Natural Heritage Report










EGLINTON EAST LIGHT RAIL TRANSIT
TRANSIT PROJECT ASSESSMENT PROCESS

prepared for:

HDR

prepared by:

LGL LIMITED
environmental research associates

OCTOBER 2023

NATURAL HERITAGE REPORT

EGLINTON EAST LIGHT RAIL TRANSIT
TRANSIT PROJECT ASSESSMENT PROCESS

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LGL Project # TA9307

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1.0 INTRODUCTION

The Eglinton East Light Rail Transit (EELRT) is a proposed 18-kilometre light rail transit (LRT) system in Scarborough. The line would extend from Kennedy Station to Malvern Town Centre via the University of Toronto Scarborough Campus (UTSC), with a connection to the future Line 2 terminus at Sheppard Avenue and McCowan Road. The project includes:

- 27 stops;
- Trains every 4 to 5 minutes during peak periods;
- Connection to Line 2 and Line 5 at Kennedy Station;
- Connection with the future station at Sheppard-McCowan, which is anticipated to be the terminus of both Line 2 and the potential Line 4 extension;
- Three connections to GO regional rail at Kennedy, Eglinton, and Guildwood stations;
- A connection to the proposed Durham-Scarborough Bus Rapid Transit (DSBRT) at the University of Toronto Scarborough Campus (UTSC); and,
- Maintenance and Storage Facility (MSF) at Conlins Road and Sheppard Avenue.

Since Provincial approval of the Scarborough-Malvern Light Rail Transit (SMLRT) Transit Project Assessment Process (TPAP) EA under Transit City in 2009, a number of studies and analyses have been undertaken. Given the elapsed time since completion of the SMLRT TPAP in 2009 under Transit City, and significant additions and modifications to the scope since noted herein, the City is undertaking a new TPAP for the EELRT network, rather than an amendment to the previous SMLRT TPAP.

The environmental impact of this transit project is being assessed in accordance with the Transit Project Assessment Process (TPAP) as outlined in Ontario Regulation 231/08. As part of the TPAP, an Environmental Project Report is in preparation and will be available for public review in 2023.

HDR was retained by the City of Toronto to lead the project and LGL Limited was retained by HDR to carry out a natural heritage investigation for this project. The purpose of this Natural Heritage Report is to document the results of the natural heritage investigation including data collection and analysis, field investigations, impact assessment and identification of impact management measures. The Natural Heritage Report represents a compilation of work conducted by LGL Limited for the Scarborough-Malvern LRT, the Durham-Scarborough BRT and the EELRT.

2.0 STUDY AREA

The study area extends from the Kennedy Station to the Malvern Town Centre, via the University of Toronto Scarborough Campus, with a connection to a future Line 2 Terminus at Sheppard Avenue and McCowan Road. The study area is presented in **Figure 1**.

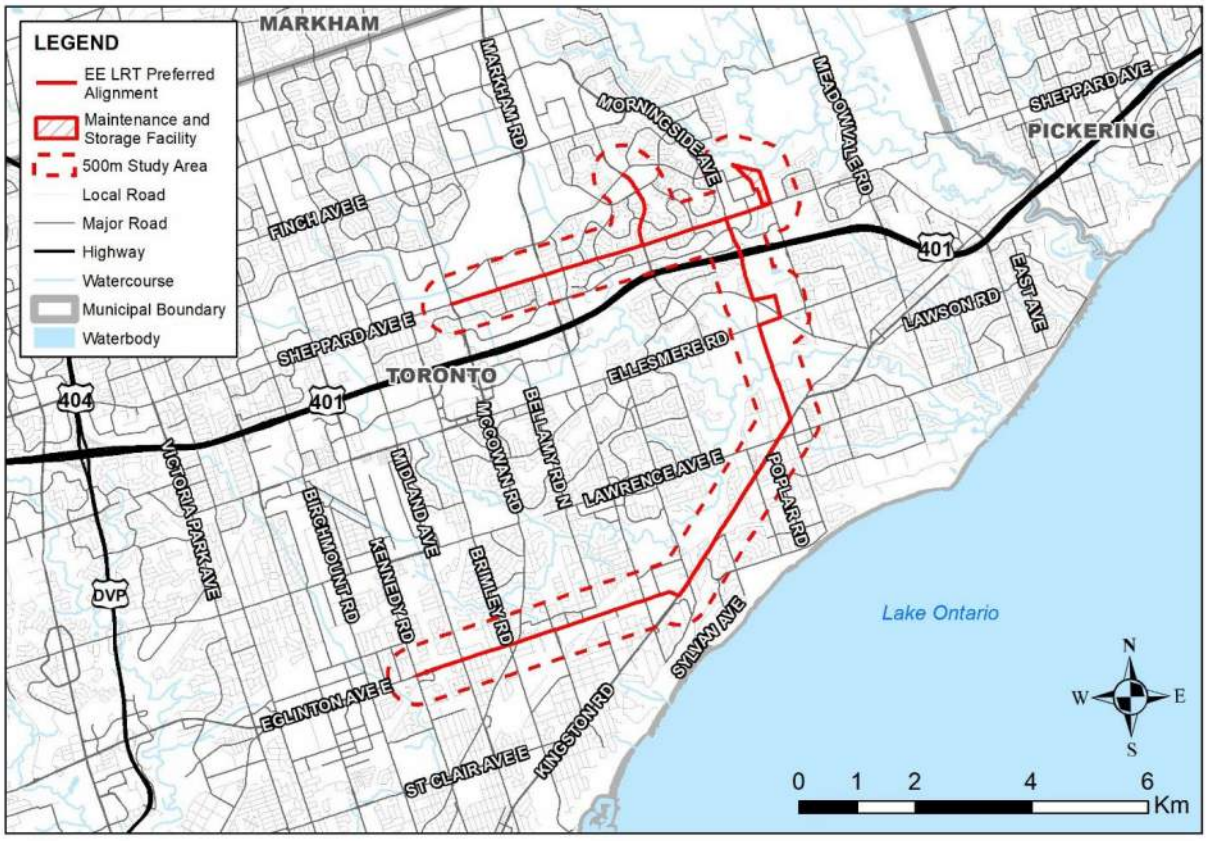

FIGURE 1: STUDY AREA

3.0 EXISTING CONDITIONS

This section describes the existing conditions in the study area related to natural heritage, including: physiography, bedrock and surficial geology; fish and fish habitat: vegetation and vegetation communities; wildlife and wildlife habitat; and, designated natural areas.

3.1 Physiography, Bedrock and Surficial Geology

3.1.1 Physiography

The study area lies within two physiographic regions – the South Slope and the Lake Iroquois Plain. The South Slope is a smooth, faintly *drumlinized* clay till plain containing the deeply incised stream valleys of the Credit, Humber, Don, and Rouge rivers. Elevations range from about 280 mASL where the South Slope intersects the Oak Ridges Moraine to about 80 mASL near the Lake Ontario shoreline. The Iroquois Lake Plain represents the near-shore area of glacial Lake Iroquois. Wave action on this predecessor to Lake Ontario cut down and smoothed the Halton and older tills and deposited beach sand and lake-bottom silts and clays within 5 km of the present shoreline. The EELRT crosses the shoreline of the Lake Iroquois Plain in several locations.

3.1.2 Bedrock Geology

Bedrock geology comprises the Georgian Bay Formation that is upper Ordivician in age and comprised primarily of shale.

3.1.3 Surficial Geology

Surficial geology comprises Young Tills, which comprise clayey, silt tills; Lake Iroquois shallow water deposits, which comprise sand, silty sand; Lake Iroquois beach or bar deposits, which comprise gravel, sand; Modern River Deposits, which comprise sand, silt, minor gravel and organic material; and, Peel Ponds shallow water deposits, which comprise sand.

3.2 Fish and Fish Habitat

The study area is located within the Highland Creek and Rouge River watersheds. The Main Branch of Highland Creek crosses Morningside Avenue, while the Markham Branch and Malvern Branch cross Sheppard Avenue. A Tributary of Morningside Creek, a tributary of the Rouge River, crosses Sheppard Avenue at Collins Road. All watercourses are under the jurisdiction of the Toronto and Region Conservation Authority (TRCA) and the Ministry of Natural Resources (MNRF) Aurora District.

The aquatic habitat investigation completed by LGL was done to document fish habitat conditions at watercourse road crossings within the study area. **Figure 2** presents the location of the watercourse crossing and an aquatic habitat summary is presented below.

In addition, a secondary source information review was undertaken to identify the fisheries resources and associated aquatic habitat within the study area. The secondary source review included correspondence with the TRCA regarding fish collection records in the study area watercourses. A summary of these data is presented in **Table 1** and is incorporated into the watercourse discussions below.

3.2.1 Highland Creek Main Branch

Highland Creek flows in an easterly direction across Morningside Avenue approximately 740 m south of the Ellesmere Road intersection. It travels across Morningside Avenue under a large bridge. The river and valley are wide within the study area. The channel upstream contained a mixed morphology of runs and riffles with a single pool. The pool was located downstream of a concrete weir that was approximately 50 cm high. The water was clear and the substrates were comprised of boulder, cobble, gravel and sand. Mean channel width varied from 5 m in one riffle to 20 m at the pool and downstream run. Water depth similarly varied from 10 cm in riffles to 75 cm at the pool. Instream cover was provided by boulders and cobbles. No instream vegetation was observed. Riparian vegetation consisted of mixed forest and open areas associated with pathways and a works yard. The concrete weir was located adjacent to the works yard and the southern bank in that area was reinforced with armourstone blocks.

Downstream (east) of Morningside Avenue, large, angular boulders have been placed in the water to create riffles. As a result, the entire morphology of the downstream 100 m investigated consisted of riffle habitat. The width varied from 15 m to 30 m and depth between 10 cm and 20 cm. Substrates were comprised of boulders, cobble, gravel and sand. Instream cover was provided by boulders and cobbles. A new outfall pipe was present on the southern bank at the bridge and recent work was done on both banks within the downstream area investigated as coconut matting and live stakes were present. Riparian vegetation was similar to upstream. Water temperature during the field investigation was 20.4°C at 11:08 when air temperature was 25°C.

No formal fish collection was undertaken at this location during the site visit, but many fish were observed. Most were identified as Blacknose Dace (*Rhinichthys atratulus*) and there were some Common Shiner (*Luxilus cornutus*), as well. Historic fisheries data provided by the TRCA indicate that nine species have been captured from this watercourse at four stations located within 500 m of the crossing (two upstream and two downstream). These include warmwater baitfish and sportfish and coldwater sportfish (**Table 1**).

Eglinton East LRT Natural Heritage Overview

- TRCA - 2018 Fish Data
- ARA Survey Point
- ARA Watercourse
- ARA Waterbody
- DFO SARA Critical Habitat
- DFO SARA Risk Distribution
- DFO Channel Line
- DFO Channel Polygon
- EE LRT Study Area
- Maintenance and Storage Facility
- 500m from EE LRT Study Area
- TRCA Regulation Limit

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Project:	TA9307	**Figure:**	2
Date:	August, 2023	**Prepared By:**	AM
Scale:	1:32,000	**Verified By:**	GNK

Data sources: Ministry of Natural Resources and Forestry, Fisheries and Oceans Canada. Contains information licenced under the Open Government Licence - Ontario.

TABLE 1.
FISH COLLECTED HISTORICALLY IN THE STUDY AREA WATERCOURSES

Scientific Name	Common Name	COSEWIC	MNR	Provincial	Legal Status	Watercourse			
						Highland Creek – Main Branch	Highland Creek – Markham Branch	Highland Creek – Malvern Branch	Trib. of Morningside Creek
Salmo trutta	Brown Trout	-	-	SE	-	X			
Semotilus atromaculatus	Creek Chub	-	-	S5	-	X		X	
Rhinichthys atratulus	Blacknose Dace	-	-	S5	-	X	X	X	
Rhinichthys cataractae	Longnose Dace	-	-	S5	-	X	X	X	
Luxilus cornutus	Common Shiner	-	-	S5	-	X			
Pimephales notatus	Bluntnose Minnow	-	-	S5	-	X			
Catostomus commersoni	White Sucker	-	-	S5	-		X		
Noturus flavus	Stonecat	-	-	S4	-	X		X	
Ambloplites rupestris	Rock Bass	-	-	S5	-	X			
Etheostoma nigrum	Johnny Darter	-	-	S5	-	X			
Etheostoma caeruleum	Rainbow Darter	-	-	S4	-	X			

COSEWIC – Committee on the Status of Endangered Wildlife in Canada:
- END – Endangered
- THR – Threatened
- SC – Special Concern
- XT – Extirpated
- NAR – Not at Risk

MNR – Ontario Ministry of Natural Resources:
- END – Endangered
- THR – Threatened
- VUL – Vulnerable
- EXP – Extirpated
- NAR – Not at Risk

Provincial:
- S1 – Extremely Rare
- S2 – Very Rare
- S3 – Rare to Uncommon
- S4 – Common
- S5 – Very Common
- SE – Exotic
- SXP – Extirpated

Legal Status:
- MBCA – Migratory Birds Convention Act
- SARA – Species at Risk Act
- ESA – Endangered Species Act
- FWCA – Fish and Wildlife Conservation Act - (P) Protected Species; (G) Game Species; (F) Furbearing Mammals

3.2.2 Markham Branch of Highland Creek

The Markham Branch of Highland Creek flows in a southeasterly direction across Sheppard Avenue approximately 265 m east of the McCowan Road intersection. The watercourse has been completely channelized with concrete both upstream and downstream of the crossing. It travels under Sheppard Avenue through a concrete bridge. Both the upstream and downstream channel was contained within a concrete trapezoidal channel. Water flowed in the centre of the channel through a small low-flow depression within the concrete. Upstream, no sediment deposits were observed and the channel consists of one long flat, approximately 3 m wide and 5-10 cm deep. No instream cover existed upstream of the bridge within the entire area investigated (>100 m). Bank vegetation consisted of grasses and scattered shrubs and small trees along the slopes leading up from the channel. No instream cover exists and the channel is completely exposed to the sun. Water temperature was measured at 28.9°C at 11:06 when air temperature was 27°C. A 1 m drop exists approximately 10 m upstream of the bridge which is a barrier to fish passage.

Downstream (south) of Sheppard Avenue, the channel characteristics are similar to upstream. Channel width, depth and riparian characteristics are all similar. However, there were a few areas of sediment deposits noted. Bankfull width was approximately 14 m and bankfull depth was 1.5 m. Iron staining was noted in the entire area downstream of the 1 m drop mentioned above to approximately 30 m downstream of the bridge (total length exhibiting these characteristics was 75 m, including the area under the bridge). These appeared to be seeps and/or springs emanating from cracks or holes in the concrete channel. At one such hole just downstream of the 1 m drop, water temperature was measured at 11.5°C at 11:03 when air temperature was 27°C. Water temperature downstream of the bridge was measured at 18.5°C in the main channel at 11:00 when air temperature was 27°C. Thus, the groundwater inputs to the watercourse lowered the temperature by more than 10°C within approximately 50 m.

No formal fish collection was undertaken at this location during the site visit and no fish were observed. Historic fisheries data provided by the TRCA indicate that three species have been captured from this watercourse at one station located at the Sheppard Avenue crossing. These include warmwater baitfish only.

3.2.3 Malvern Branch of Highland Creek

The Malvern Branch of Highland Creek flows in a southeasterly direction across Sheppard Avenue approximately 780 m east of Markham Road. The watercourse has been completely channelized with gabions both upstream and downstream of the crossing. It travels under Sheppard Avenue through a concrete bridge. The upstream channel is contained within a trapezoidal channel formed by gabions. Substrates are cobble and boulder (rip-rap from gabions) with some silt and detritus overlaying. Much

of the chainlink holding the gabions together appears to have degraded and much of it was not visible. The channel upstream consists of one long run which is approximately 7 m wide and 15-20 cm deep. The channel widens to approximately 10 m as it approaches the bridge. An outfall pipe exists on the northwest bank that discharges down a steep concrete ramp into the watercourse. A large pool has been scoured out at this location which appeared to be greater than 1 m deep. Instream cover consisted of boulders/cobbles and sparse submerged vegetation. Bank vegetation consisted of grasses and shrubs, in places dense and overhanging, which were growing along the slopes leading up from the channel. This vegetation appeared to be growing over gabions that have been silted over. These overhanging shrubs provided some shading to the watercourse.

Downstream (south) of Sheppard Avenue, the channel bends to the southeast along a steep slope enforced by layered gabions. The gradient was steeper downstream and riffles were present. Substrates were similar to upstream and the channel was reinforced with gabions throughout. The riffles were approximately 6-7 m wide and less than 10 cm deep. A shallow run was present just downstream of the bridge upstream of the riffle and was approximately 12 m wide and 20 cm deep. It contained some sparse submerged vegetation. Downstream of the riffle a small, deep pool existed (3 m wide by 150 cm deep) along the gabion wall. Erosion was occurring at this location. Instream cover was provided by boulders/cobbles, overhanging bank vegetation and some large woody debris. Dense shrubs lined the banks up to the base of the gabions. Above the gabions, large trees provided additional shading to the channel. Bankfull width was approximately 15 m and bankfull depth was 2.0 m. An area of groundwater upwelling was noted downstream of the crossing. Iron staining was noted and springs were observed coming up through the sandy substrates in a few areas. At one spring, water temperature was measured at 11.8°C at 11:51 when air temperature was 29°C. Water temperature downstream of the bridge at the riffle was measured at 18.5°C around the same time. Water temperature was also measured approximately 50 m upstream of the bridge and was 19.7°C at 12:19 when air temperature was 29°C.

No formal fish collection was undertaken at this location and no fish were observed. Historic fisheries data provided by the TRCA indicate that four species have been captured from this watercourse at two stations located at and downstream of the Sheppard Avenue crossing. These include warmwater baitfish only.

3.2.4 Tributary of Morningside Creek

The Tributary of Morningside Creek flows in a northeasterly direction across Sheppard Avenue approximately 600 m east of Morningside Drive. This watercourse has been channelized and consisted of a shallow ditch in which either cattails (*Typha* sp), *Phragmites*, or both were densely growing. No defined channel existed within the dense

vegetation growth on either side of Sheppard Avenue. The watercourse travels in a northerly direction to Sheppard Avenue, then crosses at a northeasterly skew. On the north side of Sheppard Avenue, it bends to the northeast and parallels the road as an open channel for approximately 30 m before entering a large box culvert on the upstream (west) side of a driveway. From there, prior to 2013 (according to historic air photos on Google Earth), there was an open channel that curved to the north and travelled to Morningside Creek located approximately 620 m north of the Sheppard Avenue. Some time between 2009 and 2013, the watercourse was piped from the driveway to a location approximately 125 m north of Sheppard Avenue which resulted in the loss of a 190 m to 200 m section of open channel. Currently, the watercourse emerges from a concrete box outfall and travels as an open channel for approximately 410 m to a very tall (~20 m) “ditch inlet” chamber that has an opening at its base. Water then travels for approximately 50 m under a paved path to where it outlets via a perched, open corrugated steel pipe that protrudes at a 45 degree angle from an eroded slope. From there, the watercourse continues in a relatively natural state for approximately 75-80 m into Morningside Creek. The 410 m open section of watercourse is completely lined with rectangular stone that forms a trapezoidal channel. For the first half, the gradient is relatively flat to moderate with much *Phragmites* and cattail growth. The small “valley” it occupies has 2:1 slopes that are well-vegetated with herbaceous plants as well as small trees and shrubs. Flowing water is present throughout and the wetted width was approximately 2 m with a mean depth of 10 cm near the outfall, then narrows as the gradient increases to 0.75 m with depths from 5 cm to 10 cm riffles over the rectangular stone. Approximately 160 m to 200 m downstream of the outfall the gradient increases and the valley deepens dramatically. Channel widths decrease to 0.5 m. The east slope, becomes much steeper with the west still at 2:1, but a bit further downstream the west slope steepens as well. The riparian habitat becomes relatively densely treed with mainly native deciduous species and some conifers. The gradient of the watercourse similarly increases, but the channel dimensions remain the same. Valley depth is approximately 50 m. Bankfull width near the end of the channel is estimated at 1.5-2.0 m and bankfull width at 20 m, as indicated by debris in the surrounding vegetation. The channel (and valley) abruptly end in a large “bowl” approximately 50 m deep and 30 m wide. There is a very tall concrete “ditch inlet” chamber with a relatively small square opening at its base that receives the watercourse flow. The outlet 50 m downstream is described above.

