ESRI dated 2019.
Mapping contains open data from TRCA & Municipal/Provincial Data Catalogues.

Jan, 2022	1:1,600
P 067400	Rev 0

One





Legend

- Study Area
- Proposed Subway Alignment (Below Grade)
- Property Fabric

Designs are conceptual and subject to change.

Yonge North Subway Extension (YNSE)
YNSE EPR Addendum Mapping

0 25 50
Metres
Datum: NAD27 MTM zone 10

Segment 2 - Figure 17

METROLINX
Infrastructure Ontario

Data Sources:
Aerial imagery provided by ESRI dated 2019.
Mapping contains open data from TRCA & Municipal/Provincial Data Catalogues.

Jan, 2022	1:1,600
P 067400	Rev 0

One

Proposed EEB layout to be confirmed

Legend

- Study Area
- Proposed Subway Alignment (Below Grade)
- Proposed EEB Location
- Watercourse
- Property Fabric

Designs are conceptual and subject to change.

Yonge North Subway Extension (YNSE)
YNSE EPR Addendum Mapping

0 25 50
Metres
Datum: NAD27 MTM zone 10

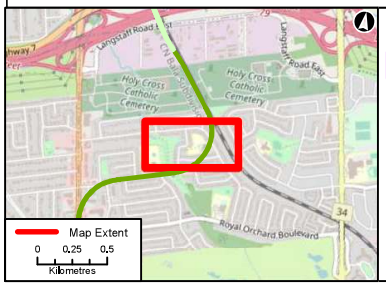
Segment 2 - Figure 18

METROLINX
Infrastructure Ontario

Data Sources:
Aerial imagery provided by ESRI dated 2019.
Mapping contains open data from TRCA & Municipal/Provincial Data Catalogues.

Jan, 2022	1:1,600	One
P 067400	Rev 0	

Proposed EEB layout to be confirmed



Legend

- Study Area
- Proposed Subway Alignment (Below Grade)
- Proposed EEB Location
- Existing CN Track / Metrolinx Richmond Hill Corridor
- Watercourse
- CN Right-of-Way
- Property Fabric

Designs are conceptual and subject to change.

