

## 2. Existing and Future Conditions

This Chapter describes the existing and future conditions (without the implications of the planned Scarborough Subway Extension (SSE)) found within and adjacent to the Study Area as defined in Exhibit 1-1. The description of existing and future conditions provide a baseline for the generation of alternatives, assessment of impacts and the identification of mitigation measures and a monitoring plan. Existing and future conditions for the Scarborough Subway Extension (SSE) involved the collection of primary and secondary source data derived from surveys, field investigation, published and unpublished literature, government sources and consultation with agencies and the public. For the purposes of this assessment, data collected were organized into the following key categories:

- Natural Environment;
- Emissions;
- Socio-Economic Environment;
- Cultural Environment; and,
- Transportation System.

### 2.1 Natural Environment

#### 2.1.1 Physiography, Geology, Soil Conditions

##### 2.1.1.1 Physiography

Based on the Physiography of Southern Ontario by Chapman and Putman (1984), the Study Area is located in the physiographic region known as the South Slope, which consists of the southern slope of the Oak Ridges Moraine and the southern portion of the Peel Plain.

In the Scarborough area, the South Slope primarily consists of the southern portion of the Peel Plain and is described as a rolling glacial till plain with low drumlins and flutings oriented in a northwest-southeast direction.

##### 2.1.1.2 Geology

The Quaternary deposits of the Toronto area generally consist of glacial till, glaciolacustrine and glaciofluvial deposits of gravels, sands, silts and clays with beach deposits of sand and gravel. These soils were deposited by glaciers and associated glacial lakes and rivers during the Wisconsinan Glaciation period. Recent alluvium deposits are found in river and stream valleys and the associated floodplains.

Published Quaternary Geology mapping indicates that the soils in the Study Area are late and middle Wisconsinan Deposits placed during several glacial advances and retreats. These fluctuations of the glacial front resulted in glacial till layers with interstadial deposits of sands and silts as described below:

- **Halton Till:** Typically comprised of sandy silt to silty sand, with some localized layers of clayey silt to silty clay till. Water bearing gravel, sand and silt layers are encountered in the till. In some areas the interlayered sands and gravels are under artesian pressure.

- **Upper Aquifer or Maple Formation:** Considered a part of the Oak Ridge Moraine, and consists of sands, silty sands / sandy silts and silts.
- **Newmarket Till:** Typically comprised of silty clay and clayey silt with varying amounts and layers of sands and gravels.
- **Lower Aquifer or Thorncliffe Formation:** Typically comprised of gravels, sands silts.

The bedrock underlying the quaternary soil deposits consists of shale of the Georgian Bay Formation, which is interbedded with layers and seams of limestone and siltstone. Based on published literature, the bedrock in the Study Area is typically encountered at depths in the order of about 50 to 60 metres or more below grade.

##### 2.1.1.3 Soil Conditions

Based on recent and historical geotechnical investigations carried out by and on behalf of Toronto Transit Commission (TTC), the subsurface conditions in the Study Area generally consist of the following:

- A ground surface cover of field grasses, topsoil or pavement structure;
- Fill with a variable composition ranging from non-cohesive sandy and silty soils to cohesive clayey soils with varying quantities of gravel and occasional organics, cobbles, boulders, and at times construction debris;
- Glacial till that is typically comprised of sandy silts and clayey silts with seams and local deposits of silt, sand and clay;
- Silty and sandy soils;
- Clay till, silty clay till and clayey silt till; and,
- Bedrock was not encountered or reported during the investigations.

The following soil descriptions are based on historic and recent boreholes advanced on behalf of TTC:

##### Surficial Materials:

- Consisting of topsoil or pavement structure (asphalt over granular base / sub-base) typically encountered at the ground surface in the boreholes advanced in the Study Area and should be anticipated at the ground surface throughout the Study Area given the urban environment.
- The thickness of these materials will be variable throughout the Study Area.