No formal fish collection was undertaken at this location during the site visit and no fish were observed. No historic fisheries data were available from the TRCA from this watercourse. Due to the perched outlet near the downstream end of this watercourse, the steep gradient, shallow depths over rectangular stone substrates, and the lengths of piped sections, this watercourse does not provide direct fish habitat but contributes flows to direct habitat downstream (indirect habitat).

3.2.5 Species at Risk

All species historically recorded within or near the study area are considered to be either very common in Ontario (provincial rank of S5), common (provincial rank of S4) or non-native (provincial rank of SE; **Table 1**). According to the Natural Heritage Information Centre (NHIC) database, no aquatic species at risk have been found within or adjacent to the study area.

3.3 Vegetation and Vegetation Communities

The geographical extent, composition, structure, and function of vegetation communities were identified through air photo interpretation and field investigations. Air photos were interpreted to determine the limits and characteristics of vegetation communities. Multi-season field investigations were conducted during the preparation of Scarborough-Malvern LRT, Durham-Scarborough BRT, Sheppard Avenue LRT and UTSC Scarborough Campus Secondary Plan Update. This information was updated through ELC and florist surveys undertaken along the entire corridor in October 2023.

Vegetation communities were classified according to the *Ecological Land Classification for Southern Ontario: First Approximation and Its Application* (Lee *et al.* 1998). The community was sampled using a plotless method for the purpose of determining general composition and structure of the vegetation. Plant species status was reviewed for Ontario (Oldham 1999), Toronto and Region Conservation Authority (TRCA 2021), City of Toronto (City of Toronto 2003), and Regional Municipality of Toronto (Varga *et al*. 2000).

3.3.1 Vegetation Communities – Eglinton Avenue, Kingston Road, Sheppard Avenue, Morningside Avenue Except for the Morningside Park ESA/ANSI

This portion of the study is dominanted by manicured areas and cultural vegetation communities. Areas of mown grass, planted trees and decorative gardens are typically associated with sidewalks, residential areas and commercial development. Planted species within these areas include a wide variety of horticulturally derived and native trees and shrubs. The cultural vegetation communities within this portion of the study area were generally restricted to roadside communities and communities adjacent to the rail corridor. A total of five cultural vegetation communities were identified within this portion of the study area including: Dry-Moist Old Field Meadows (CUM1-1), Mineral Cultural Thickets (CUT1), Mineral Cultural Savannah (CUS1), Scotch Pine Coniferous Plantation (CUP3-3) and Mineral Cultural Woodland (CUW1). The cultural vegetation communities within the study area contain a high proportion of non-native plant species that are well adapted to persist in areas that are regularly disturbed including species that are adapted to high light conditions, limited soil moisture and species that are tolerant of salt spray. The cultural vegetation communities within the study area are considered to be low quality.

The natura/semi-natural features within this portion of the study area consists of wetland and forest communities. A total of seven forest and wetland communities were identified within this portion of the study area including: Decidous Forest (FOD), Dry-Fresh Poplar Deciduous Forest (FOD3-1), Fresh-Moist Lowland Deciduous Forest (FOD7), Dry-Fresh Sugar Maple-Black Cherry Deciduous Forest (FOD5-7), White Cedar Mineral Mixed Swamp (SWM1-1), Shallow Marsh (MAS2) and Cattail Mineral Shallow Marsh (MAS2-1). In general, these features are isolated, remnant habitat that are not connected to a larger natural heritage system. Wetland communities within this portion of study area are generally as a result of roadside drainage and support a large portion of non-native plant species including European reed (*Phargmites australis* ssp. *australis*) and narrow leaved cattail (*Typha angustifolia*). One higher quality mixed swamp community was identified on the north side of Sheppard Avenue, this community supports a large diversity of specialized and native plant species. Small patches of deciduous forest habitat were identified within this portion of the study area. These communities have been heavily influenced by the adjacent anthropogenic landuses and this is evident in the level of anthropogenic disturbance throughout the communities.

Overall, vegetation communities within this portion of the study area are heavily influenced by local land use practices including commercial, residential development and infrastructure. All of the communities identified within this portion of the study area are considered widespread and common in Ontario, the TRCA watershed (TRCA 2021) and are secure globally. The communities are delinated in **Figure 3** and described in **Table 2**.

3.3.2 Vegetation Communities - Morningside Park ESA/ANSI

The portion of the study through the Morningside Park ESA/ANSI largely supports high quality forest and wetland communities. Small portions of cultural vegetation habitat were identified adjacent to the Morningside Avenue right-of-way. A total of 18 vegetation communities were identified within this portion of the study area including Dry-Moist Old Field Meadow (CUM1-1), Mineral Cultural Woodland (CUW1), Mineral Cultural Thicket (CUT1 and CUT1-1), Deciduous Forest (FOD3-1, FOD4, FOD5-3, FOD7, FOD8-1), Mixed Forest (FOM2, FOM2-2, FOM7-2), Meadow Marsh (MAM2-2), Shallow Marsh (MAS2-1), Coniferous Swamp (SWC1-2, SWC3), Mixed Swamp (SWM5-1), and Swamp Thicket (SWT3-2).

In addition to being part of the Morningside Park ESA, the wetlands in this portion of the study area are a component of the Highland Creek-Morningside PSW. In general, these communities support high quality swamp habitat largely dominanted by eastern white cedar (*Thuja occidentalis*). Several cattial Mineral Shallow Marsh (MAS2-1) communities were identified along the Morningside Avenue right-of-way.

Evidence of disturbance was observed in the marsh communities including a higher proportion of non-native plant species which is likely as a result of being adjacent to the roadway.

As noted above, several mixed forest and deciduous forest communities were identified within this portion of the study area. In general, these forest communities are considered to be of higher quality habitat, however, edge habitat was observed in the portions of the communities adjacent to the roadways.

Overall, vegetation communities within the Morningside Park ESA support high quality habitat and a large number of native and specialized plant species. Four of the vegetation communities identified within the Morningside Park ESA lands are considered locally rare by TRCA including Willow Organic Thicket Swamp (SWT3-2), Red Maple-Conifer Organic Mixed Swamp (SWM5-1), White Cedar Organic Conifeorus Swamp (SWC3), and White Cedar-Conifer Mineral Coniferous Swamp (SWC1-2). All of the communities identified within the Morningside Park ESA are delinated in **Figure 3** and described in **Table 2**.

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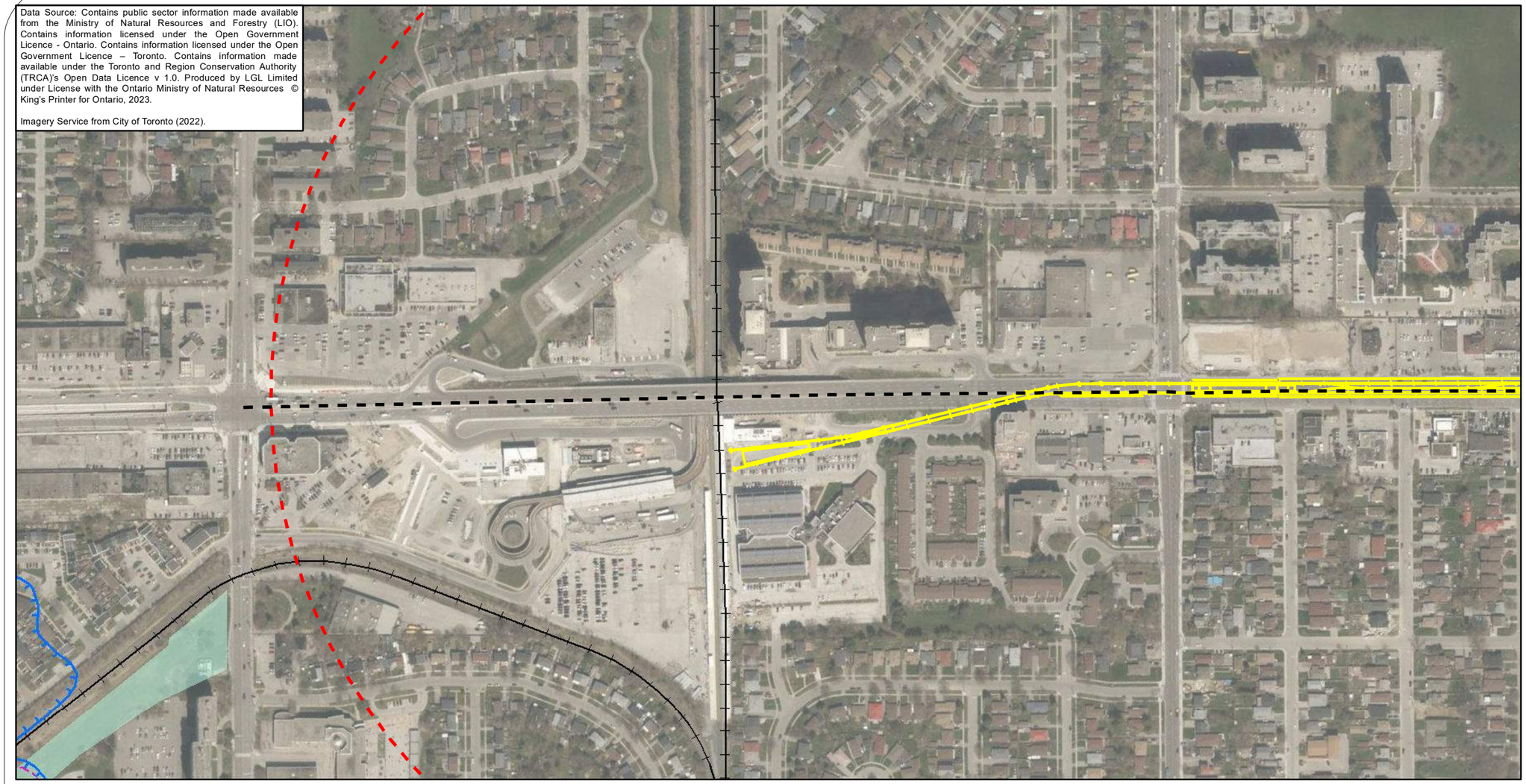


Ecological Land Classification

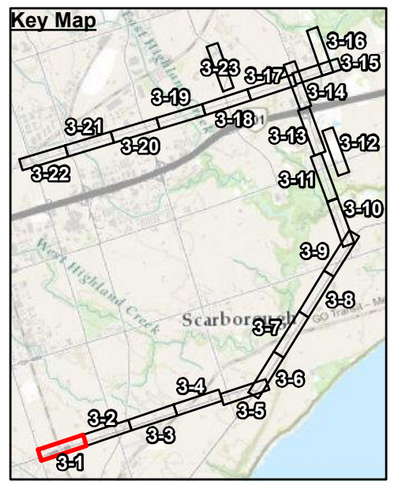
LEGEND

- Proposed Eglington East LRT Alignment
- Scarborough Malvern LRT
- Railway
- Natural Heritage System (CoT)
- Ravine and Natural Feature Protection By-Law
- Regulation Limit (TRCA)

N
W E
S

0 50 100 150 200 m

Key Map



Eglington East LRT
Existing Conditions

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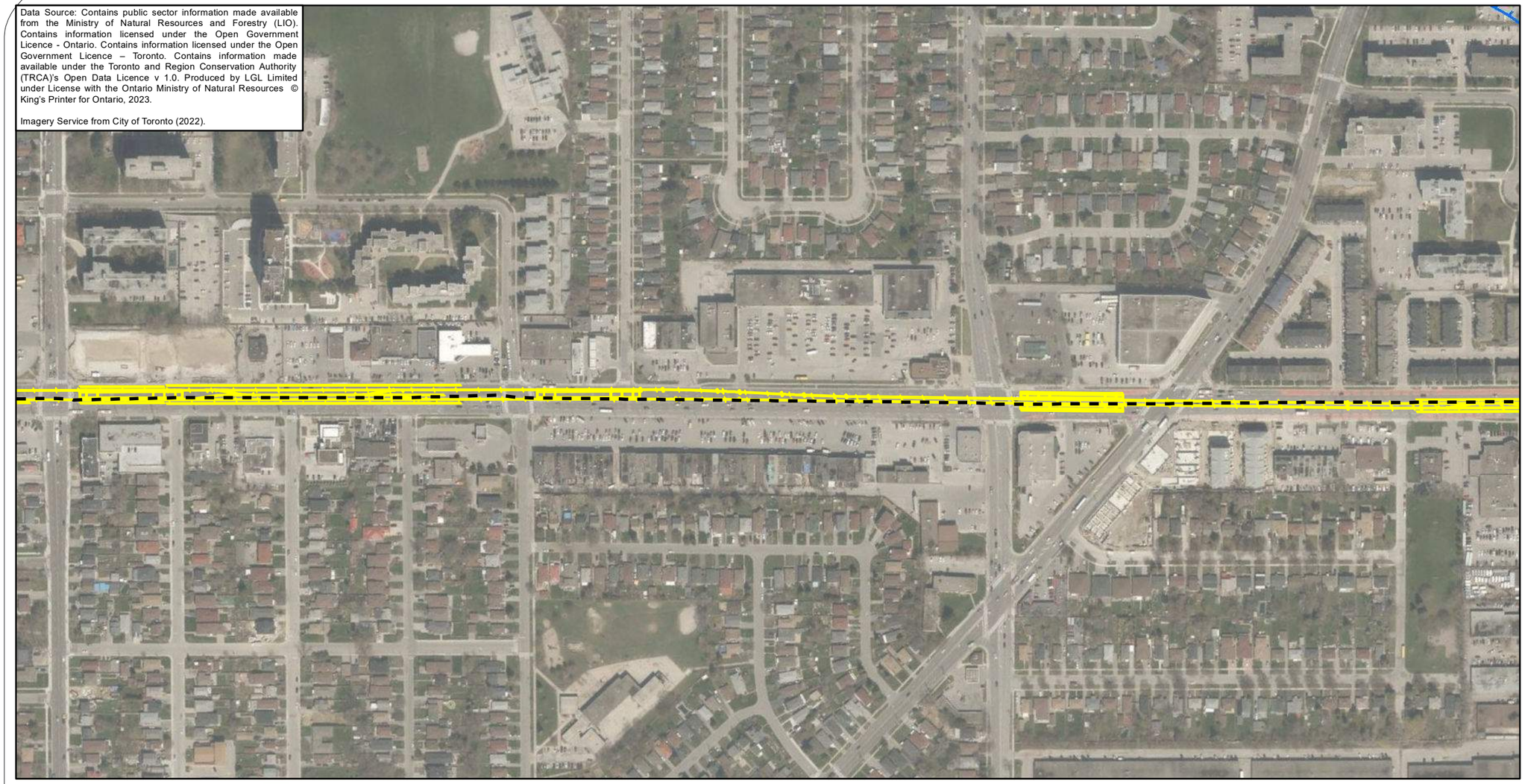
Project:	TA9307	**Figure:**	3-1
Date:	October, 2023	**Prepared By:**	VLG
Scale:	1:4,000	**Verified By:**	GNK



Ecological Land Classification

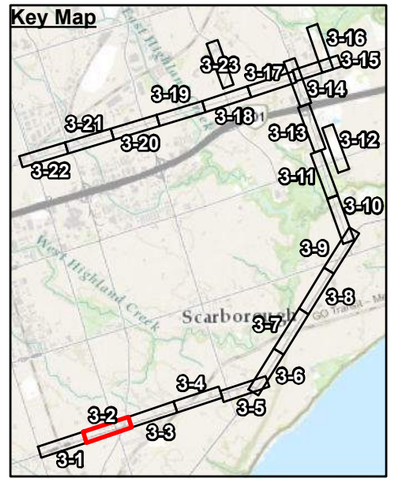
LEGEND

- Proposed Eglington East LRT Alignment
- Scarborough Malvern LRT
- Regulation Limit (TRCA)

N W E S

0 50 100 150 200 m

Key Map



Eglington East LRT
Existing Conditions

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Project:	TA9307	**Figure:**	3-2
Date:	October, 2023	**Prepared By:**	VLG
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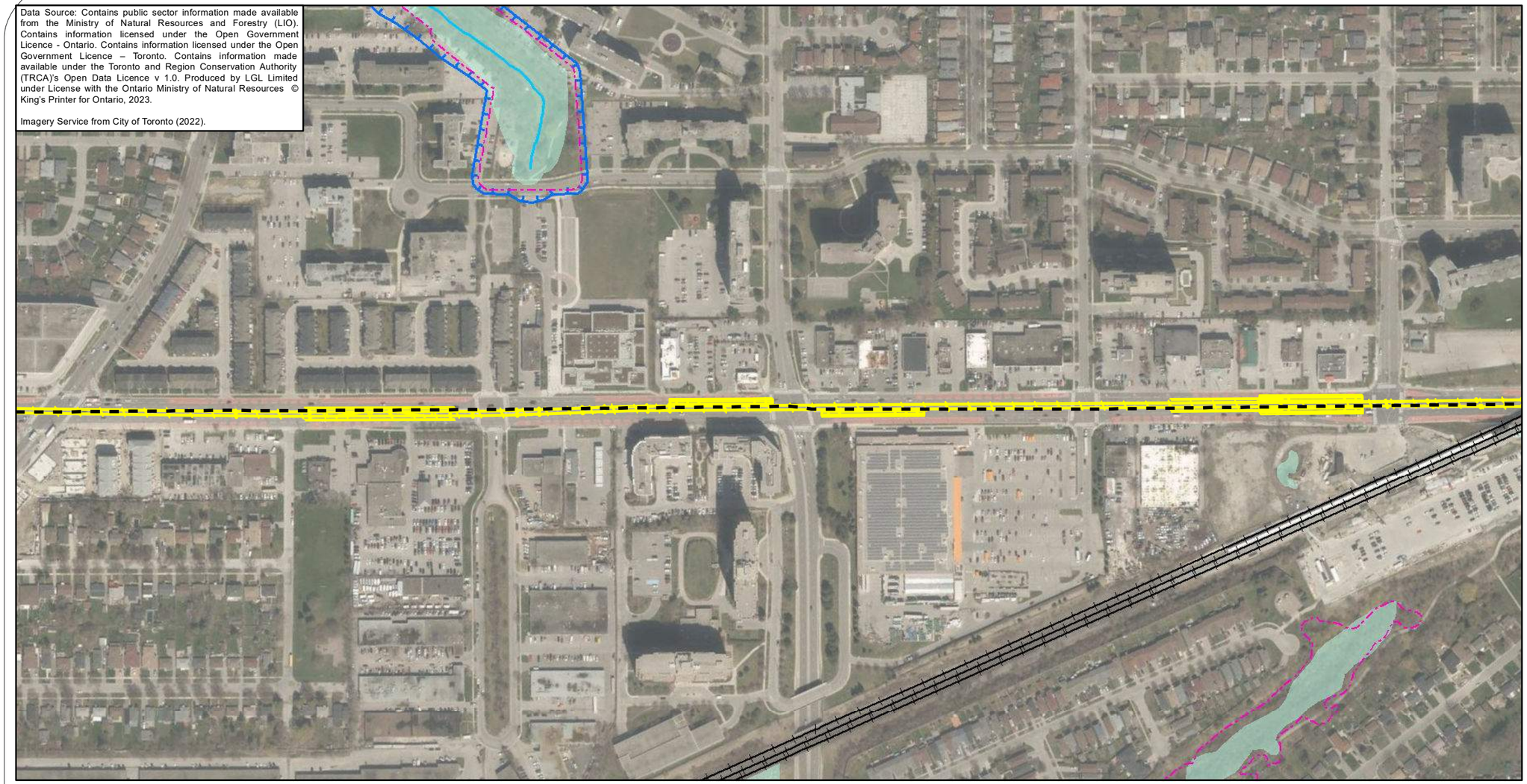


Ecological Land Classification

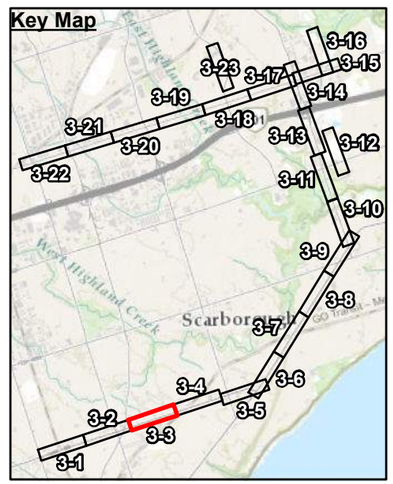
LEGEND

- Proposed Eglington East LRT Alignment
- Scarborough Malvern LRT
- Railway
- Watercourse
- Natural Heritage System (CoT)
- Ravine and Natural Feature Protection By-Law
- Regulation Limit (TRCA)