Yonge North Subway Extension (YNSE)
YNSE EPR Addendum Mapping

0 25 50
Metres
Datum: NAD27 MTM zone 10

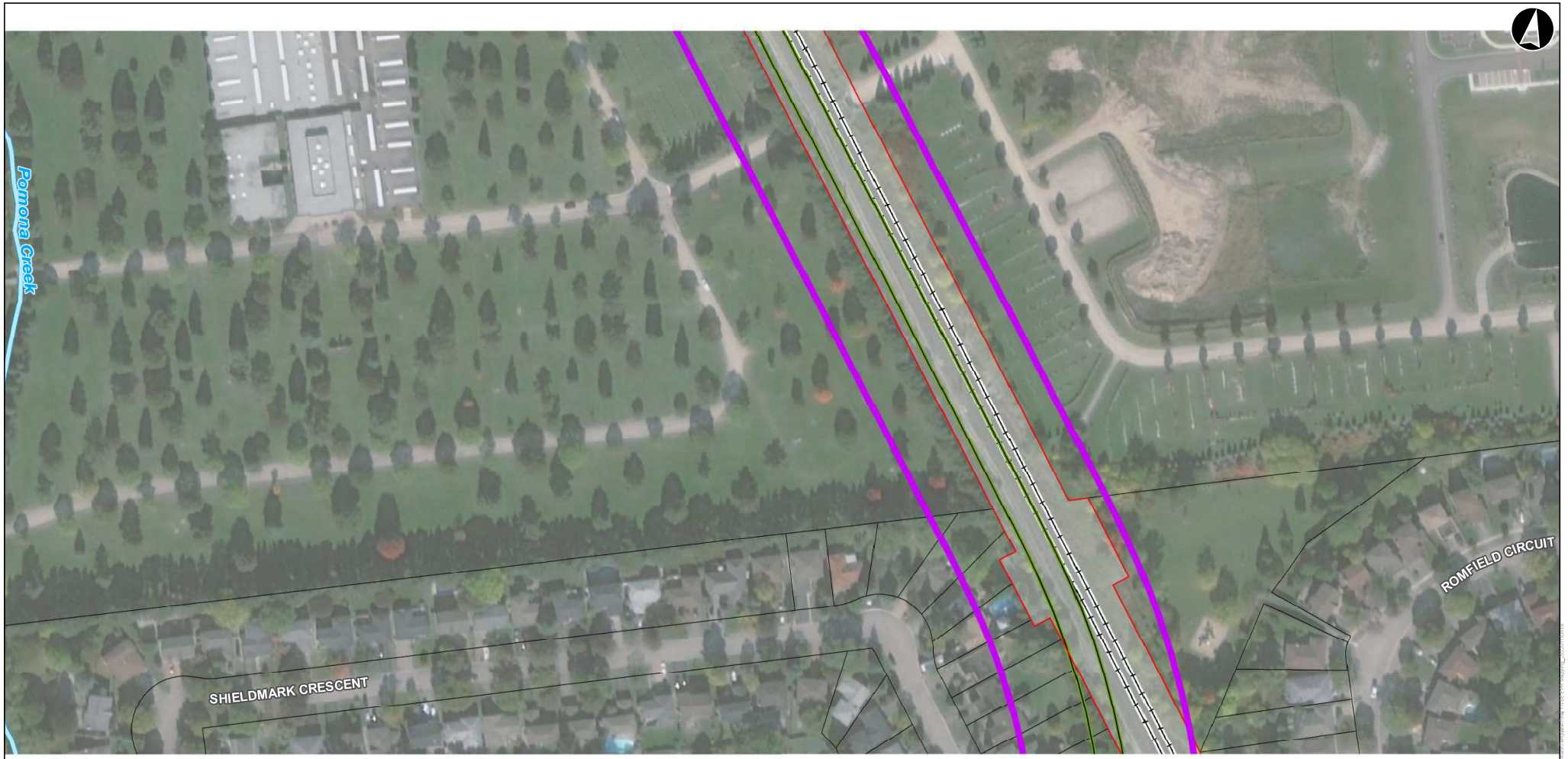
Segment 2 - Figure 19

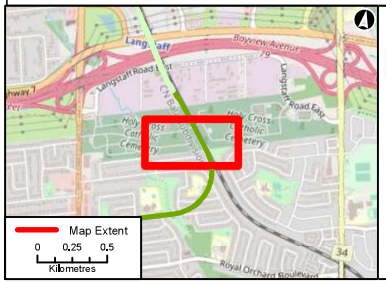
METROLINX
Infrastructure Ontario

Data Sources:
Aerial imagery provided by ESRI dated 2019.
Mapping contains open data from TRCA & Municipal/Provincial Data Catalogues.

Jan, 2022	1:1,600
P 067400	Rev 0

One+





Legend

- Study Area
- Proposed Subway Alignment (Below Grade)
- Existing CN Track / Metrolinx Richmond Hill Corridor
- Watercourse
- CN Right-of-Way
- Property Fabric

Designs are conceptual and subject to change.

Yonge North Subway Extension (YNSE)
YNSE EPR Addendum Mapping

0 25 50
Metres
Datum: NAD27 MTM zone 10

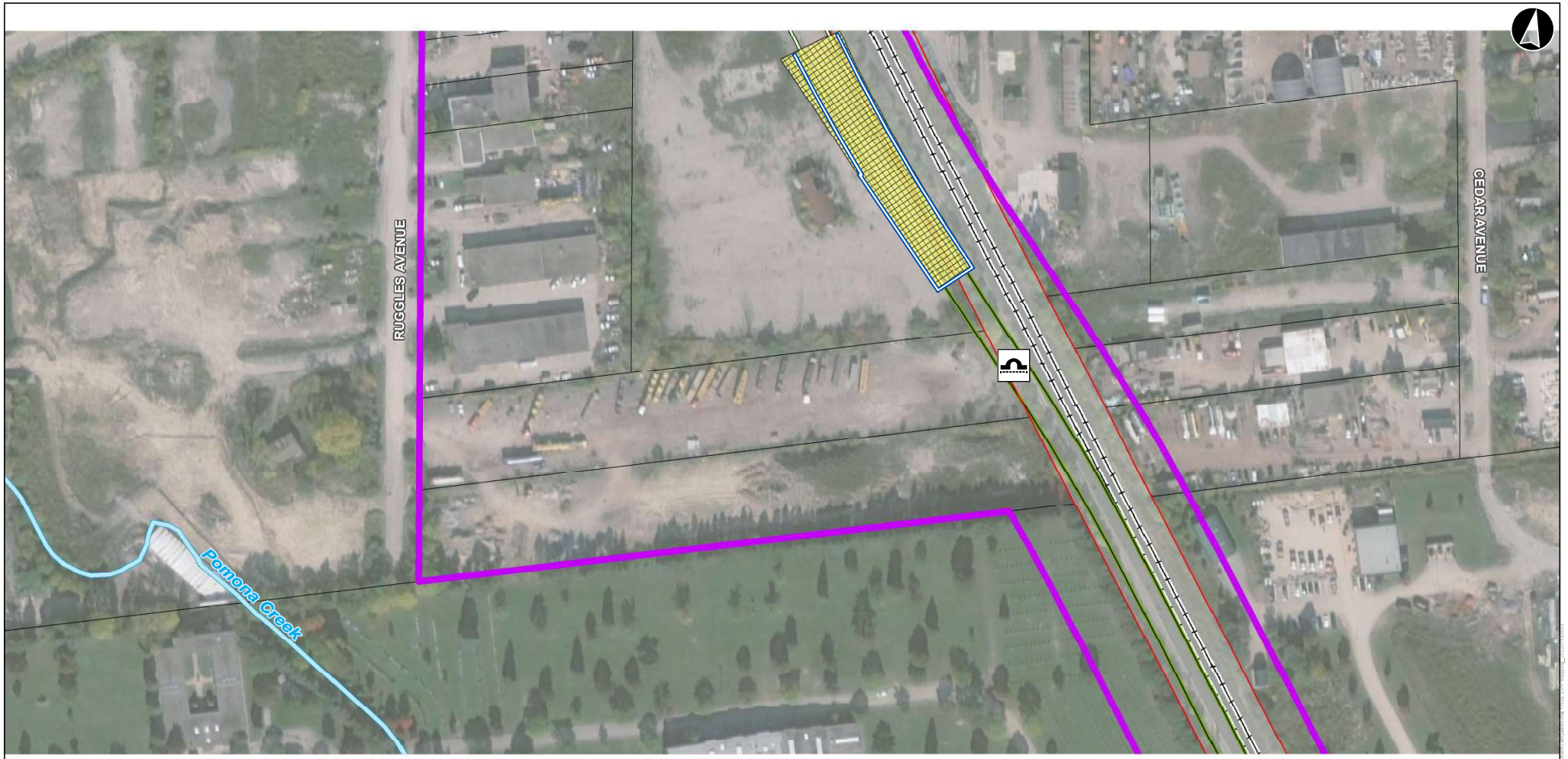
Segment 2 - Figure 20

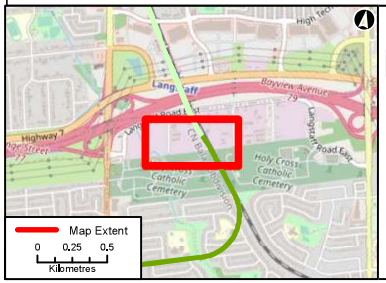
METROLINX
Infrastructure Ontario

Data Sources:
Aerial imagery provided by ESRI dated 2019.
Mapping contains open data from TRCA & Municipal/Provincial Data Catalogues.