##### Fill:

- Encountered below the surficial materials in the majority of boreholes and should be expected throughout the Study Area, given the urban environment and development.
- Fill encountered typically consisted of a variable mixture of gravel, sand, silt and clay soils, with occasional cobbles, boulders, roots and rootlets, organics, and debris such as asphalt, bricks, wood, concrete fragments, metal pieces, etc.
- The thickness of the fill at the borehole locations was variable ranging from less than 1 metre to upwards of about 7 to 9 metres in some areas. Experience indicates that the thickness of the fill in the Study Area will

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likely be in the order of about 1 to 2 metres thick, which is typical for a developed urban area. However, the thickness of the fill materials will be variable across the Study Area.

- The compactness / consistency of the fill are variable, ranging from very loose / very soft to very dense / hard.

### Glacial Till – Halton Till (Upper Till):

- Generally the Halton Till consists of silty sand and sandy silt. Zones, layers and seams of cohesive clayey silt / silty clay till and sands and silts were encountered interbedded within the silty sand / sandy silt. The gravel content was variable in the till.
- Although not encountered and reported, cobbles and boulders are typically encountered in till soils due to their depositional characteristics, and should be expected.
- The thickness of the Halton Till at the borehole locations was variable ranging from about 2 to 3 metres to upwards of about 25 metres.
- The compactness of the till is generally considered compact to very dense with localized very loose and loose zones.

### Interstadial Sands, Silty Sands and Sandy Silts – Maple Formation (Upper Aquifer):

- Generally consists of sands, silty sands and sandy silts of the Maple Formation (considered the Upper Aquifer and part of the Oak Ridges Moraine). Localized zones, layers and seams of cohesive clayey silt / silty clay soils were encountered and reported interbedded within the sand, silty sand and sandy silts. The gravel content was variable in this deposit.
- Although not encountered and reported, cobbles and boulders are typically encountered in the soils due to their depositional characteristics, and should be expected.
- The thickness of the interstadial sands and silts ranged from approximately 10 to 15 metres south of Ellesmere Road upward of about 25 to 30 metres north of Ellesmere Road.
- The compactness of the interstadial soils is generally considered dense to very dense with localized compact zones.

### Glacial Till – Newmarket Till (Lower Till)

- Generally the Newmarket Till consists of cohesive clay, clayey silt and sandy clay.
- Although not encountered and reported, cobbles and boulders are typically encountered in till soils due to their depositional characteristics, and should be expected.
- All but three boreholes were terminated in this deposit. The thickness of the soil in those three boreholes ranged from approximately 10 to 15 metres.
- The consistency of the lower till is generally considered very stiff to hard.

### Sand / Sandy Silt – Thorncliffe Formation (Lower Aquifer):

- The sand / sandy silt of the Thorncliffe Formation, which is considered a lower aquifer, was encountered in three boreholes.
- The boreholes were terminated 5 to 15 metres into this deposit.
- The compactness of the sand / sandy silt was considered dense to very dense.
- The soil was saturated and artesian conditions were encountered in the area of Highland Creek just north of Lawrence Avenue East, which will have influenced the compactness assessment.

#### **2.1.1.4 Future Conditions**

No major changes to physiography, geology, and soil conditions are expected.

### **2.1.2 Groundwater**

#### **2.1.2.1 Groundwater Flow**

In general, the regional groundwater flow is south / southeast towards Lake Ontario. Locally, the shallow groundwater flow is anticipated to be towards the various branches of Highland Creek, then south / southeast towards Lake Ontario.

#### **2.1.2.2 Groundwater Conditions**

Boreholes advanced in the Study Area indicate groundwater at depths in the range of about 1 to 10 metres below grade, elevations in the order of about 145 to 165 metres. Typically, groundwater was encountered and reported at depths in the order of 2 to 4 metres below grade.

Artesian conditions were encountered in one borehole advanced on McCowan Road just north of Lawrence Avenue near the west branch of Highland Creek. The screened portion of this well was located at elevations of approximately 114 to 111 metres, within the sand / sandy silt of the Thorncliffe Formation. The groundwater level in this well is at an elevation of about 159 metres, approximately 12 metres above the ground surface.