N W E S

0 50 100 150 200 m

Key Map



Eglington East LRT
Existing Conditions

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Project:	TA9307	**Figure:**	3-3
Date:	October, 2023	**Prepared By:**	VLG
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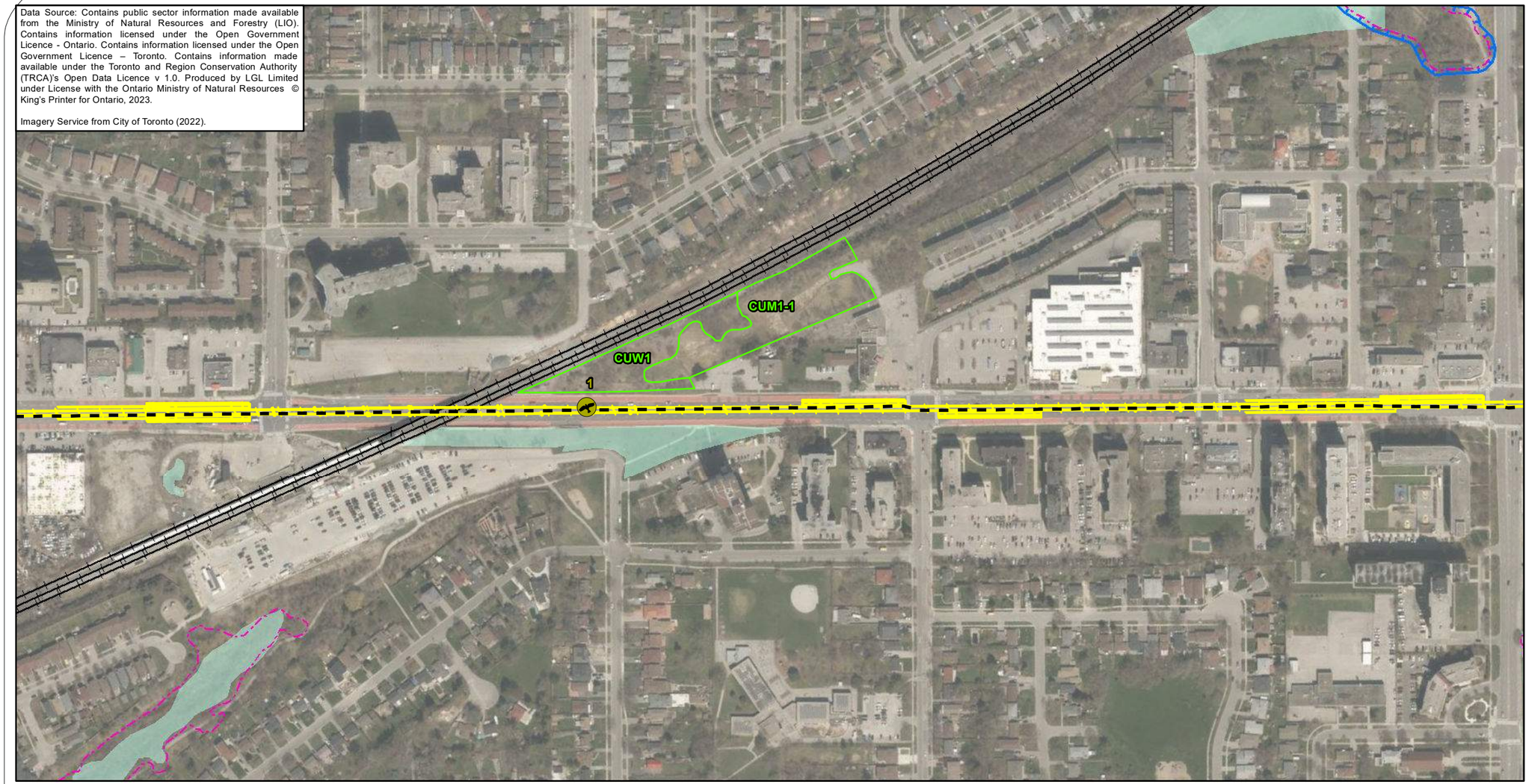
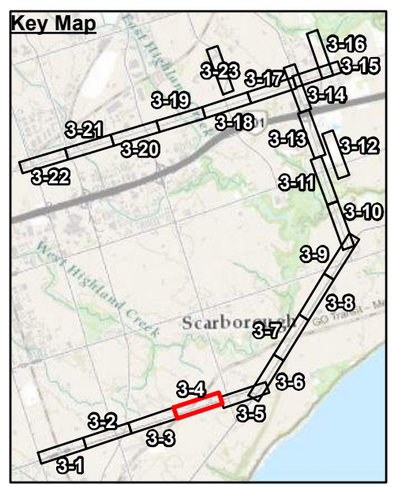


Ecological Land Classification

- CUM1-1: Dry-Moist Old Field Meadow Type
- CUW1: Mineral Cultural Woodland Ecosite

Key Map



LEGEND

- Proposed Eglington East LRT Alignment
- Scarborough Malvern LRT
- Breeding Bird Point Count
- Railway
- Natural Heritage System (CoT)
- Ravine and Natural Feature Protection By-Law
- Regulation Limit (TRCA)

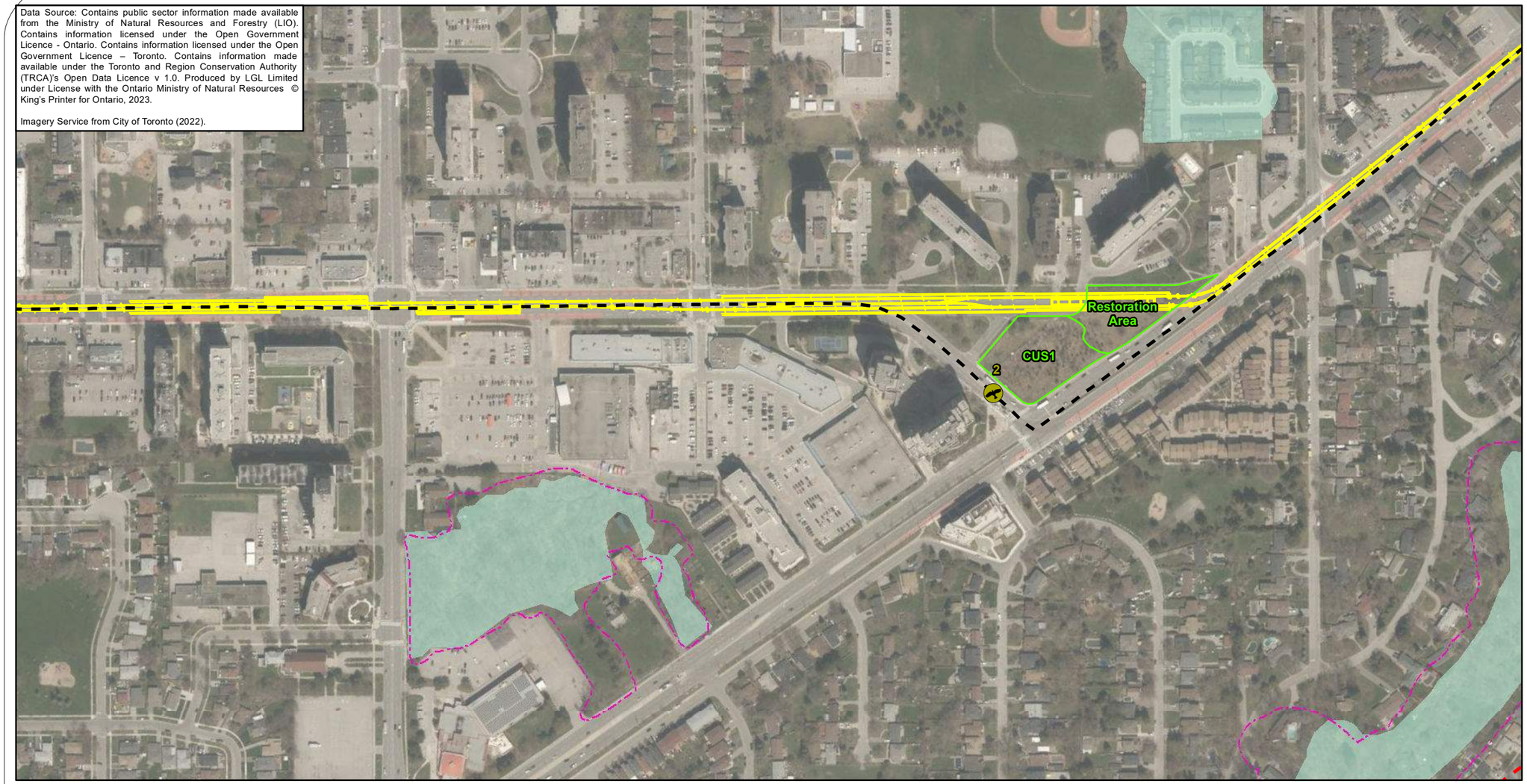
N W E S

0 50 100 150 200 m

Eglington East LRT
Existing Conditions

LGL LIMITED
environmental research associates

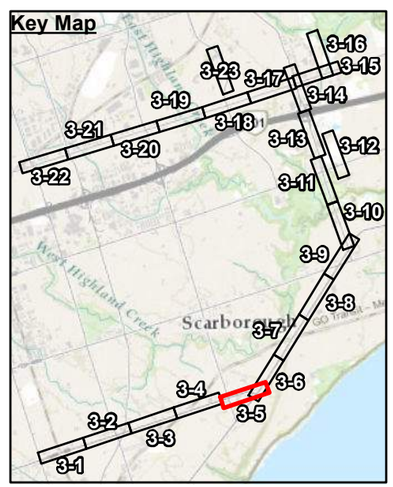
Project:	TA9307	**Figure:**	3-4
Date:	October, 2023	**Prepared By:**	VLG
Scale:	1:4,000	**Verified By:**	GNK



Ecological Land Classification

- CUS1: Mineral Cultural Savannah Ecosite
- Restoration

Key Map



LEGEND

- Proposed Eglington East LRT Alignment
- Scarborough Malvern LRT
- Breeding Bird Point Count
- Natural Heritage System (CoT)
- Ravine and Natural Feature Protection By-Law

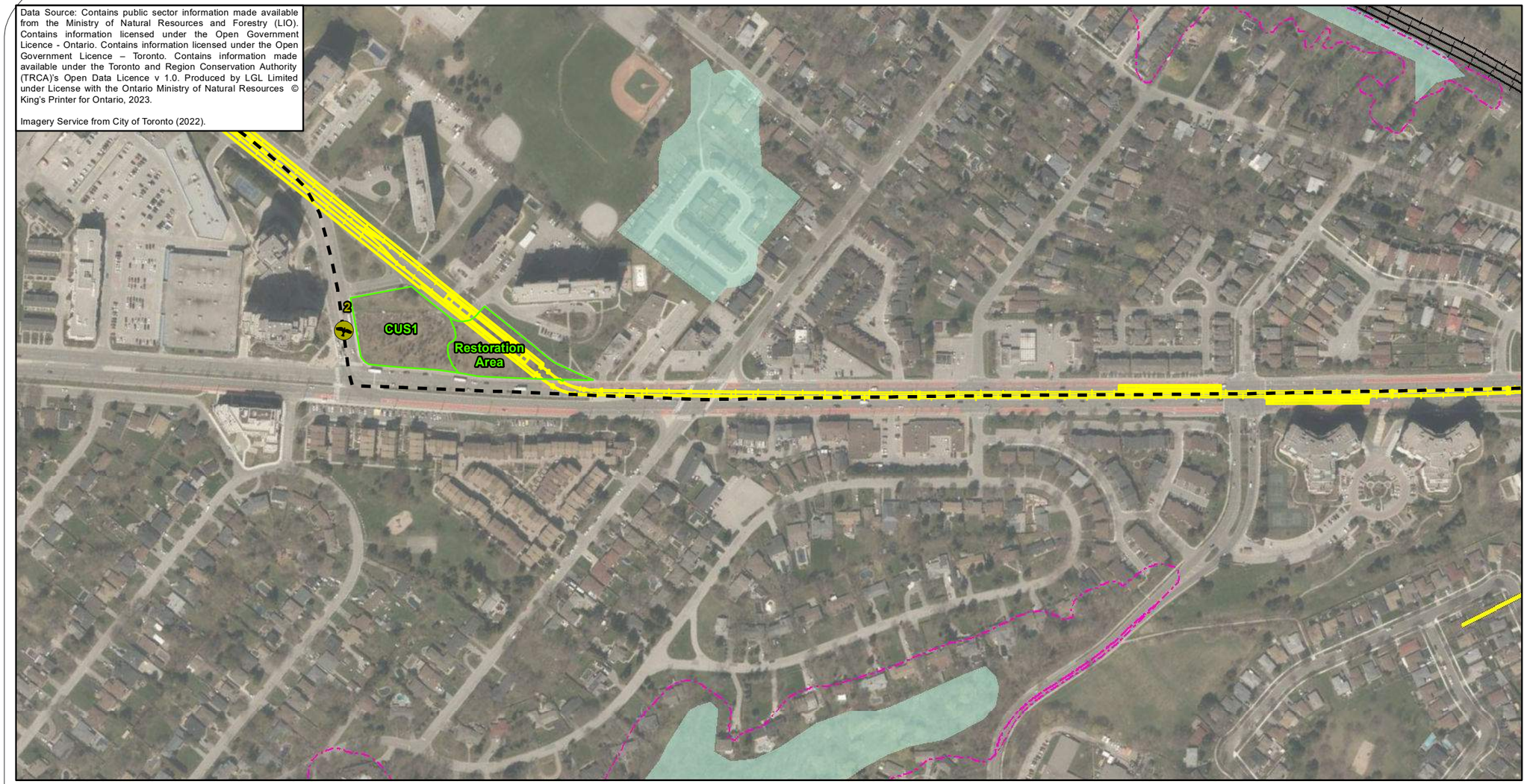
N W E S

0 50 100 150 200 m

Eglington East LRT
Existing Conditions

LGL LIMITED
environmental research associates

Project:	TA9307	**Figure:**	3-5
Date:	October, 2023	**Prepared By:**	VLG
Scale:	1:4,000	**Verified By:**	GNK



Ecological Land Classification

- CUS1: Mineral Cultural Savannah Ecosite
- Restoration

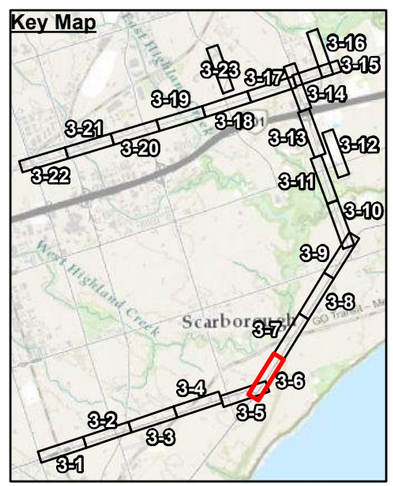
LEGEND

- Proposed Eglington East LRT Alignment
- Scarborough Malvern LRT
- Breeding Bird Point Count
- Railway
- Iroquois shoreline
- Natural Heritage System (CoT)
- Ravine and Natural Feature Protection By-Law

N E S W

0 50 100 150 200 m

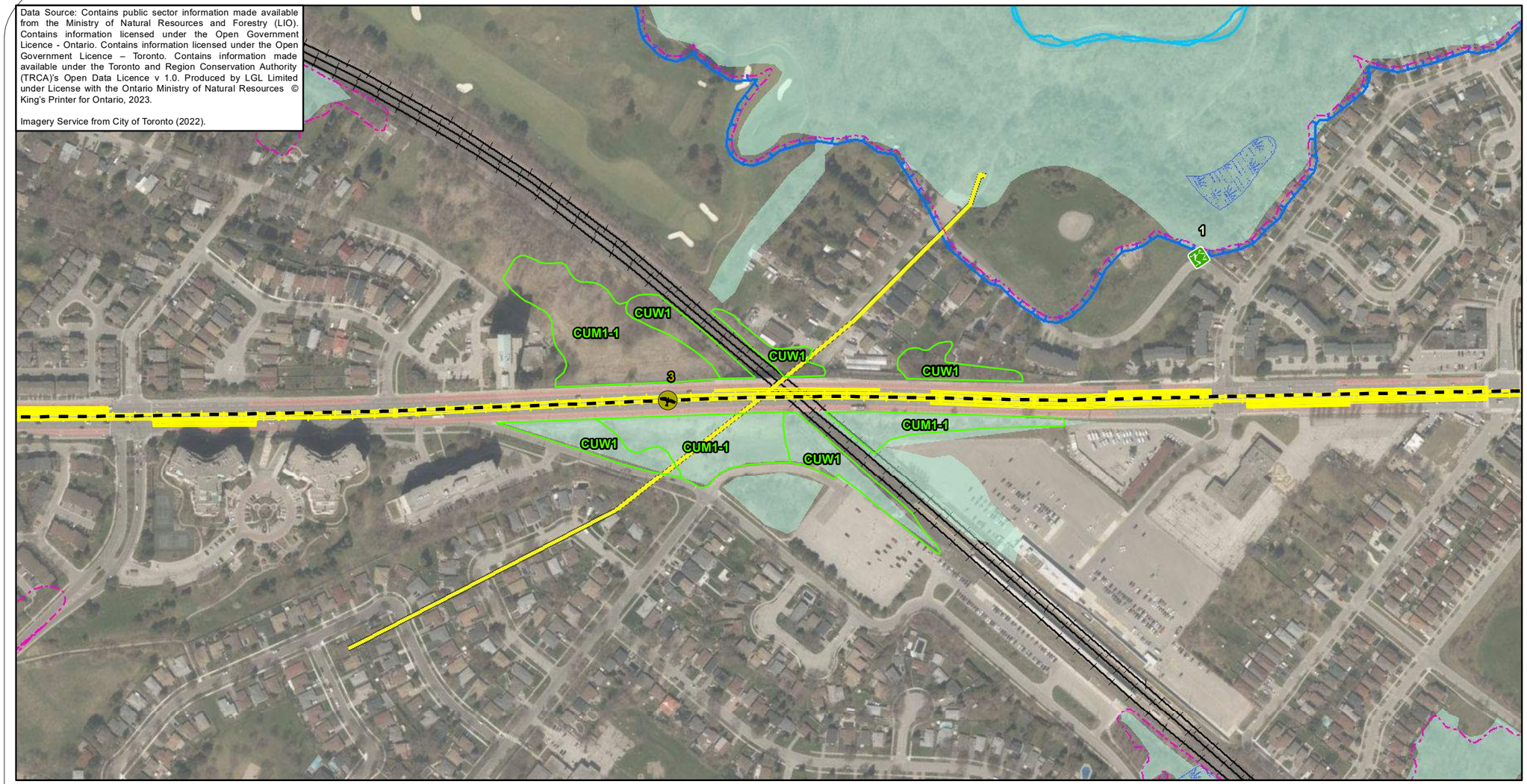
Key Map



Eglington East LRT
Existing Conditions

LGL LIMITED
environmental research associates

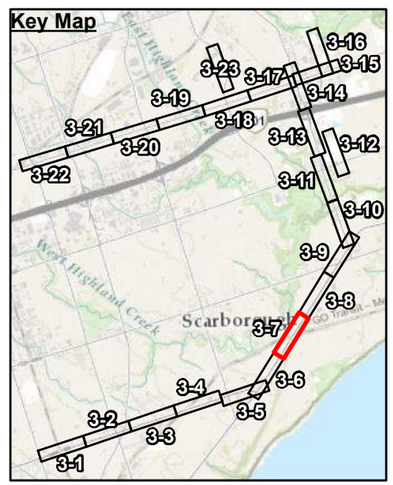
Project:	TA9307	**Figure:**	3-6
Date:	October, 2023	**Prepared By:**	VLG
Scale:	1:4,000	**Verified By:**	GNK



Ecological Land Classification

- CUM1-1: Dry-Moist Old Field Meadow Type
- CUW1: Mineral Cultural Woodland Ecosite

Key Map



LEGEND

- Proposed Eglington East LRT Alignment
- Scarborough Malvern LRT
- Amphibian Monitoring Location
- Breeding Bird Point Count
- Railway
- Iroquois shoreline
- Watercourse
- Natural Heritage System (CoT)
- Ravine and Natural Feature Protection By-Law
- Regulation Limit (TRCA)
- Wetland Unevaluated as per OWES