Jan, 2022	1:1,600
P 067400	Rev 0

One+





Legend

- Study Area
- Proposed Subway Alignment (At Grade)
- Proposed Subway Alignment (Below Grade)
- Proposed Launch Shaft
- Proposed Portal Structure
- Proposed Culvert Relocation
- Existing CN Track / Metrolinx Richmond Hill Corridor
- Watercourse
- CN Right-of-Way
- Property Fabric

Designs are conceptual and subject to change.

Yonge North Subway Extension (YNSE)
YNSE EPR Addendum Mapping

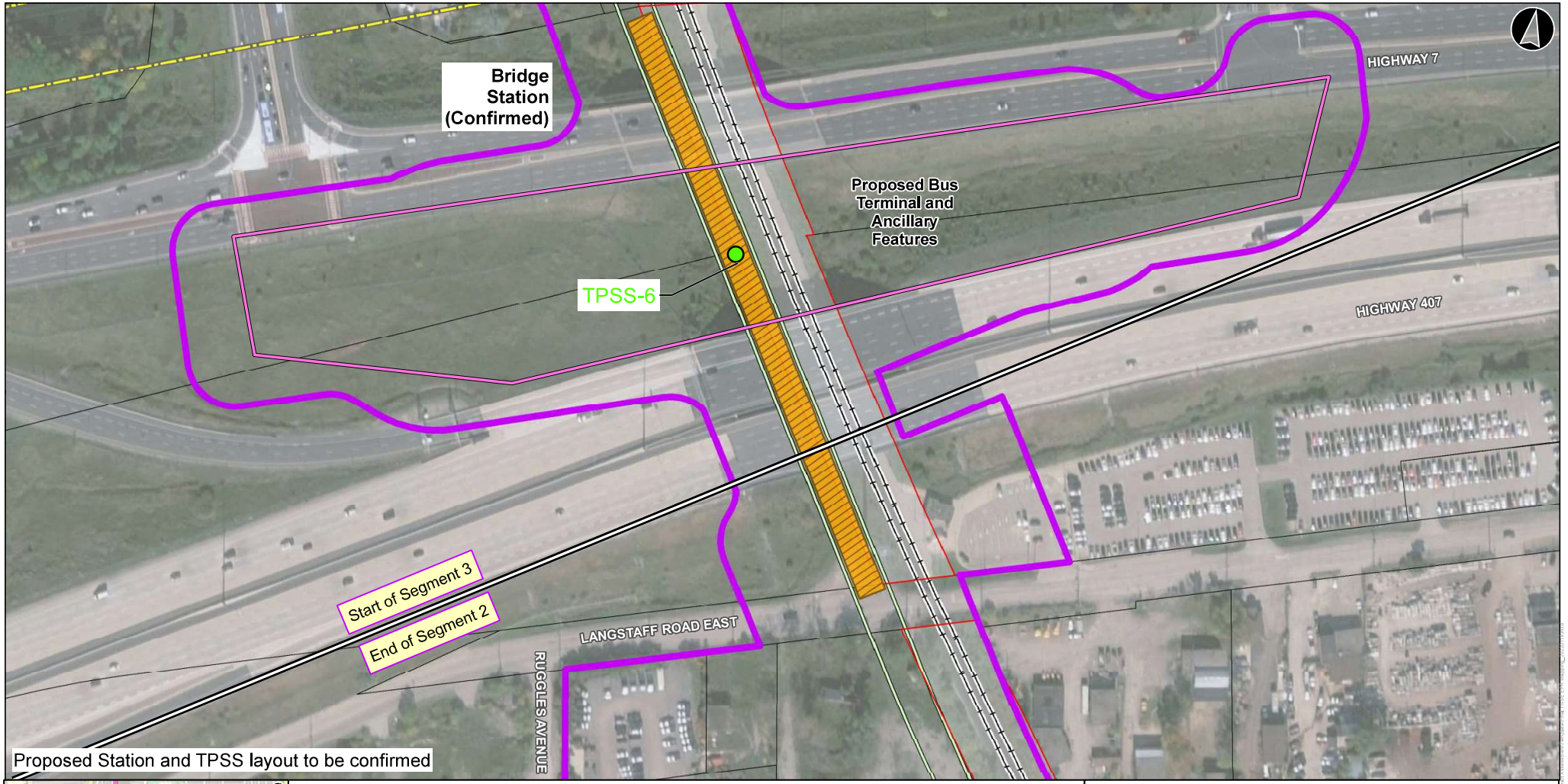
0 25 50
Metres
Datum: NAD27 MTM zone 10

Segment 2 - Figure 21

METROLINX
Infrastructure Ontario

Data Sources:
Aerial imagery provided by ESRI dated 2019.
Mapping contains open data from TRCA & Municipal/Provincial Data Catalogues.

Jan, 2022	1:1,600
P 067400	Rev 0



Legend

- Study Area Segment Breakline
- Study Area
- Proposed Subway Alignment (At Grade)
- Confirmed Station Platform Area
- Proposed Bus Terminal and Ancillary Features
- Proposed TPSS Location
- Proposed Launch Shaft
- Existing CN Track / Metrolinx Richmond Hill Corridor
- Existing Hydro One Transmission
- CN Right-of-Way
- Property Fabric

Designs are conceptual and subject to change.