It is noted that perched water is generally encountered in fill deposits and should be expected in the fill soils throughout the Study Area, especially near the interface between the fill and native soils.

#### **2.1.2.3 Drinking Water Supply Wells**

The Ministry of the Environment and Climate Change (MOECC) Water Well Information System (WWIS) database included in the October 2014 EcoLog ERIS Report indicates that there are 454 wells reported on within 0.25 kilometres of the Study Area. A review of these records indicates that the majority of the wells are test, monitoring and/or observation wells. However, 42 wells are identified as water wells with installation dates from 1945 to 1976. Given that this area is an urban area with water supplied from Lake Ontario, these wells were likely decommissioned or abandoned during development.

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### 2.1.2.4 Future Conditions

No major changes to groundwater are expected.

## 2.1.3 Drainage and Hydrology

### 2.1.3.1 Macro Drainage System

The Study Area is located within the Highland Creek watershed. The Highland Creek watershed is approximately 102 square kilometres in area, with over 75 kilometres of watercourses. The watershed is almost completely (85 %) urbanized, and represents the most developed watershed in the jurisdiction of the Toronto and Region Conservation Authority (TRCA). Most of the development had occurred before stormwater management controls became required, resulting in high peak flows associated with urban watercourses, as well as poor water quality. The watercourses have been significantly altered as a result of the development occurring in the past. This approach also resulted in severe erosion affecting a number of reaches, and requiring frequent stabilization efforts. As a result, a significant portion of the channel network has been either buried underground or lined with concrete or gabion baskets to reduce erosion and prevent flooding. The watershed also has a number of fish barriers (like dams and weirs) and a lack of riparian vegetation.

### 2.1.3.2 Micro Drainage System

Local drainage from the Scarborough Centre Station and related facilities will be required to tie in to existing sewers. Existing sewer systems are generally designed to accommodate only minor runoff events for the existing level of development. The Scarborough Centre Station and related facilities, although being constructed in already built-up areas, would potentially be required to over control the peak flows as required by the discharged criteria to municipal sewers.

### 2.1.3.3 Water Quality

The City of Toronto's Wet Weather Flow Management Master Plan and Wet Weather Flow Management Guidelines provide direction on various methods for improving the quality of stormwater runoff. Any proposed works to be considered by this undertaking must be consistent with the approach and recommendations of this governing document.

### 2.1.3.4 Future Conditions

No major changes to drainage and hydrology are anticipated.

For additional details on drainage and hydrology refer to **Appendix B-2** Stormwater Management Report.

## 2.1.4 Fish and Fish Habitat

The Study Area lies within the Highland Creek watershed. The Dorset Park Branch and the Bendale Branch connect south of Lawrence Avenue to form West Highland Creek. The Markham Branch and the Malvern Branch connect south of Highway 401 to form East Highland Creek. West Highland Creek and East Highland Creek connect upstream of Morningside Avenue to form the Main Highland Creek.

The resident fish community of Highland Creek is typical of a degraded urban stream and supports a warmwater and a migratory coldwater fish community. The upper reaches of Highland Creek are generally highly degraded by channelization and enclosure, although the City of Toronto and TRCA are making extensive efforts to rehabilitate several of these tributaries. Brown Trout and Chinook Salmon are known to use reaches downstream of Morningside Avenue and it is likely that the barrier (weir) observed upstream of Morningside Avenue would limit this migratory species from accessing upstream areas.

Lands Information Ontario (LIO) indicates that West Highland Creek supports a coldwater thermal regime (based on water temperature) and East Highland Creek supports a warmwater thermal regime (based on fish species present). The Dorset Park Branch, Bendale Branch, Markham Branch and Malvern Branch all support warmwater fish communities. Fish communities within the Study Area are shown in **Exhibit 2-1**.