0 50 100 150 200 m

Eglington East LRT
Existing Conditions

LGL LIMITED environmental research associates

Project:	TA9307	**Figure:**	3-7
Date:	October, 2023	**Prepared By:**	VLG
Scale:	1:4,000	**Verified By:**	GNK

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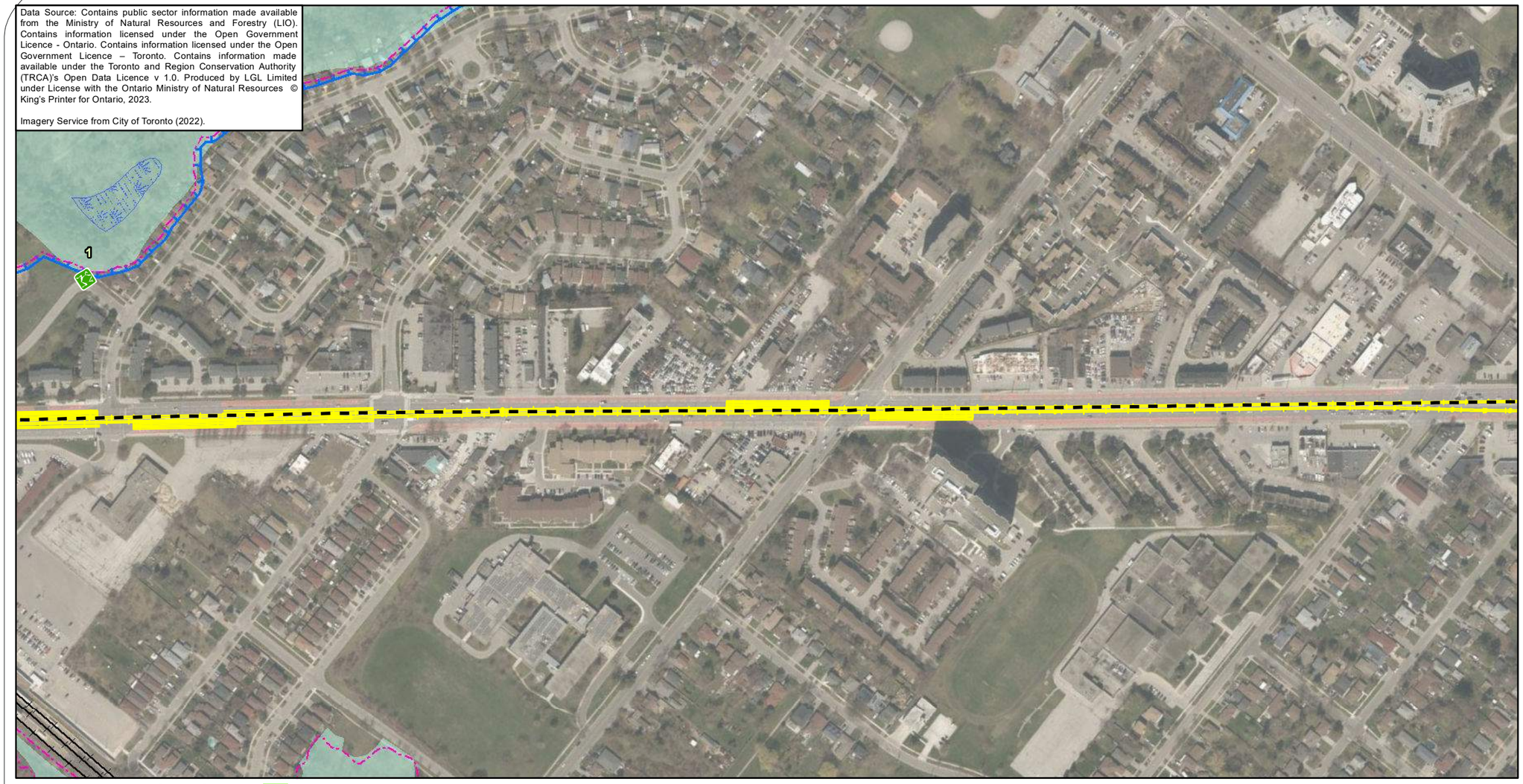


Ecological Land Classification

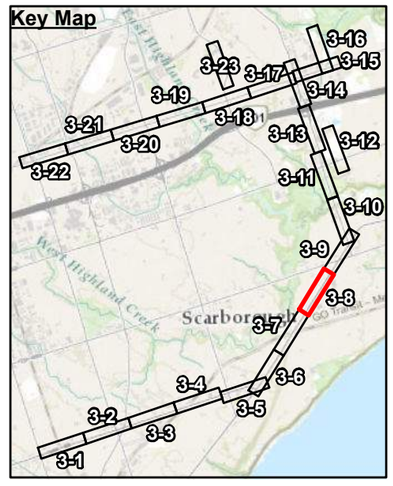
LEGEND

- Proposed Eglington East LRT Alignment
- Scarborough Malvern LRT
- Amphibian Monitoring Location
- Railway
- Watercourse
- Natural Heritage System (CoT)
- Ravine and Natural Feature Protection By-Law
- Regulation Limit (TRCA)
- Wetland Unevaluated as per OWES

N W E S

0 50 100 150 200 m

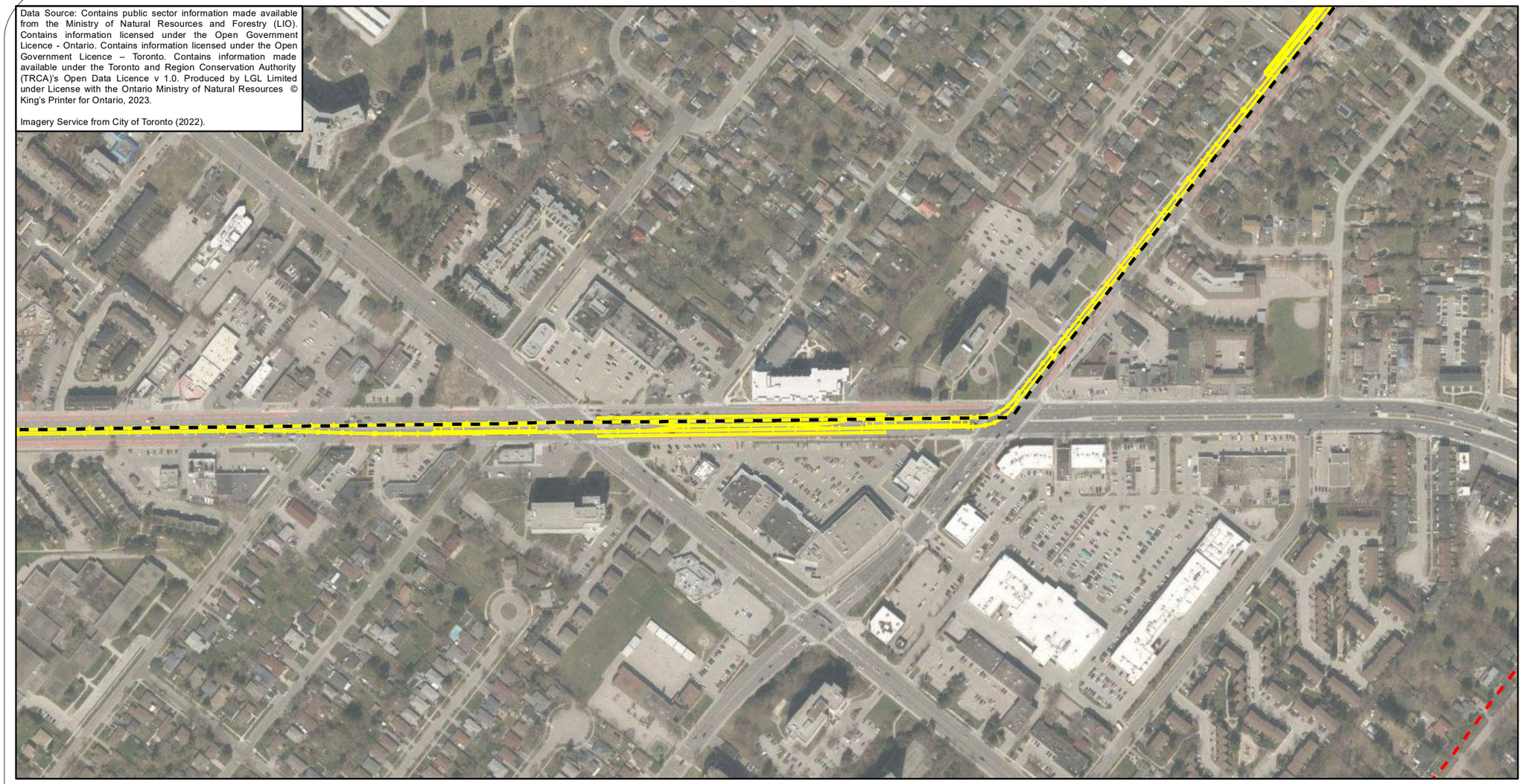
Key Map



Eglington East LRT
Existing Conditions

LGL LIMITED
environmental research associates

Project:	TA9307	**Figure:**	3-8
Date:	October, 2023	**Prepared By:**	VLG
Scale:	1:4,000	**Verified By:**	GNK



Ecological Land Classification

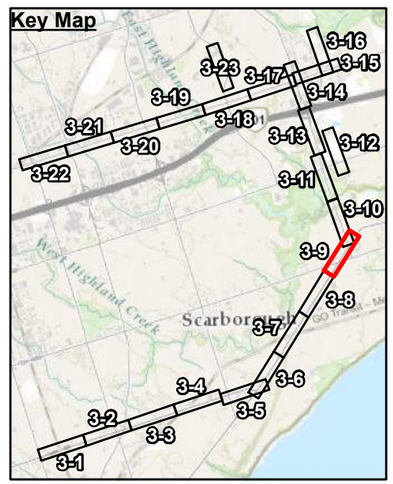
LEGEND

- Proposed Eglington East LRT Alignment
- Scarborough Malvern LRT

N W E S

0 50 100 150 200 m

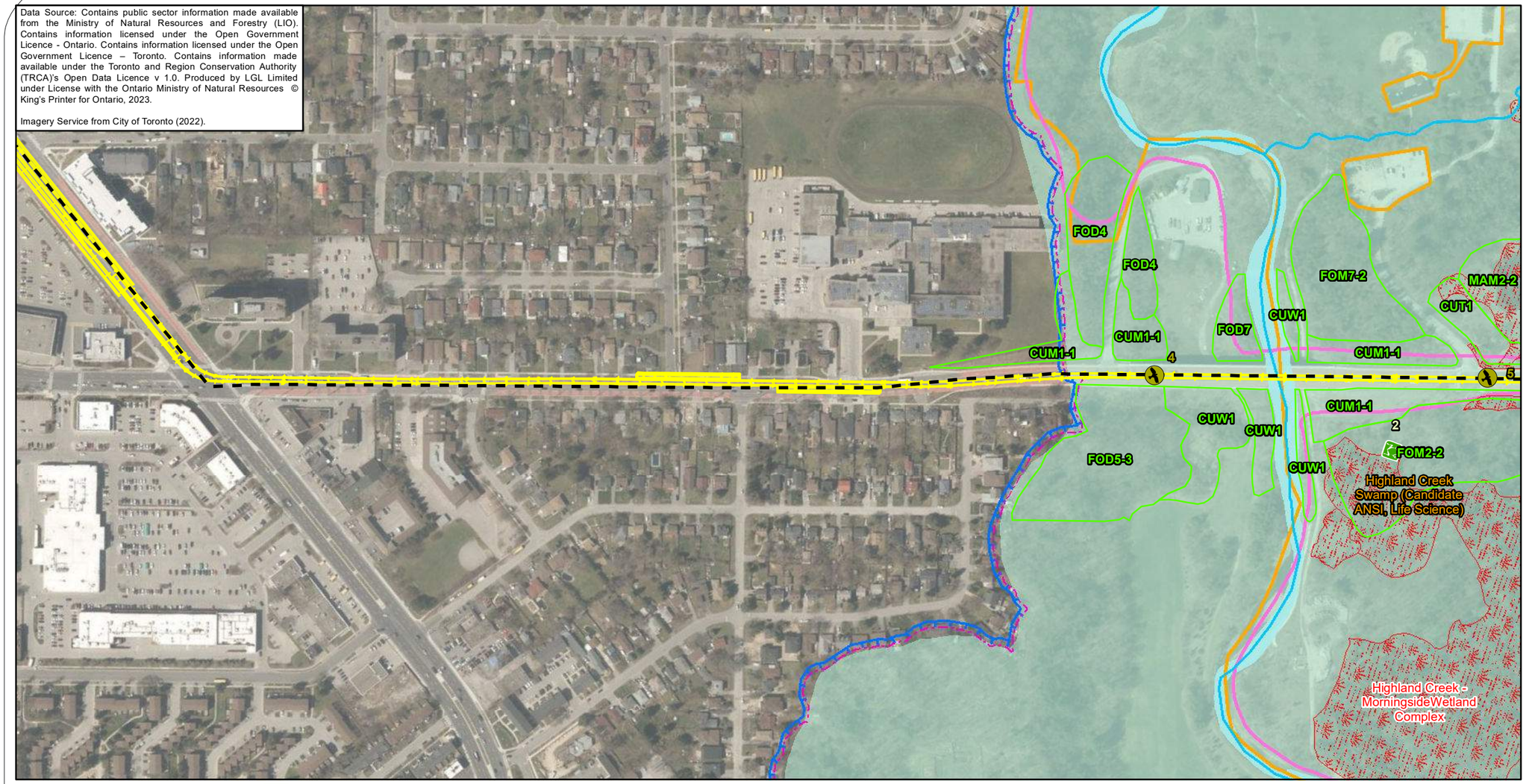
Key Map



Eglington East LRT
Existing Conditions

LGL LIMITED
environmental research associates

Project:	TA9307	**Figure:**	3-9
Date:	October, 2023	**Prepared By:**	VLG
Scale:	1:4,000	**Verified By:**	GNK



LEGEND

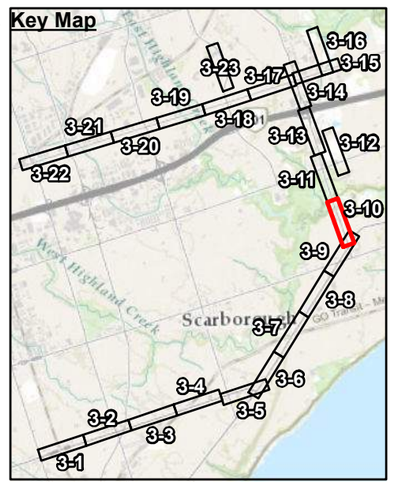
- Proposed Eglington East LRT Alignment
- Scarborough Malvern LRT
- Amphibian Monitoring Location
- Breeding Bird Point Count
- Watercourse
- ANSI
- Environmentally Signficant Area (CoT)
- Natural Heritage System (CoT)
- Ravine and Natural Feature Protection By-Law
- Regulation Limit (TRCA)
- Waterbody
- Wetland
  Prov. Significant as per OWES

0 50 100 150 200 m

Ecological Land Classification

- CUM1-1: Dry-Moist Old Field Meadow Type
- CUT1: Mineral Cultural Thicket Ecosite
- CUW1: Mineral Cultural Woodland Ecosite
- FOD4: Dry-Fresh Deciduous Forest Ecosite
- FOD5-3: Dry-Fresh Sugar Maple-Oak Deciduous Forest Type
- FOD7: Fresh-Moist Lowland Deciduous Forest Ecosite
- FOM2-2: Dry-Fresh White Pine-Sugar Maple Mixed Forest Type
- FOM7-2: Fresh-Moist White Cedar-Hardwood Mixed Forest Type
- MAM2-2: Reed-canary Grass Mineral Meadow Marsh Type

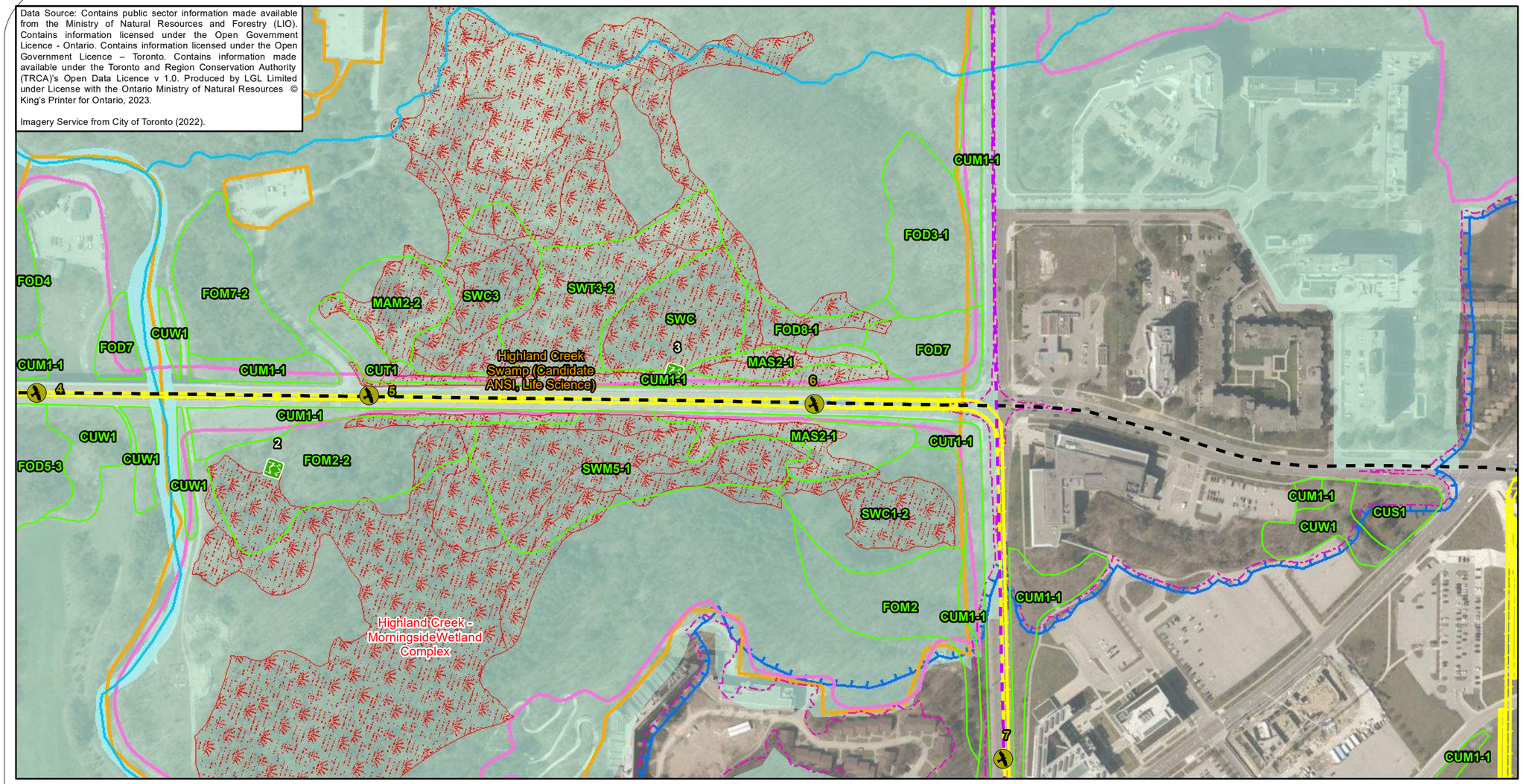
Key Map



Eglington East LRT
Existing Conditions

LGL LIMITED
environmental research associates

Project:	TA9307	**Figure:**	3-10
Date:	October, 2023	**Prepared By:**	VLG
Scale:	1:4,000	**Verified By:**	GNK



LEGEND

- Proposed Eglington East LRT Alignment
- Durham Scarborough BRT
- Scarborough Malvern LRT
- Amphibian Monitoring Location
- Breeding Bird Point Count
- Watercourse
- ANSI
- Environmentally Signficant Area (CoT)
- Natural Heritage System (CoT)
- Ravine and Natural Feature Protection By-Law
- Regulation Limit (TRCA)
- Waterbody
- Wetland
  Prov. Significant as per OWES