Yonge North Subway Extension (YNSE)
YNSE EPR Addendum Mapping

0 25 50
Metres
Datum: NAD27 MTM zone 10

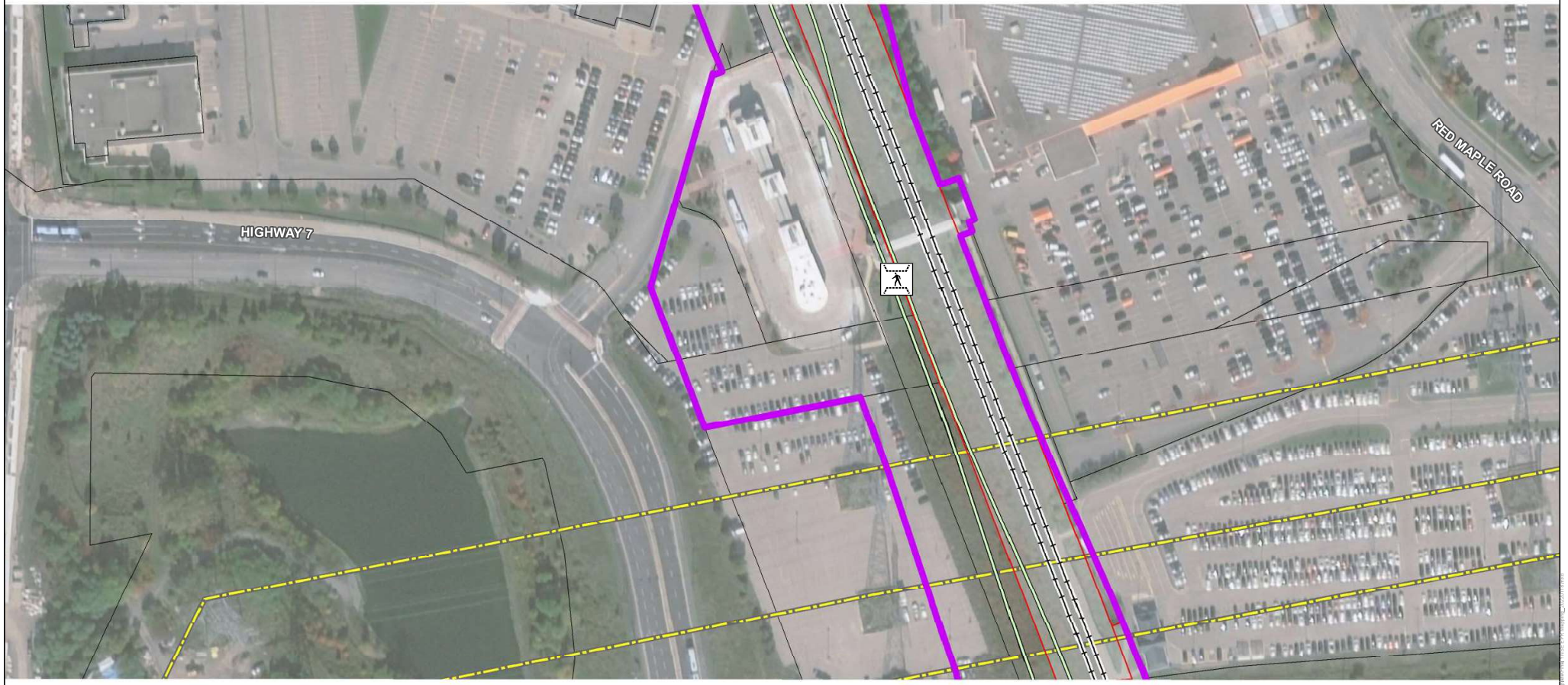
Segment 2/3 - Figure 22

METROLINX
Infrastructure Ontario

Data Sources:
Aerial imagery provided by ESRI dated 2019.
Mapping contains open data from TRCA & Municipal/Provincial Data Catalogues.

Jan, 2022	1:1,600
P 067400	Rev 0

One



Legend

- Study Area
- Proposed Subway Alignment (At Grade)
- Proposed Temporary Pedestrian Bridge
- Existing CN Track / Metrolinx Richmond Hill Corridor
- Existing Hydro One Transmission
- CN Right-of-Way
- Property Fabric

Designs are conceptual and subject to change.