Consultation with the Ministry of Natural Resources and Forestry (MNRF) indicates that a warmwater timing window would apply for all Highland Creek reaches, defined as July 1 to March 31 (MNRF Aurora District, M. Heaton, pers. comm. Sept. 2014). Aquatic field investigations were conducted by LGL Limited on June 17, 2015 at three watercourse crossings located along the preferred alignment for the Project. The purpose of the aquatic field investigations was to provide a detailed characterization of aquatic habitat conditions at watercourse crossings. The aquatic habitat investigation generally followed procedures outlined in the Ministry of Transportation (MTO) Environmental Guide to Fish and Fish Habitat (MTO, 2009). Assessments were conducted within 50 metres upstream and downstream of proposed watercourse crossings. No formal fish collections were performed, although observations of fish presence / absence were recorded.

Secondary source information review was undertaken to identify the fisheries resources and associated aquatic habitat within the Study Area. The secondary source review included TRCA fish collection records as well as Aquatic Resource Area information available via the LIO database.

Watercourses investigated included:

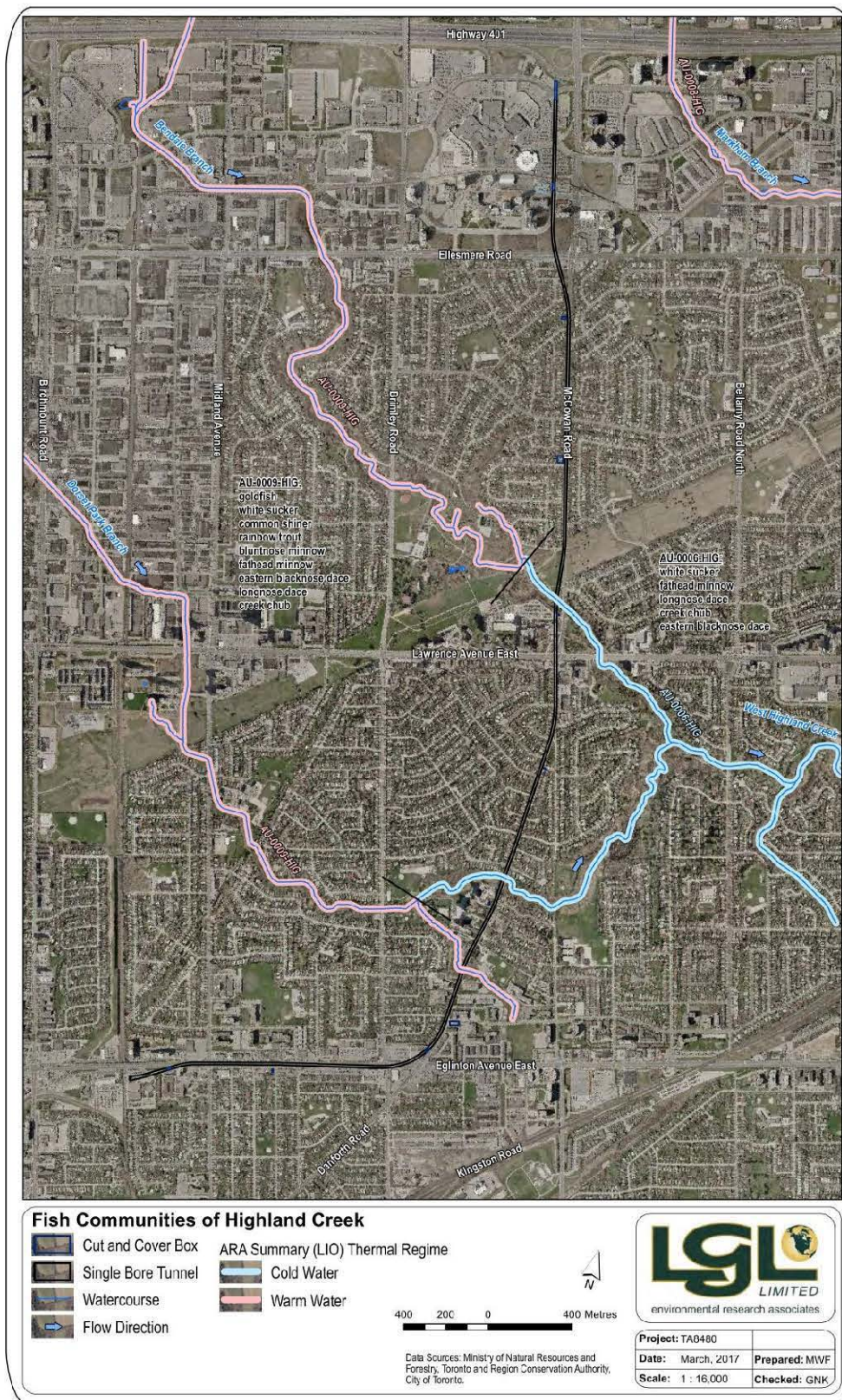
- Tributary of Dorset Park Branch of West Highland Creek, crossing under Danforth Road north of Eglinton Avenue;
- Dorset Park Branch of West Highland Creek, crossing under Danforth Road north of Providence Street; and,
- Bendale Branch of West Highland Creek, crossing under McCowan Road north of Lawrence Avenue.