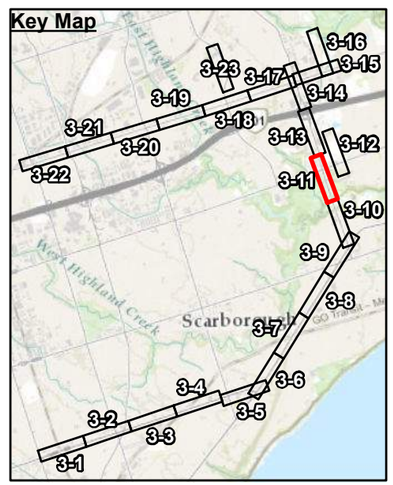
N W S E

0 50 100 150 200 m

Ecological Land Classification

- <all other values>
- CUM1-1: Dry-Moist Old Field Meadow Type
- CUS1: Mineral Cultural Savannah Ecosite
- CUT1: Mineral Cultural Thicket Ecosite
- CUW1: Mineral Cultural Woodland Ecosite
- FOD3-1: Dry-Fresh Poplar Deciduous Forest Type
- FOD4: Dry-Fresh Deciduous Forest Ecosite
- FOD5-3: Dry-Fresh Sugar Maple-Oak Deciduous Forest Type
- FOD7: Fresh-Moist Lowland Deciduous Forest Ecosite
- FOD8-1:Fresh-Moist Poplar Deciduous Forest
- FOM2-2: Dry-Fresh White Pine-Sugar Maple Mixed Forest Type
- FOM2: Dry-Fresh White Pine-Maple-Oak Mixed Forest Ecosite
- FOM7-2: Fresh-Moist White Cedar-Hardwood Mixed Forest Type
- MAM2-2: Reed-canary Grass Mineral Meadow Marsh Type
- MAS2-1: Cattail Mineral Shallow Marsh Type
- SWC1-2: White Cedar-Conifer Mineral Coniferous Swamp Type
- SWC3: White Cedar Organic Coniferous Swamp Ecosite
- SWC: Coniferous Swamp
- SWM5-1: Red Maple-Conifer Organic Mixed Swamp Type
- SWT3-2: Willow Organic Thicket Swamp Type

Key Map



Eglington East LRT
Existing Conditions

LGL LIMITED
environmental research associates

Project:	TA9307	**Figure:**	3-11
Date:	October, 2023	**Prepared By:**	VLG
Scale:	1:4,000	**Verified By:**	GNK

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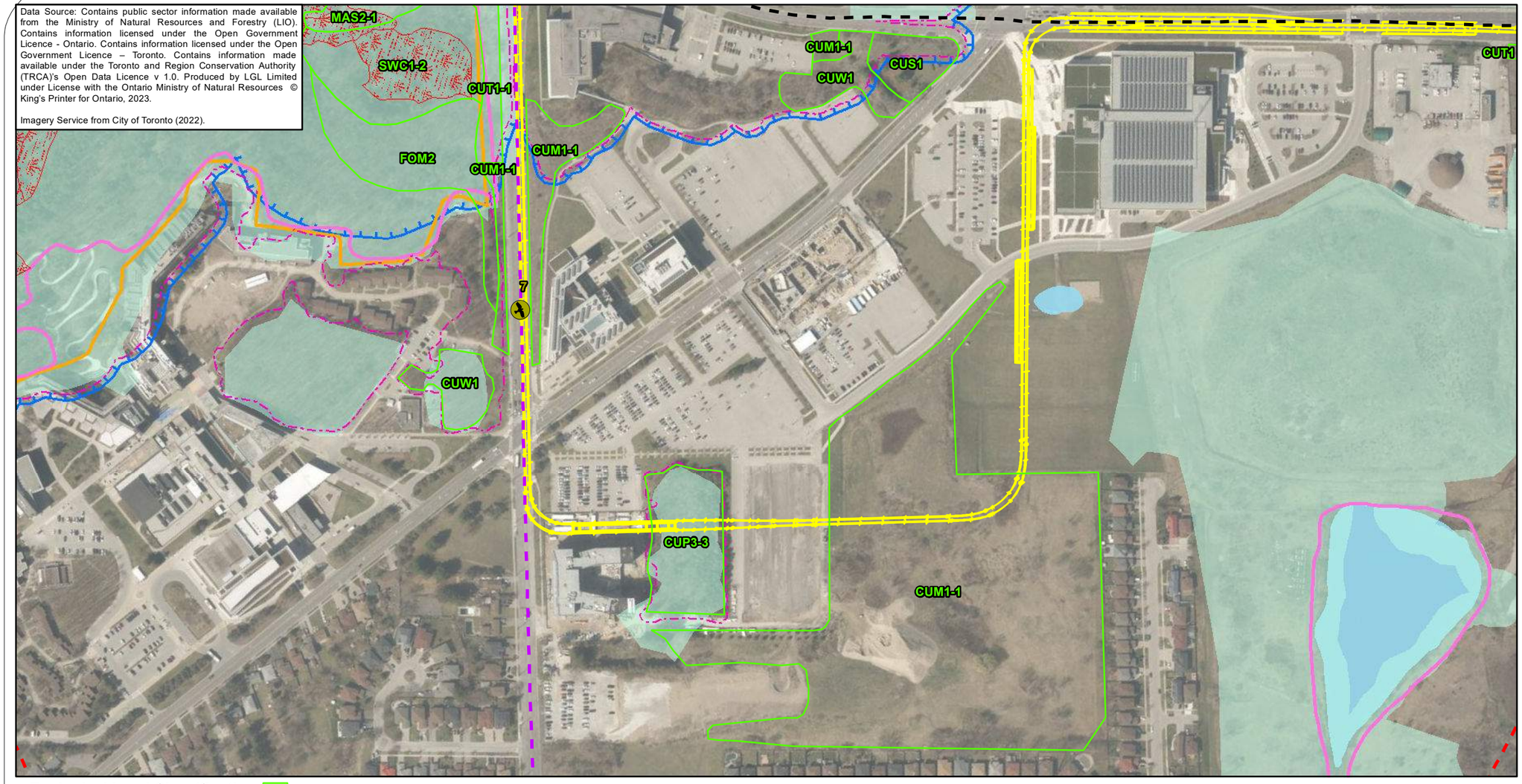
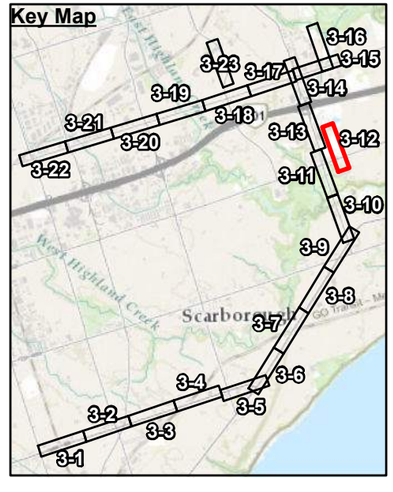


Ecological Land Classification

- <all other values>
- CUM1-1: Dry-Moist Old Field Meadow Type
- CUP3-3: Scotch Pine Coniferous Plantation Type
- CUS1: Mineral Cultural Savannah Ecosite
- CUT1: Mineral Cultural Thicket Ecosite
- CUW1: Mineral Cultural Woodland Ecosite
- FOM2: Dry-Fresh White Pine-Maple-Oak Mixed Forest Ecosite
- MAS2-1: Cattail Mineral Shallow Marsh Type
- SWC1-2: White Cedar-Conifer Mineral Coniferous Swamp Type
- SWM5-1: Red Maple-Conifer Organic Mixed Swamp Type

Key Map



LEGEND

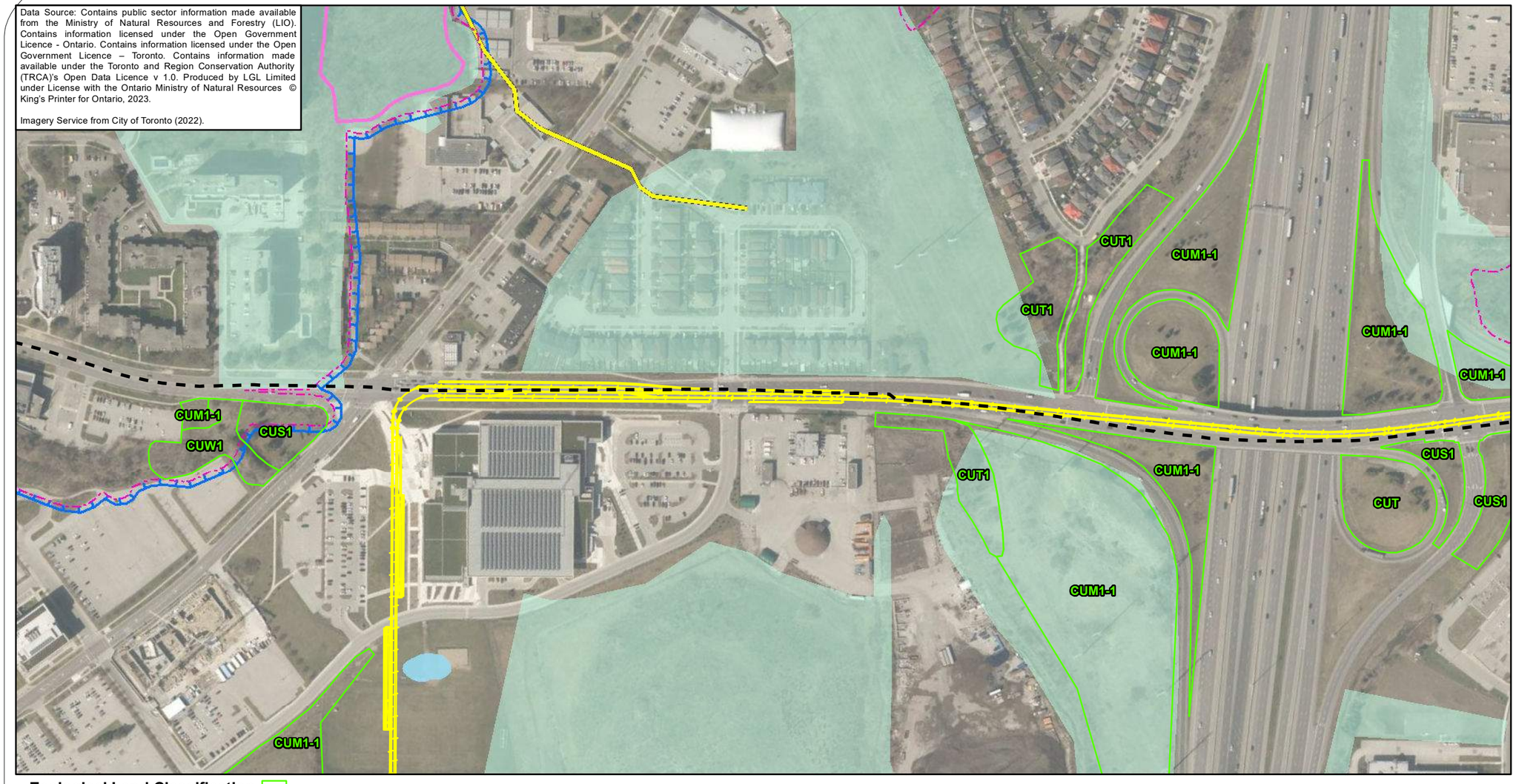
- Proposed Eglington East LRT Alignment
- Durham Scarborough BRT
- Scarborough Malvern LRT
- Breeding Bird Point Count
- ANSI
- Environmentally Signficant Area (CoT)
- Natural Heritage System (CoT)
- Ravine and Natural Feature Protection By-Law
- Regulation Limit (TRCA)
- Waterbody
- Wetland
  Prov. Significant as per OWES

0 50 100 150 200 m

Eglington East LRT
Existing Conditions

LGL LIMITED
environmental research associates

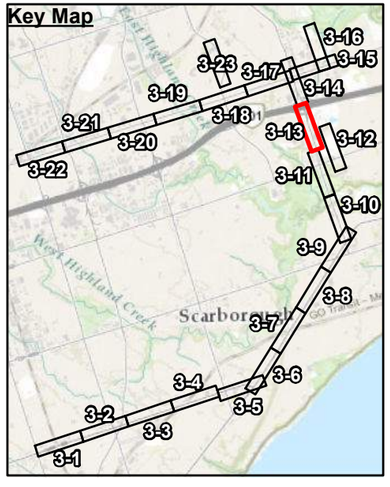
Project:	TA9307	**Figure:**	3-12
Date:	October, 2023	**Prepared By:**	VLG
Scale:	1:4,000	**Verified By:**	GNK



Ecological Land Classification

- CUM1-1: Dry-Moist Old Field Meadow Type
- CUS1: Mineral Cultural Savannah Ecosite
- CUT1: Mineral Cultural Thicket Ecosite
- CUW1: Mineral Cultural Woodland Ecosite

Key Map



LEGEND

- Proposed Eglington East LRT Alignment
- Scarborough Malvern LRT
- Iroquois shoreline
- Environmentally Signficant Area (CoT)
- Natural Heritage System (CoT)
- Ravine and Natural Feature Protection By-Law
- Regulation Limit (TRCA)
- Waterbody

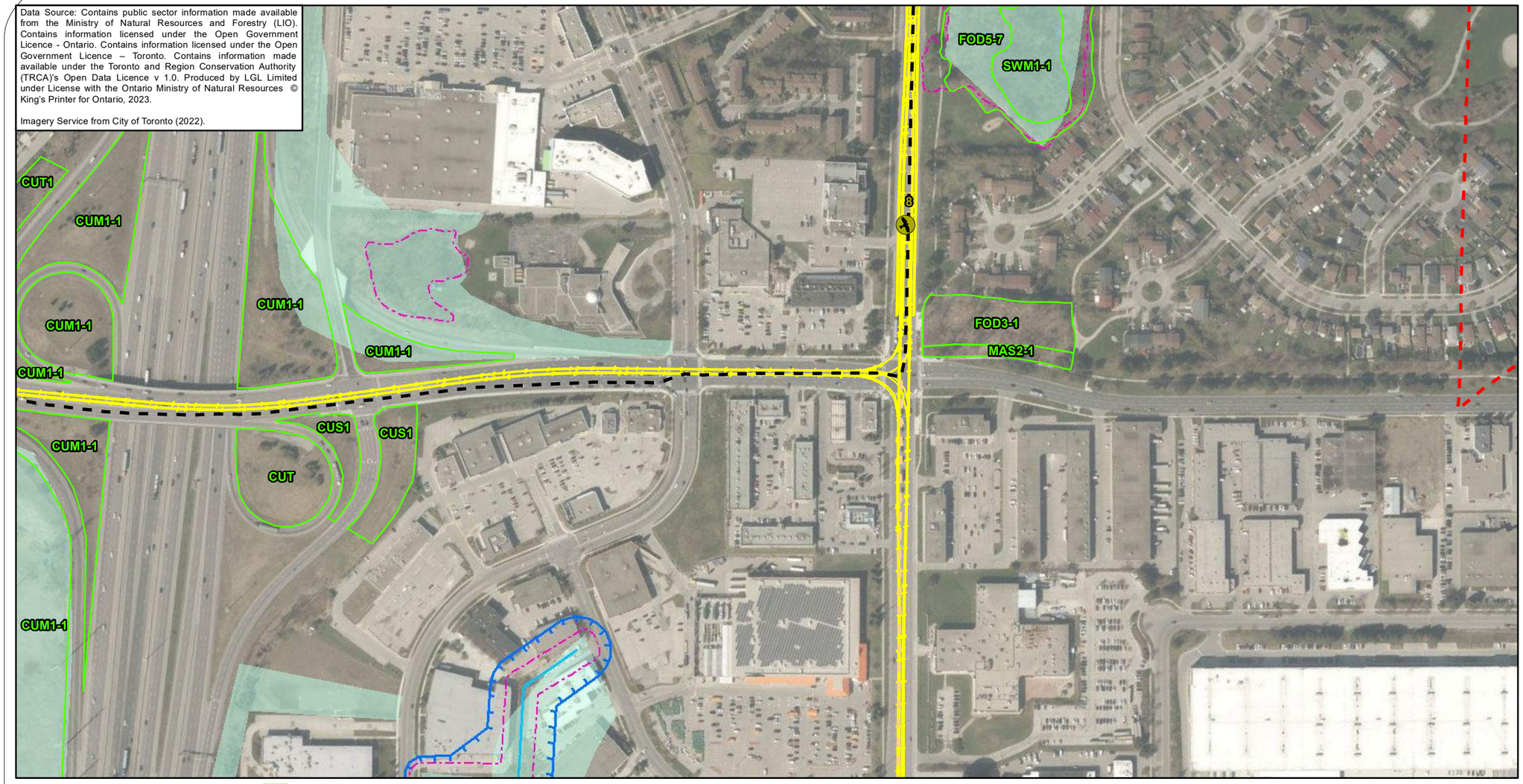
N W S E

0 50 100 150 200 m

Eglington East LRT
Existing Conditions

LGL LIMITED
environmental research associates

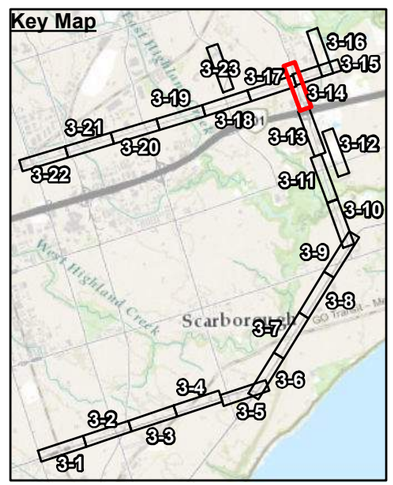
Project:	TA9307	**Figure:**	3-13
Date:	October, 2023	**Prepared By:**	VLG
Scale:	1:4,000	**Verified By:**	GNK



Ecological Land Classification

- CUM1-1: Dry-Moist Old Field Meadow Type
- CUS1: Mineral Cultural Savannah Ecosite
- CUT1: Mineral Cultural Thicket Ecosite
- FOD3-1: Dry-Fresh Poplar Deciduous Forest Type
- FOD5-7: Dry-Fresh Sugar Maple-Black Cherry Deciduous Forest Type
- MAS2-1: Cattail Mineral Shallow Marsh Type
- SWM1-1: White Cedar-Hardwood Mineral Mixed Swamp Type

Key Map



LEGEND

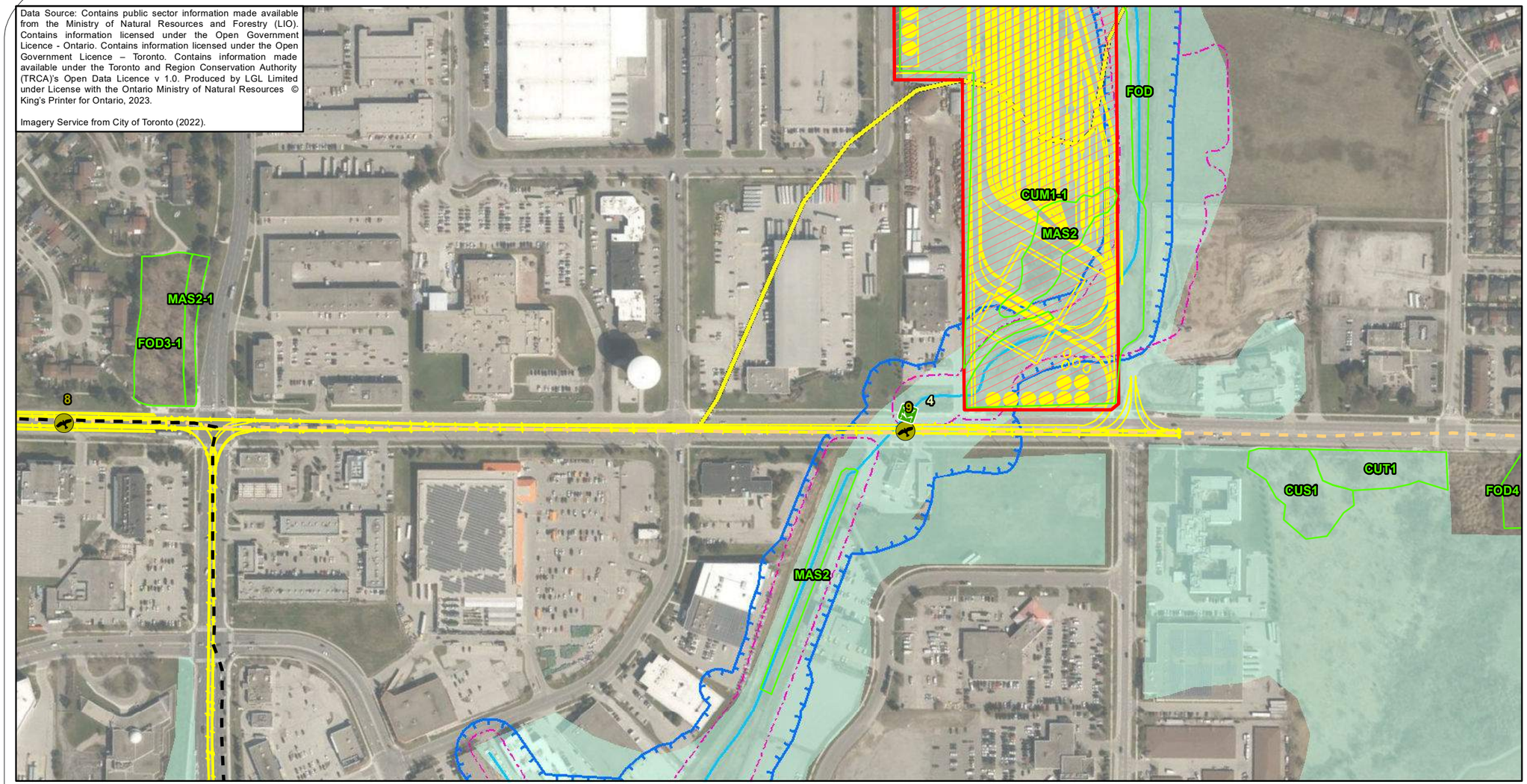
- Proposed Eglington East LRT Alignment
- Scarborough Malvern LRT
- Sheppard Avenue
- Breeding Bird Point Count
- Watercourse
- Natural Heritage System (CoT)
- Ravine and Natural Feature Protection By-Law
- Regulation Limit (TRCA)