Yonge North Subway Extension (YNSE)
YNSE EPR Addendum Mapping

0 25 50
Metres
Datum: NAD27 MTM zone 10

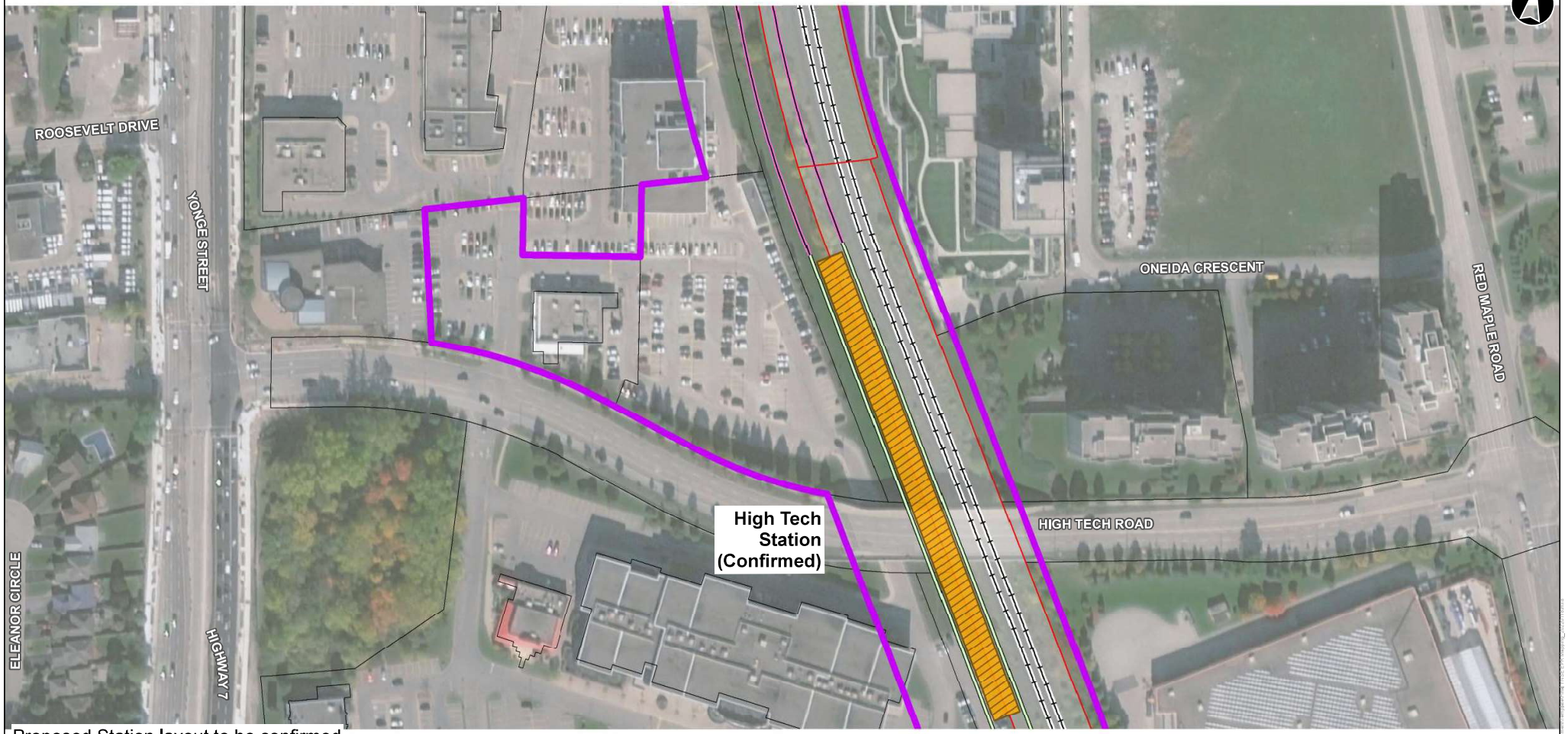
Segment 3 - Figure 23

METROLINX
Infrastructure Ontario

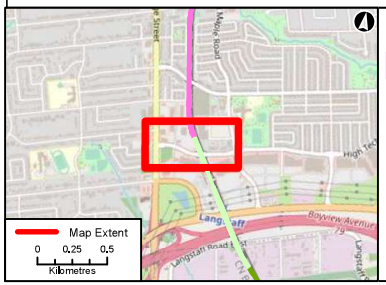
Data Sources:
Aerial imagery provided by ESRI dated 2019.
Mapping contains open data from TRCA & Municipal/Provincial Data Catalogues.

Jan, 2022	1:1,600
P 067400	Rev 0

One



Proposed Station layout to be confirmed



Legend

- Study Area
- Proposed Subway Alignment (At Grade)
- Proposed Train Storage Facility Alignment
- Confirmed Station Platform Area
- Existing CN Track / Metrolinx Richmond Hill Corridor
- CN Right-of-Way
- Property Fabric

Designs are conceptual and subject to change.