### 2.1.4.1 Future Conditions

No major changes to fish and fish habitat are anticipated.

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**Exhibit 2-1: Fish Communities within the Study Area**



## 2.1.5 Terrestrial Ecosystems

The Highland Creek watershed is located in a transition zone between the Carolinian (deciduous forest) and Great Lakes-St. Lawrence (mixed forest) regions, but features species and communities more typical of the latter. The Study Area is highly urbanized with most remaining terrestrial natural heritage features associated with valleylands and hydro corridors. Approximately 11 % of the Highland Creek watershed remains in natural forest cover.

The geographical extent, composition, structure and function of vegetation communities were identified through air photo interpretation and field investigations carried out within the Study Area. Air photos were interpreted to determine the limits and characteristics of vegetation communities. Field investigations of the vegetation communities were conducted on June 12 and 17, July 21, and September 21, 2015. Field investigations were carried out to ground truth the boundaries of the vegetation communities and to conduct a botanical survey.

Vegetation communities were classified according to the Ecological Land Classification for Southern Ontario: First Approximation and Its Application (Lee et al., 1998). The communities were 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, 2009), City of Toronto (Varga, 2000), and the TRCA (2009). Vascular plant nomenclature follows Newmaster et al. (1998) with a few exceptions that have been updated to Newmaster et al. (2005).

Key terrestrial environment features within the Study Area are shown in Exhibit 2-2.

### 2.1.5.1 Vegetation Communities

Vegetation communities located within the Study Area consist of a mixture of cultural and forest communities. Most of the lands have been cleared for urban development, with the exception of valleylands and isolated tableland woodlots. Vegetation communities have varying degrees of colonization and disturbance. Evidence of disturbance includes 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.

Anthropogenic / cultural communities within the Study Area consist of cultural meadow (CUM1-1), cultural woodland (CUW1), and cultural thicket (CUT1). The natural / semi-natural heritage features within the Study Area are restricted mostly to the valleylands associated with Highland Creek and its tributaries. Natural / semi-natural communities consist of lowland deciduous forest (FOD7). In addition, the Frank Faubert Woods, a large remnant sugar maple dominant woodlot (FOD5), is located within the Study Area at Ellesmere Road and McCowan Road.