0 50 100 150 200 m

Eglington East LRT
Existing Conditions

LGL LIMITED
environmental research associates

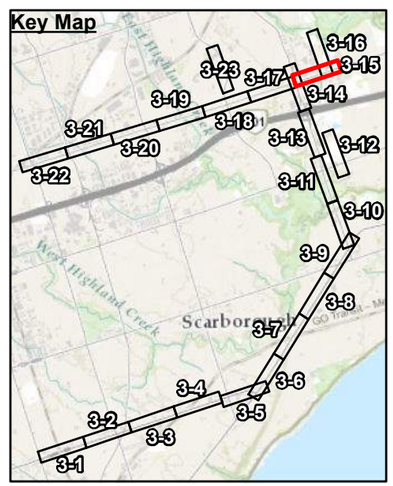
Project:	TA9307	**Figure:**	3-14
Date:	October, 2023	**Prepared By:**	VLG
Scale:	1:4,000	**Verified By:**	GNK



Ecological Land Classification

- CUM1-1: Dry-Moist Old Field Meadow Type
- CUS1: Mineral Cultural Savannah Ecosite
- CUT1: Mineral Cultural Thicket Ecosite
- FOD3-1: Dry-Fresh Poplar Deciduous Forest Type
- FOD4: Dry-Fresh Deciduous Forest Ecosite
- FOD: Deciduous Forest
- MAS2-1: Cattail Mineral Shallow Marsh Type
- MAS2: Mineral Shallow Marsh Ecosite

Key Map



LEGEND

- Proposed Eglington East LRT Alignment
- Maintenance and Storage Facility
- Scarborough Malvern LRT
- Sheppard Avenue
- Amphibian Monitoring Location
- Breeding Bird Point Count
- Iroquois shoreline
- Watercourse
- Natural Heritage System (CoT)
- Ravine and Natural Feature Protection By-Law
- Regulation Limit (TRCA)

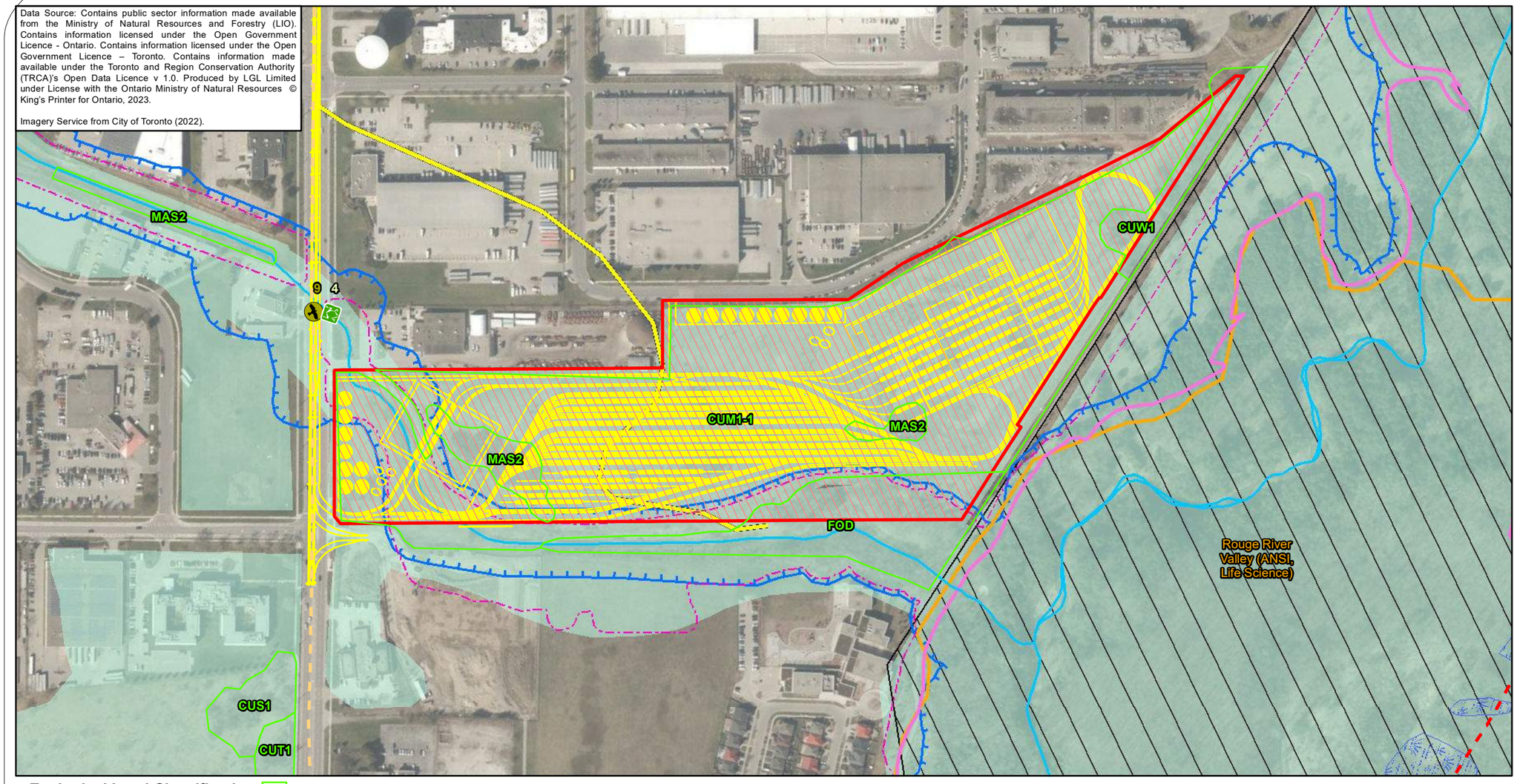
N W E S

0 50 100 150 200 m

Eglington East LRT
Existing Conditions

LGL LIMITED environmental research associates

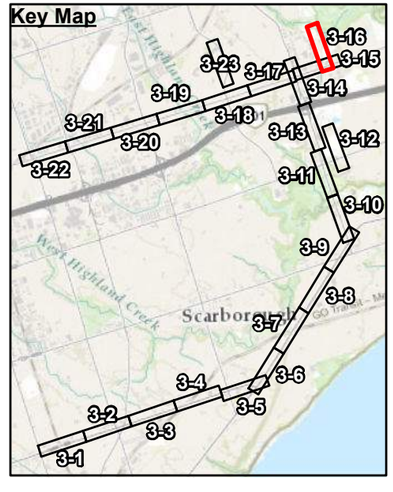
Project:	TA9307	**Figure:**	3-15
Date:	October, 2023	**Prepared By:**	VLG
Scale:	1:4,000	**Verified By:**	GNK



Ecological Land Classification

- CUM1-1: Dry-Moist Old Field Meadow Type
- CUS1: Mineral Cultural Savannah Ecosite
- CUT1: Mineral Cultural Thicket Ecosite
- CUW1: Mineral Cultural Woodland Ecosite
- MAS2: Mineral Shallow Marsh Ecosite
- FOD: Deciduous Forest

Key Map



LEGEND

- Proposed Eglington East LRT Alignment
- Maintenance and Storage Facility
- Sheppard Avenue
- Amphibian Monitoring Location
- Breeding Bird Point Count
- Iroquois shoreline
- Watercourse
- ANSI
- Environmentally Signficant Area (CoT)
- Greenbelt - Protected Countryside
- Natural Heritage System (CoT)
- Ravine and Natural Feature Protection By-Law
- Regulation Limit (TRCA)
- Wetland
  Unevaluated as per OWES

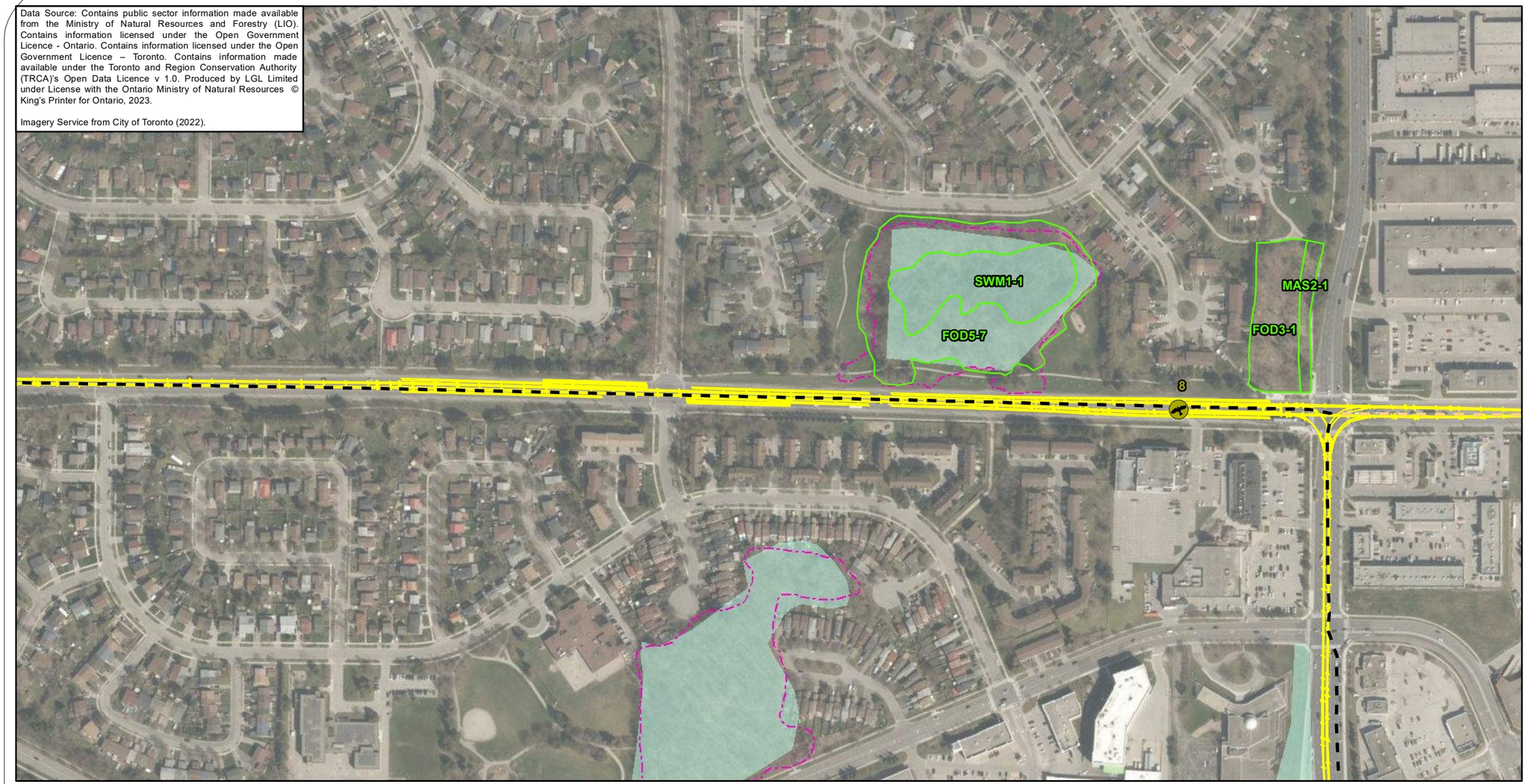
N E S W

0 50 100 150 200 m

Eglington East LRT
Existing Conditions

LGL LIMITED
environmental research associates

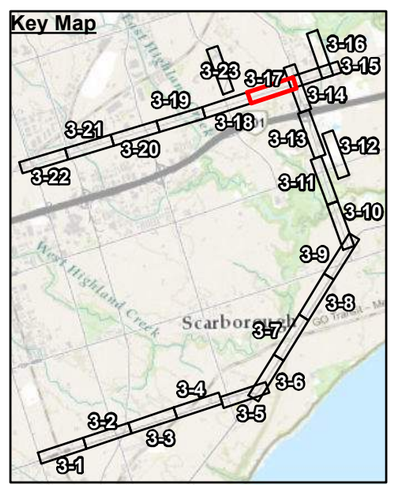
Project:	TA9307	**Figure:**	3-16
Date:	October, 2023	**Prepared By:**	VLG
Scale:	1:4,000	**Verified By:**	GNK



Ecological Land Classification

- FOD3-1: Dry-Fresh Poplar Deciduous Forest Type
- FOD5-7: Dry-Fresh Sugar Maple-Black Cherry Deciduous Forest Type
- MAS2-1: Cattail Mineral Shallow Marsh Type
- SWM1-1: White Cedar-Hardwood Mineral Mixed Swamp Type

Key Map



LEGEND

- Proposed Eglington East LRT Alignment
- Scarborough Malvern LRT
- Sheppard Avenue
- Breeding Bird Point Count
- Natural Heritage System (CoT)
- Ravine and Natural Feature Protection By-Law

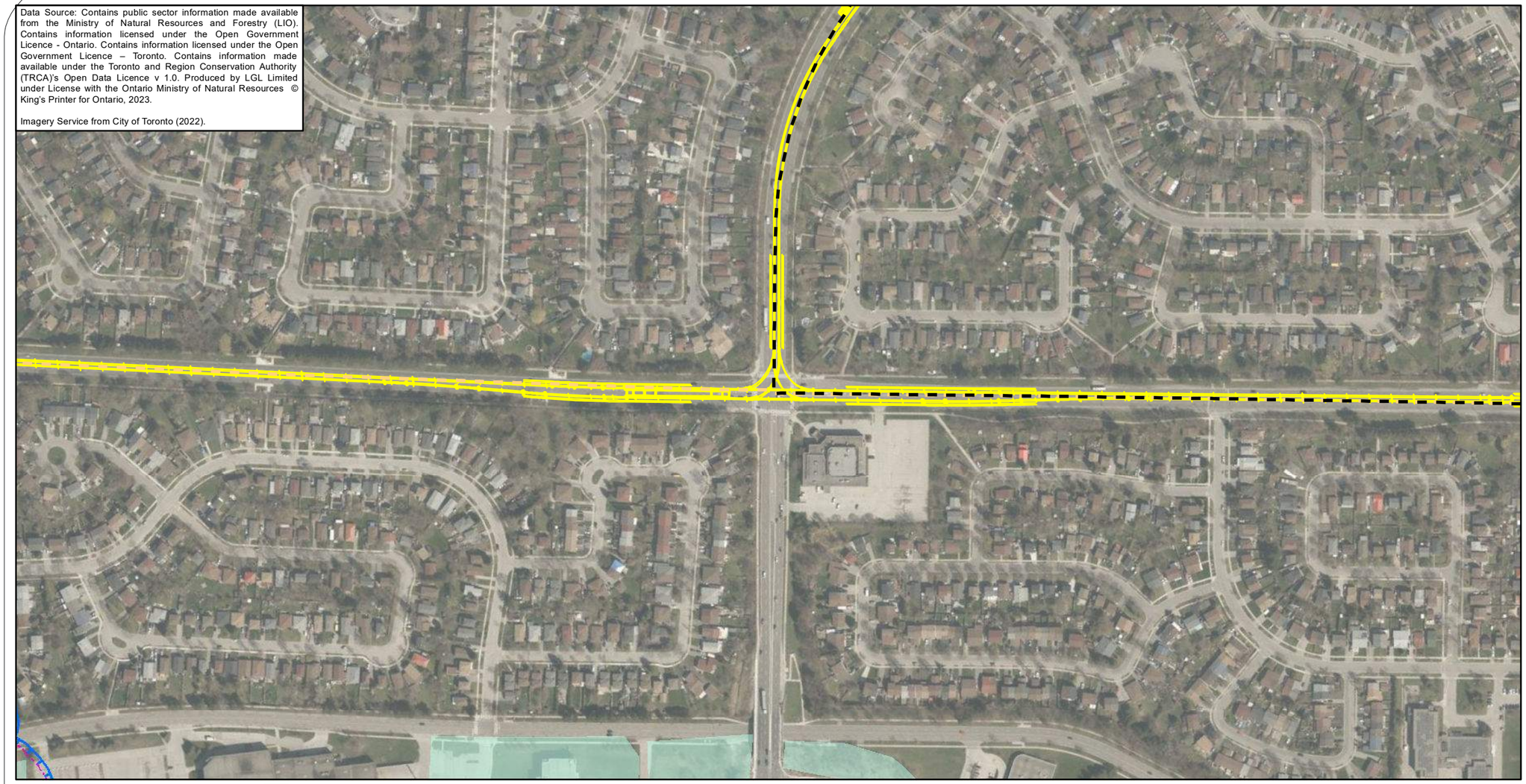
N W E S

0 50 100 150 200 m

Eglington East LRT
Existing Conditions

LGL LIMITED
environmental research associates

Project:	TA9307	**Figure:**	3-17
Date:	October, 2023	**Prepared By:**	VLG
Scale:	1:4,000	**Verified By:**	GNK



Ecological Land Classification

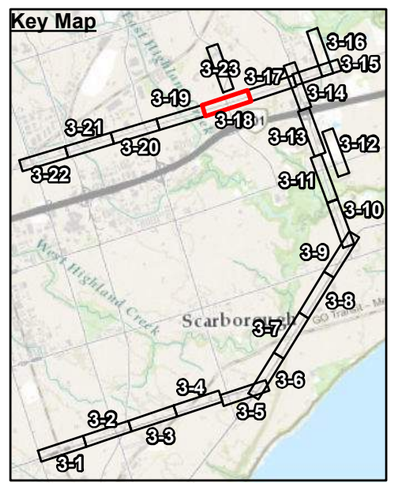
LEGEND

- Proposed Eglington East LRT Alignment
- Scarborough Malvern LRT
- Sheppard Avenue
- Natural Heritage System (CoT)
- Ravine and Natural Feature Protection By-Law
- Regulation Limit (TRCA)