Yonge North Subway Extension (YNSE)
YNSE EPR Addendum Mapping

0 25 50
Metres
Datum: NAD27 MTM zone 10

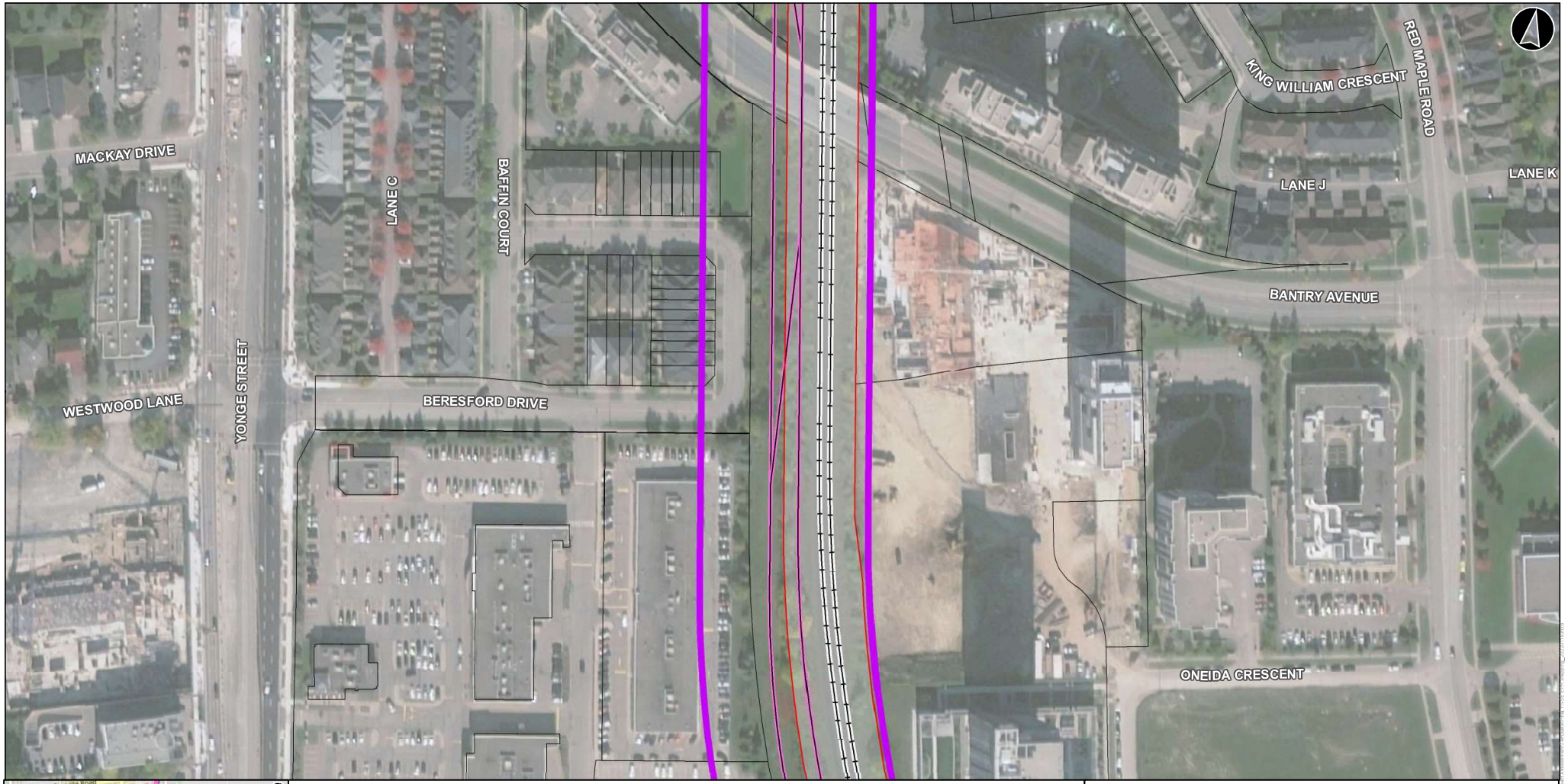
Segment 3 - Figure 24

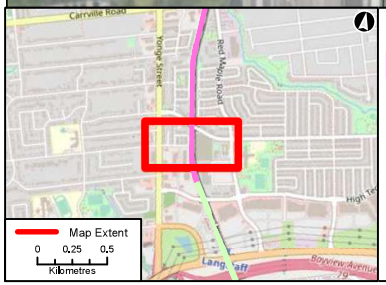
METROLINX
Infrastructure Ontario

Data Sources:
Aerial imagery provided by ESRI dated 2019.
Mapping contains open data from TRCA & Municipal/Provincial Data Catalogues.

Jan, 2022	1:1,600
P 067400	Rev 0

One





Legend

- Study Area
- Proposed Train Storage Facility Alignment
- Existing CN Track / Metrolinx Richmond Hill Corridor
- CN Right-of-Way
- Property Fabric

Designs are conceptual and subject to change.

Yonge North Subway Extension (YNSE)
YNSE EPR Addendum Mapping

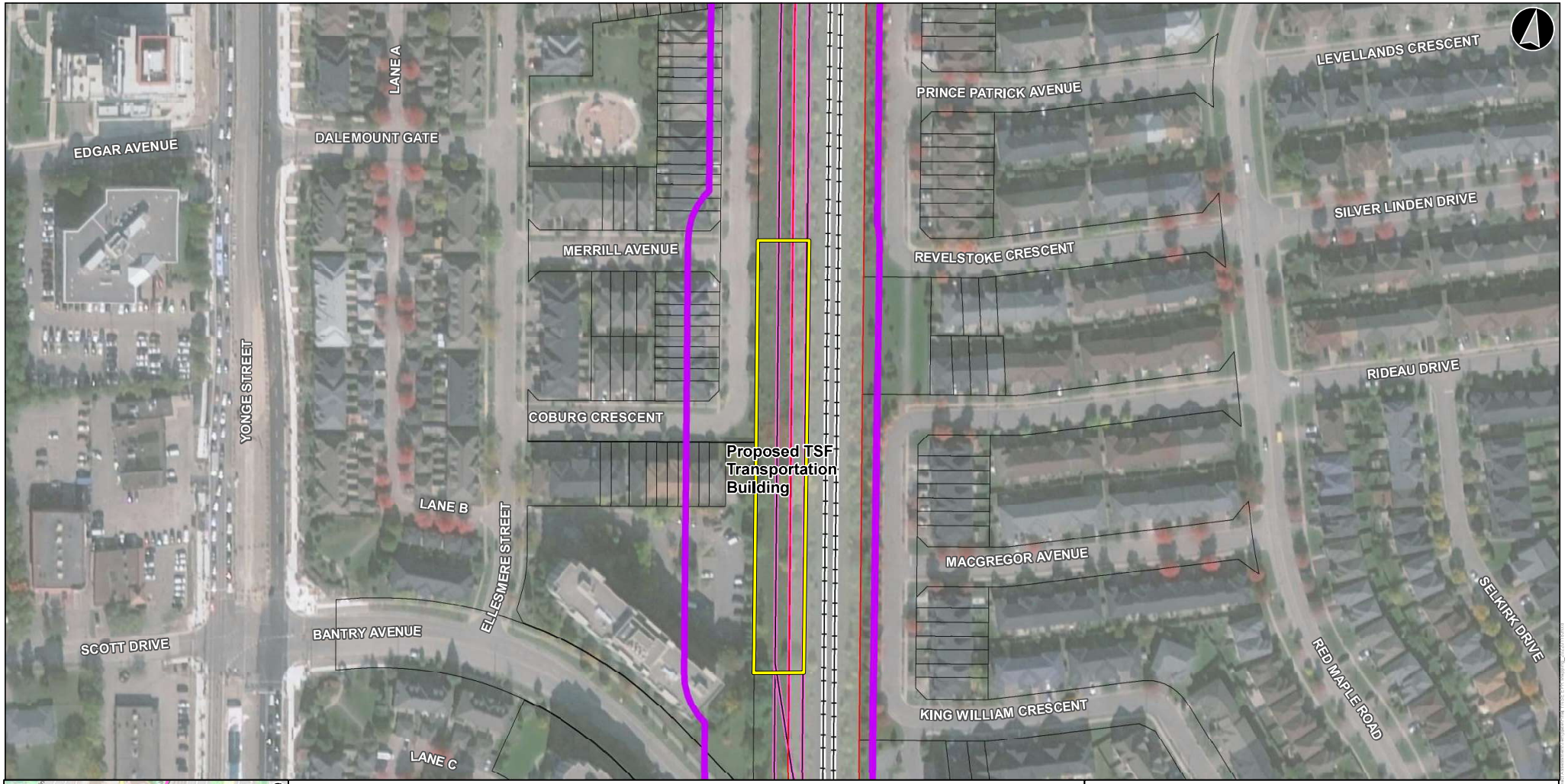
0 25 50
Metres
Datum: NAD27 MTM zone 10

Segment 3 - Figure 25

METROLINX
Infrastructure Ontario

Data Sources:
Aerial imagery provided by ESRI dated 2019.
Mapping contains open data from TRCA & Municipal/Provincial Data Catalogues.

Jan, 2022	1:1,600
P 067400	Rev 0



Legend

- Study Area
- Proposed Train Storage Facility Alignment
- Proposed TSF Transportation Building
- Existing CN Track / Metrolinx Richmond Hill Corridor
- CN Right-of-Way
- Property Fabric

Designs are conceptual and subject to change.

Yonge North Subway Extension (YNSE)
YNSE EPR Addendum Mapping

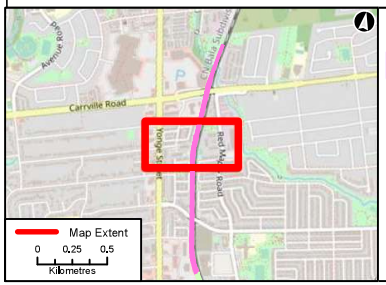
0 25 50
Metres
Datum: NAD27 MTM zone 10

Segment 3 - Figure 26

METROLINX
Infrastructure Ontario

Data Sources:
Aerial imagery provided by ESRI dated 2019.
Mapping contains open data from TRCA & Municipal/Provincial Data Catalogues.

Jan, 2022	1:1,600
P 067400	Rev 0



Legend

- Study Area
- Proposed Train Storage Facility Alignment
- Existing CN Track / Metrolinx Richmond Hill Corridor
- CN Right-of-Way
- Property Fabric

Designs are conceptual and subject to change.

Yonge North Subway Extension (YNSE)
YNSE EPR Addendum Mapping

0 25 50
Metres
Datum: NAD27 MTM zone 10

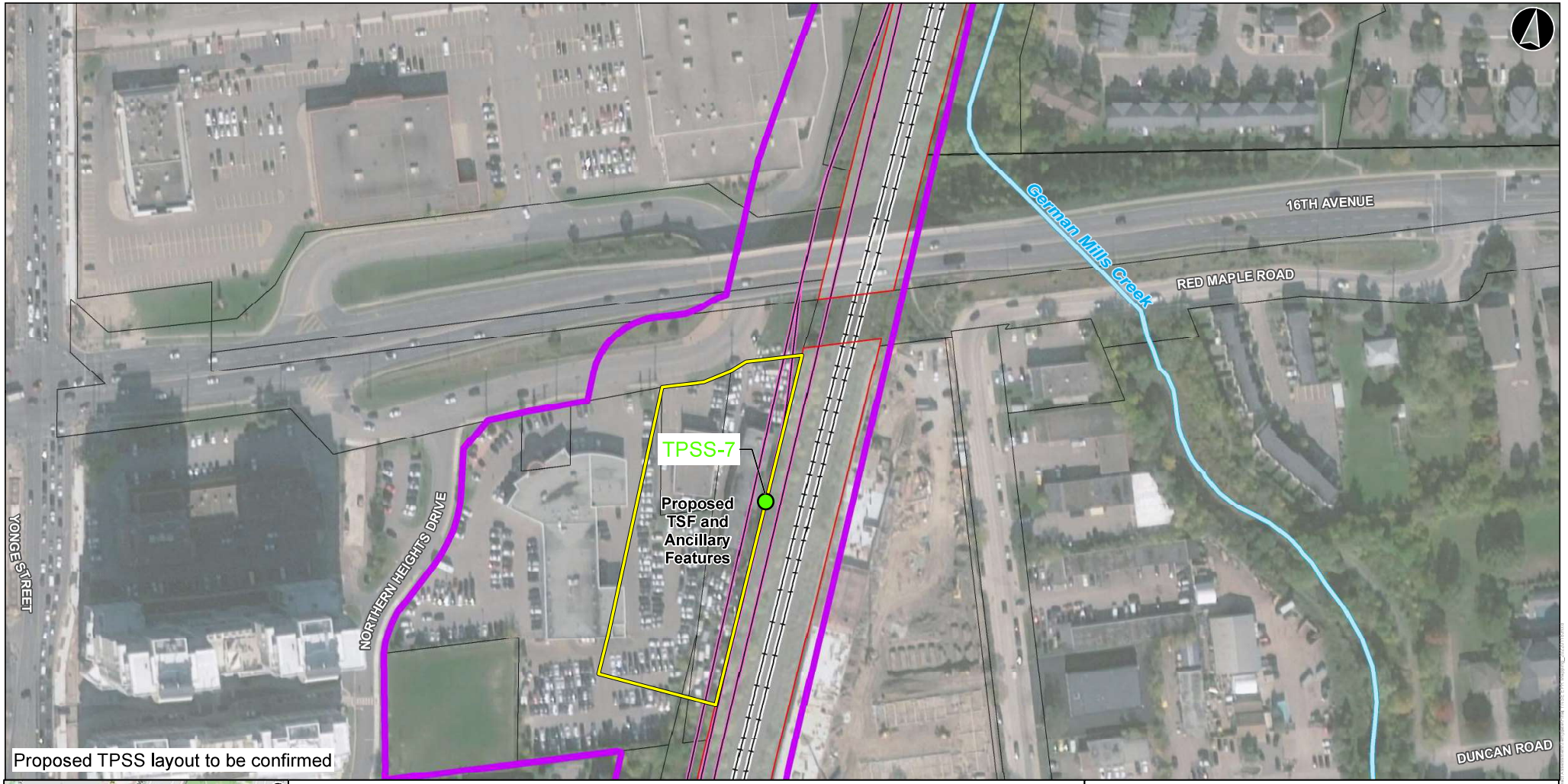
Segment 3 - Figure 27

METROLINX
Infrastructure Ontario

Data Sources:
Aerial imagery provided by ESRI dated 2019.
Mapping contains open data from TRCA & Municipal/Provincial Data Catalogues.