N
W
E
S

0 50 100 150 200 m

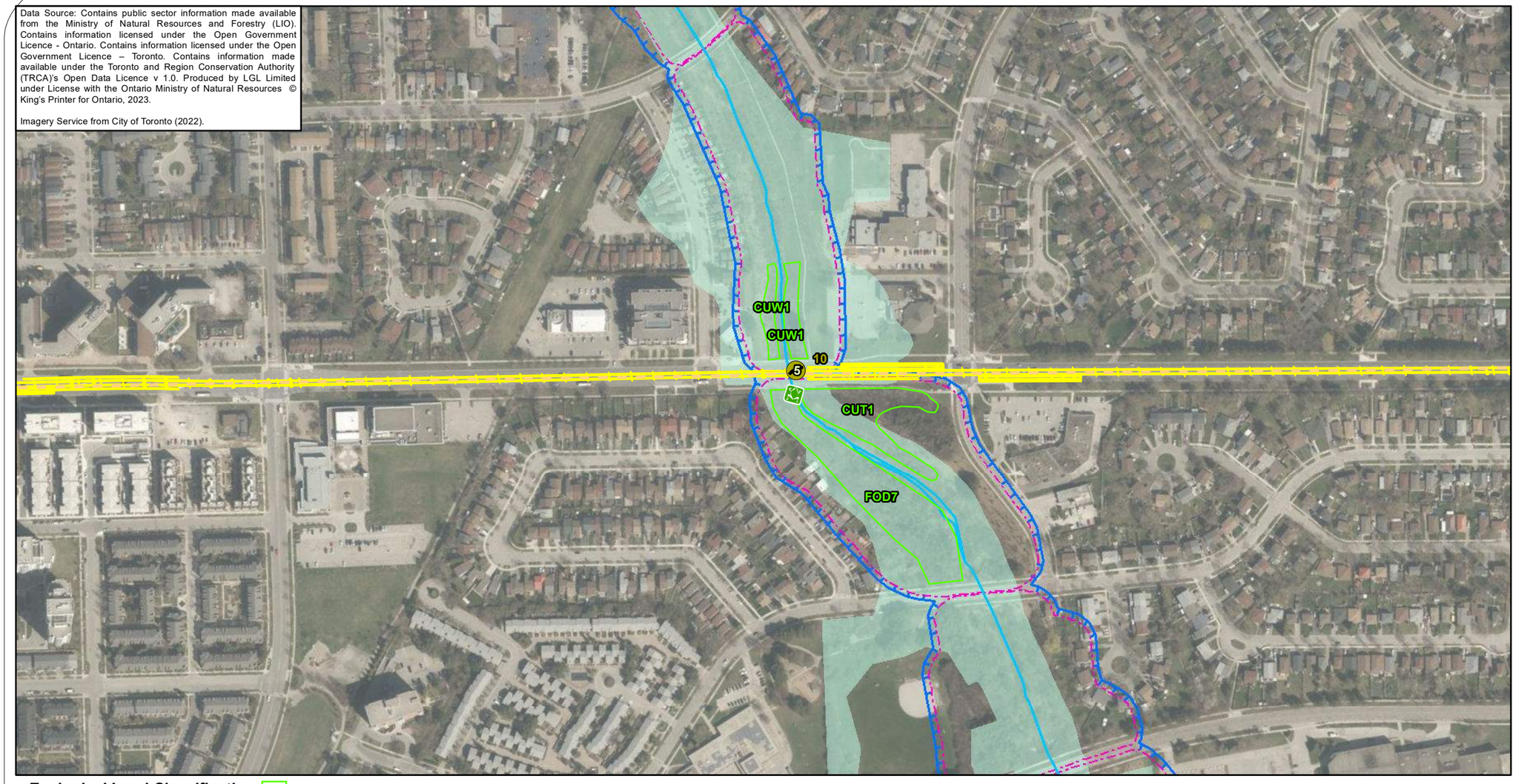
Key Map



Eglington East LRT
Existing Conditions

LGL LIMITED
environmental research associates

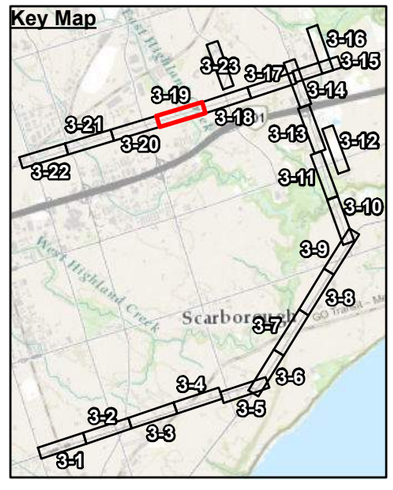
Project:	TA9307	**Figure:**	3-18
Date:	October, 2023	**Prepared By:**	VLG
Scale:	1:4,000	**Verified By:**	GNK



Ecological Land Classification

- CUT1: Mineral Cultural Thicket Ecosite
- CUW1: Mineral Cultural Woodland Ecosite
- FOD7: Fresh-Moist Lowland Deciduous Forest Ecosite

Key Map



LEGEND

- Proposed Eglington East LRT Alignment
- Sheppard Avenue
- Amphibian Monitoring Location
- Breeding Bird Point Count
- Watercourse
- Natural Heritage System (CoT)
- Ravine and Natural Feature Protection By-Law
- Regulation Limit (TRCA)

N W E S

0 50 100 150 200 m

Eglington East LRT
Existing Conditions

LGL LIMITED
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Project:	TA9307	**Figure:**	3-19
Date:	October, 2023	**Prepared By:**	VLG
Scale:	1:4,000	**Verified By:**	GNK

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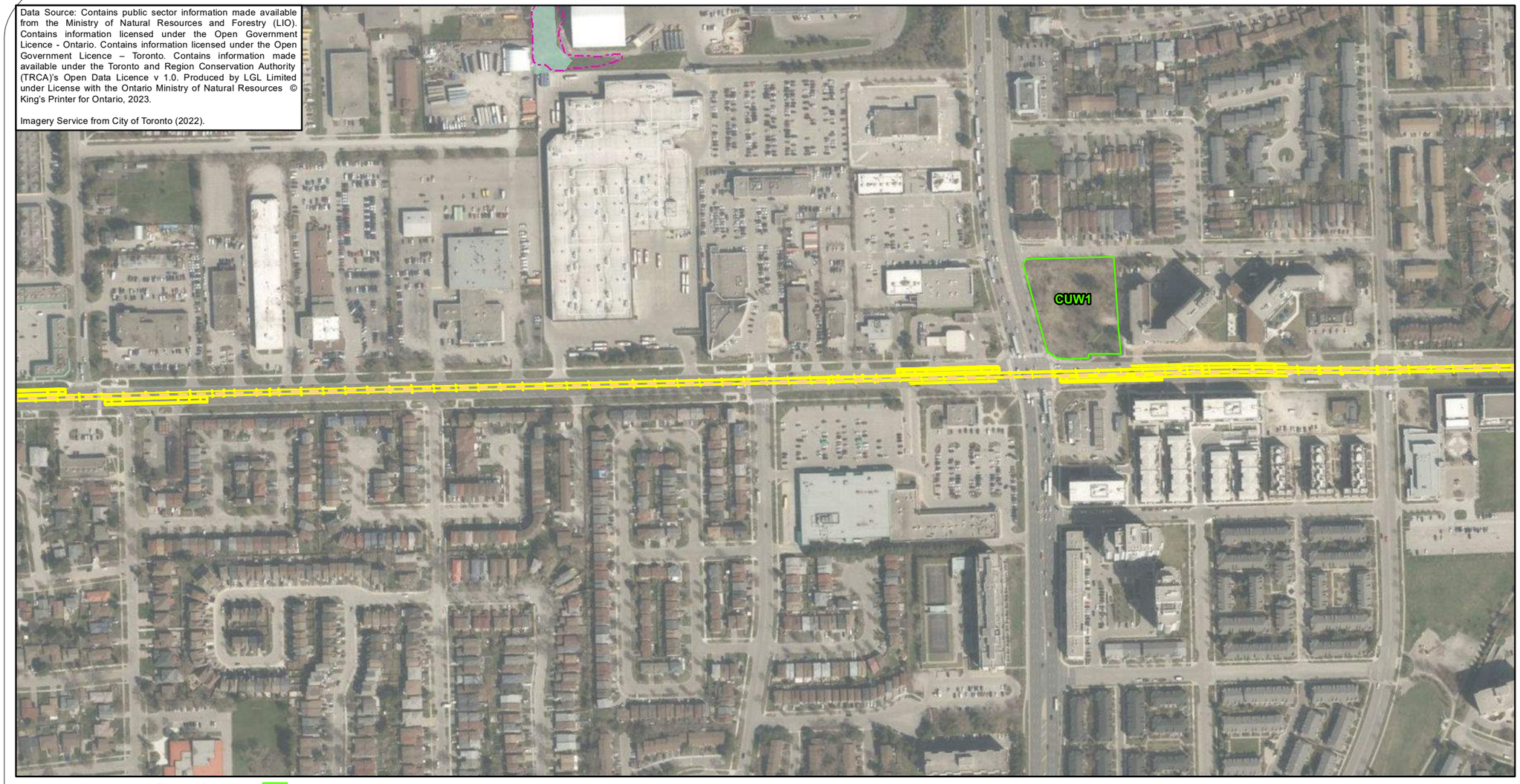
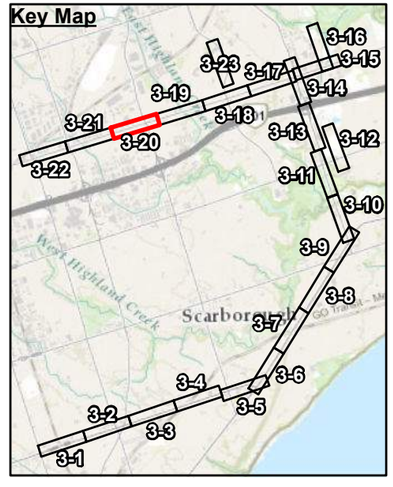


Ecological Land Classification

CUW1: Mineral Cultural Woodland Ecosite

Key Map



LEGEND

- Proposed Eglington East LRT Alignment
- Sheppard Avenue
- Natural Heritage System (CoT)
- Ravine and Natural Feature Protection By-Law

N
W E
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0 50 100 150 200 m

Eglington East LRT
Existing Conditions

LGL LIMITED
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Project:	TA9307	**Figure:**	3-20
Date:	October, 2023	**Prepared By:**	VLG
Scale:	1:4,000	**Verified By:**	GNK

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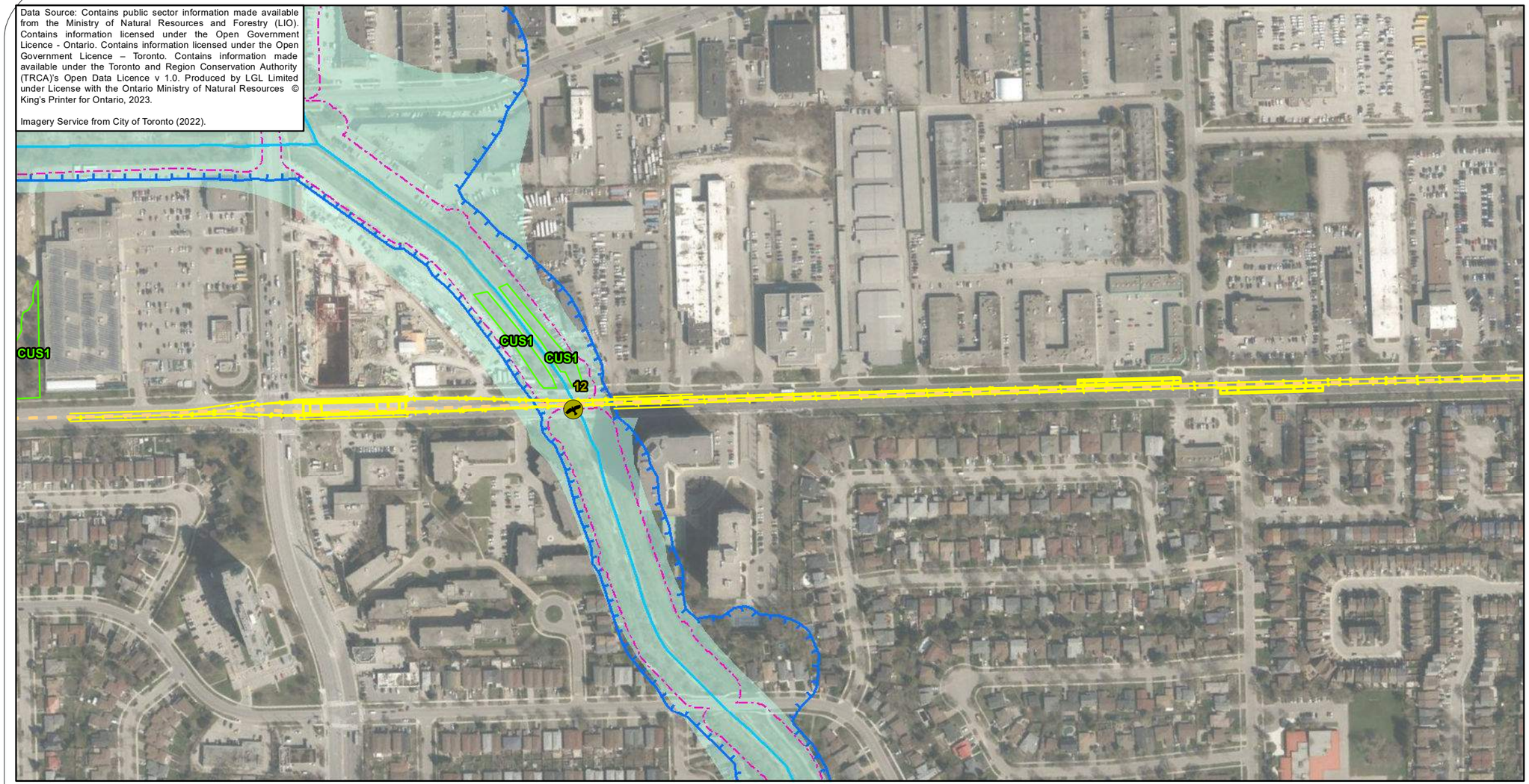
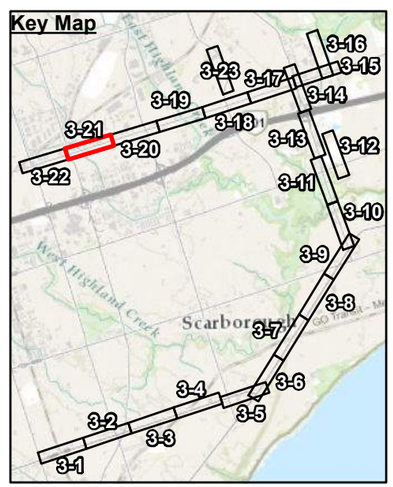


Ecological Land Classification

- CUS1: Mineral Cultural Savannah Ecosite

Key Map



LEGEND

- Proposed Eglington East LRT Alignment
- Sheppard Avenue LRT
- Breeding Bird Point Count
- Watercourse
- Natural Heritage System (CoT)
- Ravine and Natural Feature Protection By-Law
- Regulation Limit (TRCA)

N W E S

0 50 100 150 200 m

Eglington East LRT
Existing Conditions

LGL LIMITED
environmental research associates

Project:	TA9307	**Figure:**	3-21
Date:	October, 2023	**Prepared By:**	VLG
Scale:	1:4,000	**Verified By:**	GNK

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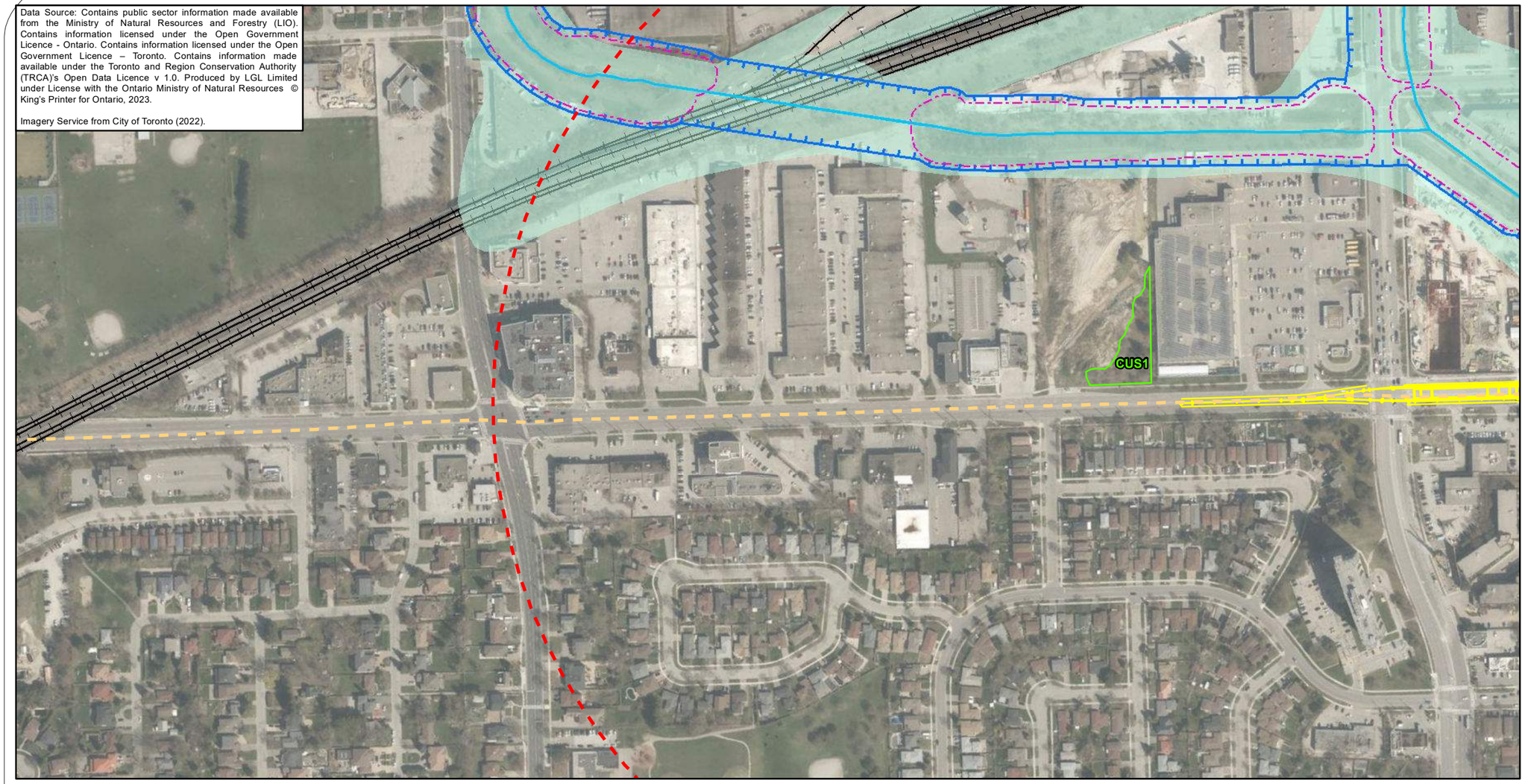
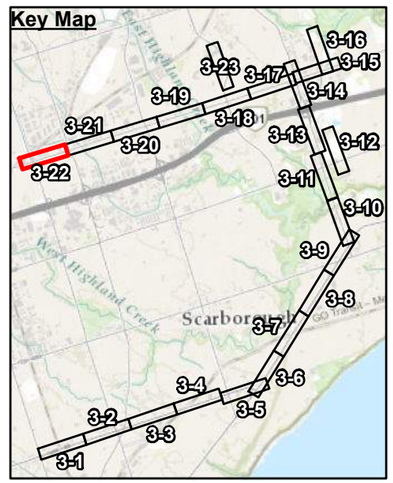


Ecological Land Classification
- CUS1: Mineral Cultural Savannah Ecosite

Key Map



LEGEND

- Proposed Eglington East LRT Alignment
- Sheppard Avenue LRT
- Railway
- Watercourse
- Natural Heritage System (CoT)
- Ravine and Natural Feature Protection By-Law
- Regulation Limit (TRCA)

N W E S

0 50 100 150 200 m

Eglington East LRT
Existing Conditions

LGL LIMITED
environmental research associates

Project:	TA9307	**Figure:**	3-22
Date:	October, 2023	**Prepared By:**	VLG
Scale:	1:4,000	**Verified By:**	GNK