Jan, 2022	1:1,600
P 067400	Rev 0

One



Legend

- Study Area
- Proposed Train Storage Facility Alignment
- Proposed TSF and Ancillary Features
- Proposed TPSS Location
- Existing CN Track / Metrolinx Richmond Hill Corridor
- Watercourse
- CN Right-of-Way
- Property Fabric

Designs are conceptual and subject to change.

Yonge North Subway Extension (YNSE)
YNSE EPR Addendum Mapping

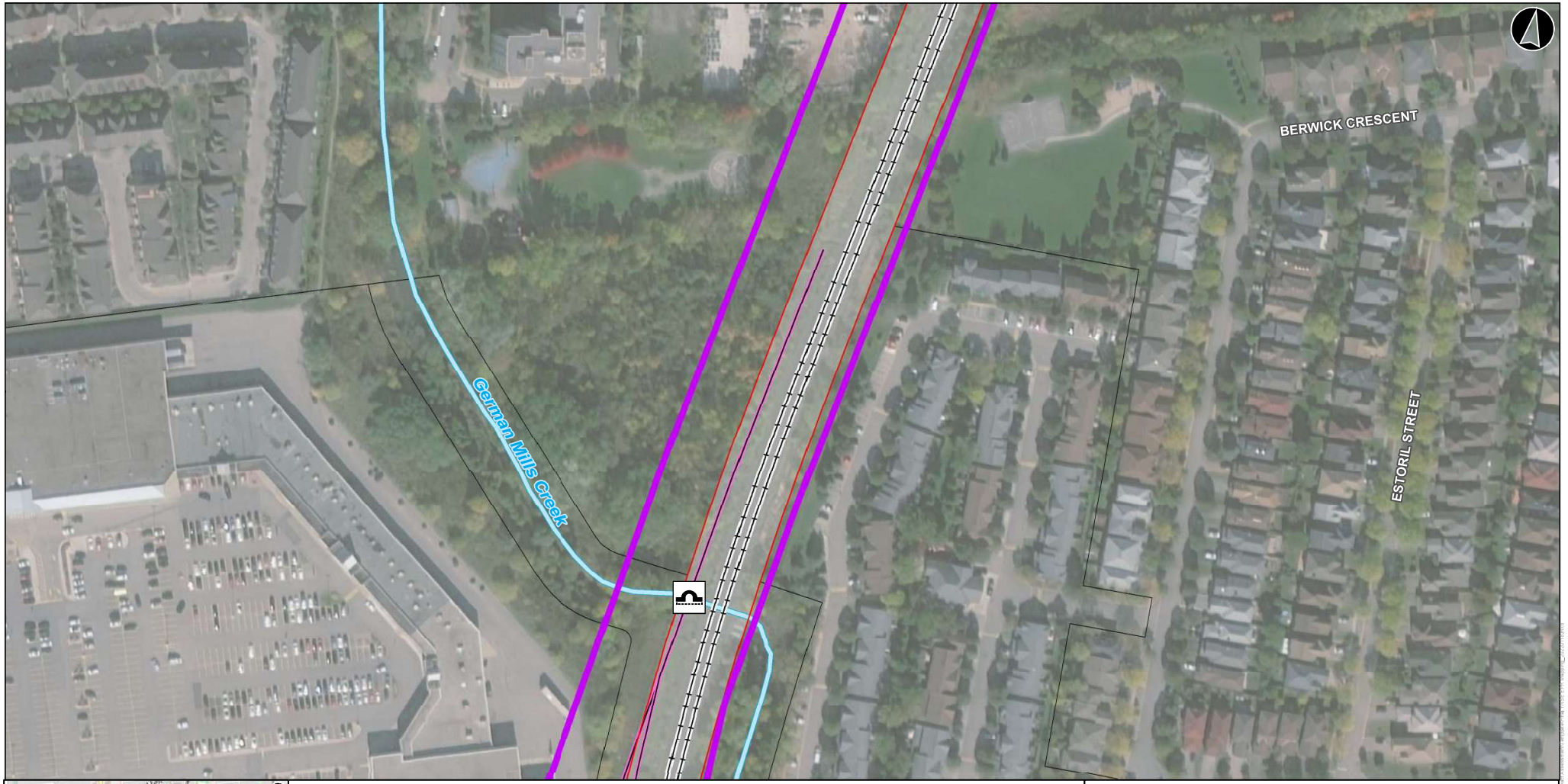
0 25 50
Metres
Datum: NAD27 MTM zone 10

Segment 3 - Figure 28

METROLINX
Infrastructure Ontario

Data Sources:
Aerial imagery provided by ESRI dated 2019.
Mapping contains open data from TRCA & Municipal/Provincial Data Catalogues.

Jan, 2022	1:1,600
P 067400	Rev 0



Legend

- Study Area
- Proposed Train Storage Facility Alignment
- Proposed Culvert Replacement
- Existing CN Track / Metrolinx Richmond Hill Corridor
- Watercourse
- CN Right-of-Way
- Property Fabric

Designs are conceptual and subject to change.

Yonge North Subway Extension (YNSE)
YNSE EPR Addendum Mapping

0 25 50
Metres
Datum: NAD27 MTM zone 10

Segment 3 - Figure 29

METROLINX
Infrastructure Ontario

Data Sources:
Aerial imagery provided by ESRI dated 2019.
Mapping contains open data from TRCA & Municipal/Provincial Data Catalogues.

Jan, 2022	1:1,600
P 067400	Rev 0

Legend

- Study Area
- Existing CN Track / Metrolinx Richmond Hill Corridor
- Watercourse
- CN Right-of-Way
- Property Fabric

Designs are conceptual and subject to change.

Yonge North Subway Extension (YNSE)
YNSE EPR Addendum Mapping

0 25 50
Metres
Datum: NAD27 MTM zone 10

Segment 3 - Figure 30

METROLINX
Infrastructure Ontario

Data Sources:
Aerial imagery provided by ESRI dated 2019.
Mapping contains open data from TRCA & Municipal/Provincial Data Catalogues.

Jan, 2022	1:1,600
P 067400	Rev 0

One