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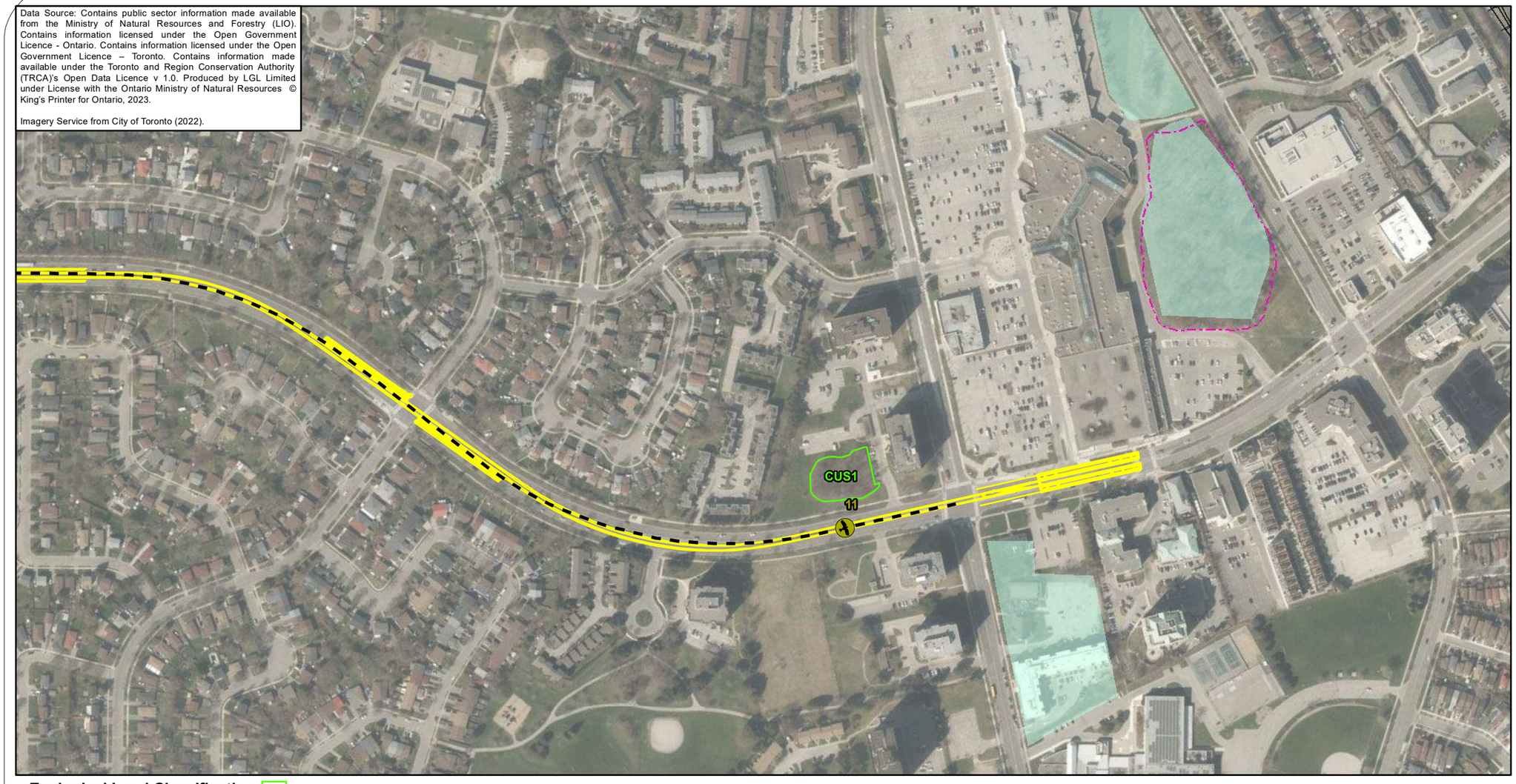
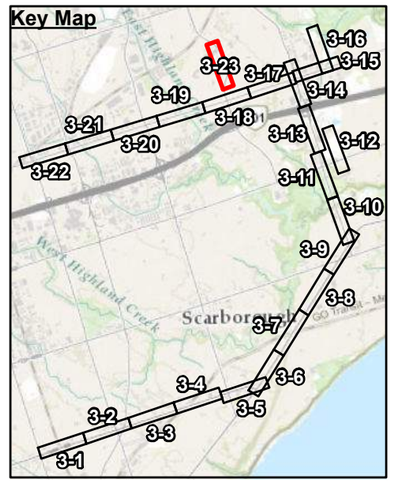


Ecological Land Classification

- CUS1: Mineral Cultural Savannah Ecosite

Key Map



LEGEND

- Proposed Eglington East LRT Alignment
- Scarborough Malvern LRT
- Breeding Bird Point Count
- Railway
- Natural Heritage System (CoT)
- Ravine and Natural Feature Protection By-Law

0 50 100 150 200 m

Eglington East LRT
Existing Conditions

LGL LIMITED
environmental research associates

Project:	TA9307	**Figure:**	3-23
Date:	October, 2023	**Prepared By:**	VLG
Scale:	1:4,000	**Verified By:**	GNK

TABLE 2.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION VEGETATION COMMUNITIES WITHIN THE STUDY AREA

ELC Code	Vegetation Type	Species Association	Comments
Terrestrial-Natural/Semi-Natural			
FOM	MIXED FOREST		
FOM2	Dry-Fresh White Pine-Maple-Oak Mixed Forest	**Canopy:** includes eastern white pine (*Pinus strobus*), eastern hemlock (*Tsuga canadensis*), trembling aspen (*Populus tremuloides*), red maple (*Acer rubrum*), and black cherry (*Prunus serotina*). **Understory:** includes black cherry, smooth juneberry (*Amerlanchier laevis*), and Tartarian honeysuckle (*Lonicera tatarica*). **Ground Cover:** includes Pennsylvania sedge (*Carex pensylvanica*), yellow avens (*Geum aleppicum*), and spinulose wood fern (*Dryopteris carthusiana*).	• Tree cover > 60 % (FO). • Conifer trees > 25 % and deciduous trees > 25% of canopy cover (M). • White pine dominant (2).
FOM2-2	Dry-Fresh White Pine-Sugar Maple Mixed Forest	**Canopy:** includes sugar maple (*Acer saccharum* var. *saccharum*), black cherry, eastern white pine, white birch (*Betula papyrifera*), and red ash (*Fraxinus pennsylvanica*). **Understorey:** includes **i**ronwood (*Ostrya virginiana*), common buckthorn (*Rhamnus cathartica*), red p a n i c l e d dogwood (*Cornus racemosa*) and sugar maple. **Ground Cover:** includes garlic mustard (*Alliaria petiolata*), blue-stem goldenrod (*Solidago caesia*), wood avens (*Geum urbanum*) and, pale swallowwort (*Cynanchum rossicum*).	• Tree cover > 60 % (FO). • Conifer trees > 25 % and deciduous trees > 25% of canopy cover (M). • White pine dominant (2). • Wihte pine with sugar maple (-2).

TABLE 2.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION VEGETATION COMMUNITIES WITHIN THE STUDY AREA

ELC Code	Vegetation Type	Species Association	Comments
FOM7-2	Fresh- Moist White Cedar-Hardwood Mixed Forest	**Canopy:** includes eastern white cedar (*Thuja occidentalis*), red ash, red maple and poplar species (*Populus* spp.). **Understorey:** includes eastern white cedar, red ash, common buckthorn and Tartarian honeysuckle. **Ground Cover:** includes garlic mustard *(Alliaria petiolate*), eastern bracken-fern (*Pteridium aquilinum* var. *latiusculum*), pale swallowwort, and spotted-touch-me-not (*Impatiens capensis*).	• Tree cover > 60 % (FO). • Coniferous trees > 25 % and deciduous trees > 25 % of canopy cover (M). • Fresh to moist soils on middle to lower slopes with well to very poor drainage. • Eastern white cedar is dominant (7) • red ash and red maple are sub-dominant (-2).
FOD	DECIDUOUS FOREST		
FOD3-1	Dry-Fresh Poplar Deciduous Forest	**Canopy:** includes trembling aspen. **Understorey:** includes Tartarian honeysuckle. **Ground Cover:** includes pale swallowwort, Canada goldenrod (*Solidago canadensis)* and riverbank grape (*Vitis riparia*).	• Tree cover > 60 % (FO). • Deciduous trees > 75 % of canopy cover (D). • Communities with dry to fresh soil moisture, found on upper to middle slope or tableland. • Trembling aspen is dominant (3-1).
FOD4	Dry-Fresh Deciduous Forest	**Canopy:** includes black locust (*Robinia pseudo-acacia*) and Norway maple (*Acer platanoides*). **Understorey:** includes common buckthorn and Tartarian honeysuckle. **Ground Cover:** includes pale swallowwort, tall goldenrod (*Solidago canadensis* var. *scabra*), and wood avens (*Geum urbanum*).	• Tree cover > 60 % (FO). • Deciduous trees > 75 % of canopy cover (D). • Communities with sand and loam soils; and well to moderately well drainage. • Community with plant species associations resulting due to disturbance (4).

TABLE 2.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION VEGETATION COMMUNITIES WITHIN THE STUDY AREA

ELC Code	Vegetation Type	Species Association	Comments
FOD5-3	Dry-Fresh Sugar Maple-Oak Deciduous Forest	**Canopy:** includes sugar maple, red oak (*Quercus rubra*), and American beech (*Fagus grandifolia*). **Understory:** includes sugar maple, American beech and choke cherry (*Prunus virginiana* var. *virginiana*). **Ground Cover:** includes blue cohosh (*Caulophyllum giganteum*), large-leave aster (*Eurybia macrophylla*), and zig-zag goldenrod (*Solidago flexicaulis*).	• Tree cover > 60 % (FO). • Deciduous trees > 75 % of canopy cover (D). • Communities dominated by dry to fresh sand and loam soils, with rapid to well drainage, on upper to middle slopes. • Sugar maple is dominant (5). • Red oak is sub- dominant (-3).
FOD5-7	Dry-Fresh Sugar Maple-Black Cherry Deciduous Forest	**Canopy:** includes sugar maple, black cherry, eastern hemlock, and basswood (*Tilia americana*). **Understory:** includes eastern white cedar, alternate-leaved dogwood (*Cornus alternifolia*), sugar maple, and common buckthorn. **Ground Cover:** includes thimble-berry (*Rubus occidentalis*), wood avens, blubet bladder fern (*Cystopteris bulbifera*), and red currant (*Ribes rubrum*).	• Tree cover > 60 % (FO). • Deciduous trees > 75 % of canopy cover (D). • Communities dominated by dry to fresh sand and loam soils, with rapid to well drainage, on upper to middle slopes. • Sugar maple is dominant (5). • Black cherry is sub-dominant (-7).
FOD7	Fresh- Moist Lowland Deciduous Forest	**Canopy:** includes willow species (*Salix* spp.), basswood, balsam poplar (*Populus balsamifera* ssp. *balsmifera*), Manitoba maple (*Acer negundo*), and sugar maple. **Understorey:** includes common buckthorn, Tartarian honeysuckle, and Amur maple (*Acer ginnala*), and choke cherry. **Ground Cover:** includes sedge (*Carex* sp.), tall goldenrod, Canada thistle (*Cirsium arvense*), and pale swallowwort).	• Tree cover > 60 % (FO). • Deciduous trees > 75 % of canopy cover (D). • Soils with coarse and fine loams, and well to poor drainage on lower slopes and bottomlands. • Communities which are associated with floodplains (7).
FOD8-1	Fresh-Moist	**Canopy:** includes trembling aspen, balsam poplar, and	• Tree cover > 60 % (FO).

TABLE 2.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION VEGETATION COMMUNITIES WITHIN THE STUDY AREA

ELC Code	Vegetation Type	Species Association	Comments
	Poplar Deciduous Forest	white birch (*Betula papyrifera*). **Understory:** includes trembling aspen, alternate-leaved dogwood, and red ash. **Ground Cover:** includes pale swallowwort, and tall goldenrod, field horsetail (*Equisetum arvense*).	• Deciduous trees > 75 % of canopy cover (D). • Site dominanted by trembling aspen, largetooth aspen (8). • Poplar dominanted (1).
FOD	Deciduous Forest	**Canopy:** includes black walnut (*Juglans nigra*), eastern white cedar, Manitoba maple, Norway maple and basswood. **Understory:** includes round-leaved dogwood (*Cornus rugosa*), staghorn sumac (*Rhus hirta*), and Manitoba maple. **Ground Cover:** includes coltsfoot (*Tussilago farfara*), pale swallowwort, wood avens, and cleavers (*Galium aparine*).	• Tree cover > 60 % (FO). • Deciduous trees > 75 % of canopy cover (D).
Terrestrial/Cultural			
CUM	CULTURAL MEADOW		
CUM1-1	Dry-Moist Old Field Meadow	**Ground Cover:** includes wild carrot (*Daucus carota*), Canad thistle, awnless brome (*Bromus inermis* ssp. *inermis*), Canada goldenrod (*Solidago canadensis*), thimble and, tufted vetch (*Vicia cracca*).	• Cultural communities (CU). • Tree cover and shrub cover < 25 % (M) • This community can occur on a wide range of soil moisture regimes (Dry-Moist). • Pioneer community resulting from, or maintained by, anthropogenic-based influences (1-1).

TABLE 2.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION VEGETATION COMMUNITIES WITHIN THE STUDY AREA

ELC Code	Vegetation Type	Species Association	Comments
CUT	CULTURAL THICKET		
CUT1	Mineral Cultural Thicket	**Canopy:** includes white spurce (*Picea glauca*), trembling aspen, eastern red cedar (*Juniperus virginiana*), and eastern white pine. **Understory:** includes sweet cherry (*Prunus avium*), Manitoba maple, and Russian olive (*Elaeagnus angustifolia*). **Ground cover:** includes Canada goldenrod, creeping Charline (*Glechoma hederacea*), tufted vetch, red clover (*Trifolium pratense*), and pale swallowwort.	• Cultural communities (CU). Tree cover < 25%, Shrub cover > 25% (T). • This community occurs on mineral parent material or soils (1). • Community maintained by anthropogenic-based disturbance.
CUT1	Mineral Cultural Thicket	**Canopy:** includes Manitoba maple, white mulberry (*Morus alba*), and staghorn sumac. **Ground Cover:** includes tall goldenrod, and Kentucky bluegrass (*Poa pratensis* ssp. *pratensis*).	• Cultural communities (CU). Tree cover < 25%, Shrub cover > 25% (T). • This community occurs on mineral parent material or soils (1). • Sumac dominant (-1).

TABLE 2.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION VEGETATION COMMUNITIES WITHIN THE STUDY AREA

ELC Code	Vegetation Type	Species Association	Comments
CUW	CULTURAL WOODLAND		
CUW1	Mineral Cultural Woodland	**Canopy:** includes Manitoba maple, red ash, eastern white pine, Scotch pine (*Pinus sylvestris*), and Norway spruce (*Picea abies*). **Understorey:** includes balsam poplar, choke cherry, black cherry, Manitoba maple and Norway maple. **Ground Cover:** includes awnless brome, Canada thistle, common milkweed (*Asclepias syriaca*), aster (*Aster* sp.), and wild carrot.	• Cultural communities (CU). • Tree cover between 35% and 60% (W). • Mineral soil (1).
CUS	CULTURAL SAVANNAH		
CUS1	Mineral Cultural Savannah	**Canopy:** includes white spruce, eastern white pine, Scotch pine, Siberian elm (*Ulmus pumila*), and Norway maple. **Understory:** includes white birch, bur oak (*Quercus macrocarpa*), staghorn sumac, basswood and silver poplar (*Populus alba*). **Ground Cover:** includes bitter nightshade (*Solanum dulcamara*), riverbank grape, wild carrow, and catchfly (*Silene vulgaris*).	• Cultural communities (CU). • 25% < tree cover ≤ 35% (S). • Mineral soil (1).
CUP	CULTURAL PLANTATION		
CUP3-3	Scotch Pine Coniferous Plantation	**Canopy:** includes Scotch pine, Austrian pine (*Pinus nigra*), and European larch (*Larix decidua*). **Understory:** includes Scotch pine, white mulberry, Tartarian honeysuckle and eastern white cedar. **Ground cover:** includes dame's rocket (*Hesperis matronalis*), agrimony (*Agrimonia* sp.), pale swallowwort and garlic mustard.	• Cultural communities (CU). • Plantation (P). • Coniferous tree cover >75% of canopy cover (3). • Scotch pine dominant (-3).

TABLE 2.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION VEGETATION COMMUNITIES WITHIN THE STUDY AREA

ELC Code	Vegetation Type	Species Association	Comments
WETLAND			
SWC	CONIFEROUS SWAMP		
SWC1-2	White Cedar-Conifer Mineral Coniferous Swamp	**Canopy:** includes eastern white cedar and eastern white pine. **Sub Canopy:** includes eastern white cedar, red ash, and white birch. **Ground Cover:** includes pale swallow-wort.	• Standing water >20% of ground coverage dominated by hydrophytic shrub and tree species (SW). • Tree cover > 25 %, trees > 5 m in height and conifer tree species > 75 % of canopy cover (C). • Mineral substrate (1). • White cedar with coniferous species (-2).
SWC3	White Cedar Organic Coniferous Swamp	**Canopy:** includes eastern white cedar, tamarack (*Larix laricina*), and yellow birch (*Betula allghaniensis*). **Understory:** includes eastern white cedar, white birch and tamarack. **Ground Cover:** includes sensitive fern (*Onoclea sensibilis*), tall goldenrod, skunk-cabbage (*Symplocarpus foetidus*), and cinnamon fern (*Osmunda cinnamomea*).	• Standing water >20% of ground coverage dominated by hydrophytic shrub and tree species (SW). • Tree cover > 25 %, trees > 5 m in height and conifer tree species > 75 % of canopy cover (C). • Organic substrate and white cedar dominant (3).

TABLE 2.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION VEGETATION COMMUNITIES WITHIN THE STUDY AREA

ELC Code	Vegetation Type	Species Association	Comments
SWM	MIXED SWAMP		
SWM1-1	White Cedar-Hardwood Mineral Mixed Swamp	**Canopy:** includes eastern white cedar, eastern hemlock, Manitoba maple and Freeman's maple (*Acer* X *Freemanii*). **Understorey:** includes eastern white cedar, yellow hirch, red ash and Tartarian honeysuckle. **Ground Cover:** includes bulbet bladder fern, cleavers, spotted-touch-me-not, purple flowering raspberry (*Rubus odoratus*).	• Standing water >20% of ground coverage dominated by hydrophytic shrub and tree species (SW). • Tree cover > 25 %, trees > 5 m in height and deciduous tree species > 25 % and coniferous tree species > 25% of canopy cover (M). • Mineral soil (1). • Eastern white cedar and hardwood dominant (-1).
SWM5-1	Red Maple-Conifer Organic Mixed Swamp	**Canopy:** includes red maple, eastern hemlock, eastner white cedar and yellow birch. **Understorey:** includes red maple, yellow birch, trembling aspen and black ash (*Fraxinus nigra*). **Ground Cover:** includes skunk cabbage, large-leaved aster, sensitive fern and cinnamon fern.	• Standing water >20% of ground coverage dominated by hydrophytic shrub and tree species (SW). • Tree cover > 25 %, trees > 5 m in height and deciduous tree species > 25 % and coniferous tree species > 25% of canopy cover (M). • Communities found on organic soils (5). • Red maple dominant (-1).

TABLE 2.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION VEGETATION COMMUNITIES WITHIN THE STUDY AREA

ELC Code	Vegetation Type	Species Association	Comments
SWT	THICKET SWAMP		
SWT3-2	Mineral Thicket Swamp	**Canopy:** includes white birch, black ash, eastern white cedar and red ash. **Understorey**: includes trembling aspen, red-osier dogwood (*Cornus sericea* ssp. *sericea*), common buckthorn, and eastern white cedar. **Ground Cover**: includes sedges, fowl manna grass (*Glyceria striata*), skunk-cabbage, sensitive fern and spotted joe-pye-weed (*Eupatorium maculatum* var. *maculatum*).	• Standing water >20% of ground coverage dominated by hydrophytic shrub and tree species (SW). • Tree cover < 25%, hydrophytic shrubs > 25% (T). • Organic substrate (3). • Willow dominant (-2).
MAM	MEADOW MARSH		
MAM2-2	Reed-canary grass Meadow Marsh	**Ground Cover:** includes reed canary grass (*Phalaris arundinacea*), sensitive fern, skunk cabbage, and swamp milkweed (*Asclepias incarnata* ssp. *incarnata*).	• Seasonally flooded and • dominated by emergent hydrophytic macrophytes (MAM). • Tree and shrub cover <= 25%. • Communities with mineral soil (2). • Reed-canary grass dominant (-2).
MAS	SHALLOW MARSH		
MAS2	Mineral Shallow Marsh	**Ground Cover:** includes European reed (*Phragmites australis* ssp. *australis*), narrow-leaved cattail (*Typha angustifolia*), reed canary grass, pale swallowwort, and Canada goldenrod.	• Tree and shrub cover <= 25%, Hydrophytic emergent macrophyte > 25%. • Standing or flowing water for much or all of season (MAS). • Parent mineral material (2).

TABLE 2.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION VEGETATION COMMUNITIES WITHIN THE STUDY AREA

ELC Code	Vegetation Type	Species Association	Comments
MAS2-1	Cattail Mineral Shallow Marsh	**Ground Cover:** includes cattail species (*Typha* spp.), European reed, sedges, spotted-Joe-pye-weed, Canada thistle, purple loosestrife (*Lythrum salicaria*).	• Tree and shrub cover <= 25%, Hydrophytic emergent macrophyte > 25%. • Standing or flowing water for much or all of season (MAS). • Parent mineral material (2). • Narrow-leaved cattail is dominant (-1).