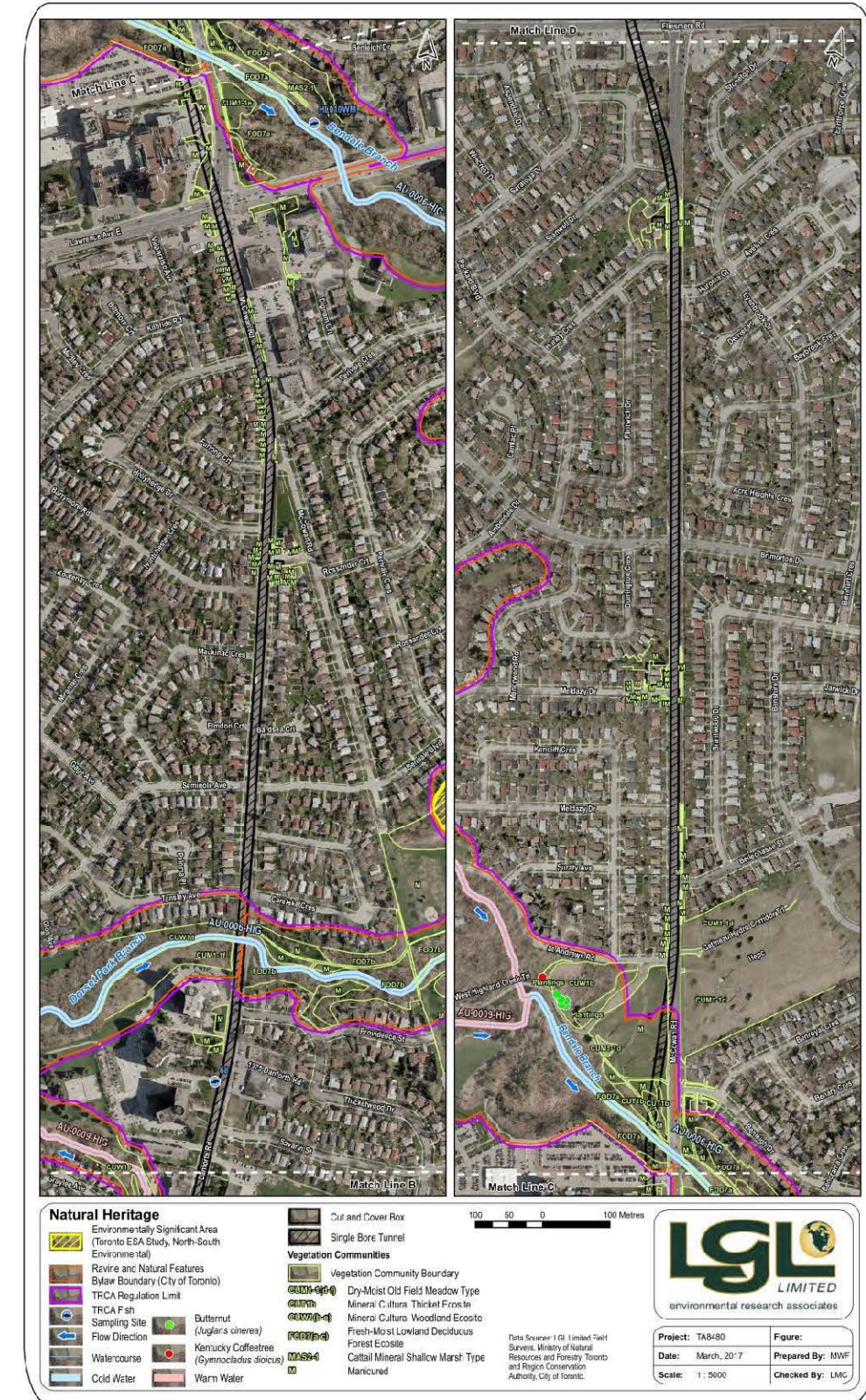
A total of six Ecological Land Classification (ELC) vegetation community types were identified by LGL Limited during botanical surveys. All of the vegetation communities identified within the Study Area are considered widespread and common in Ontario and are secure globally. There are several areas that are not identified by an ELC classification such as areas of manicured grass (M) which include lawns, gardens and planted trees.

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**Exhibit 2-2a: Terrestrial Features within the Study Area**

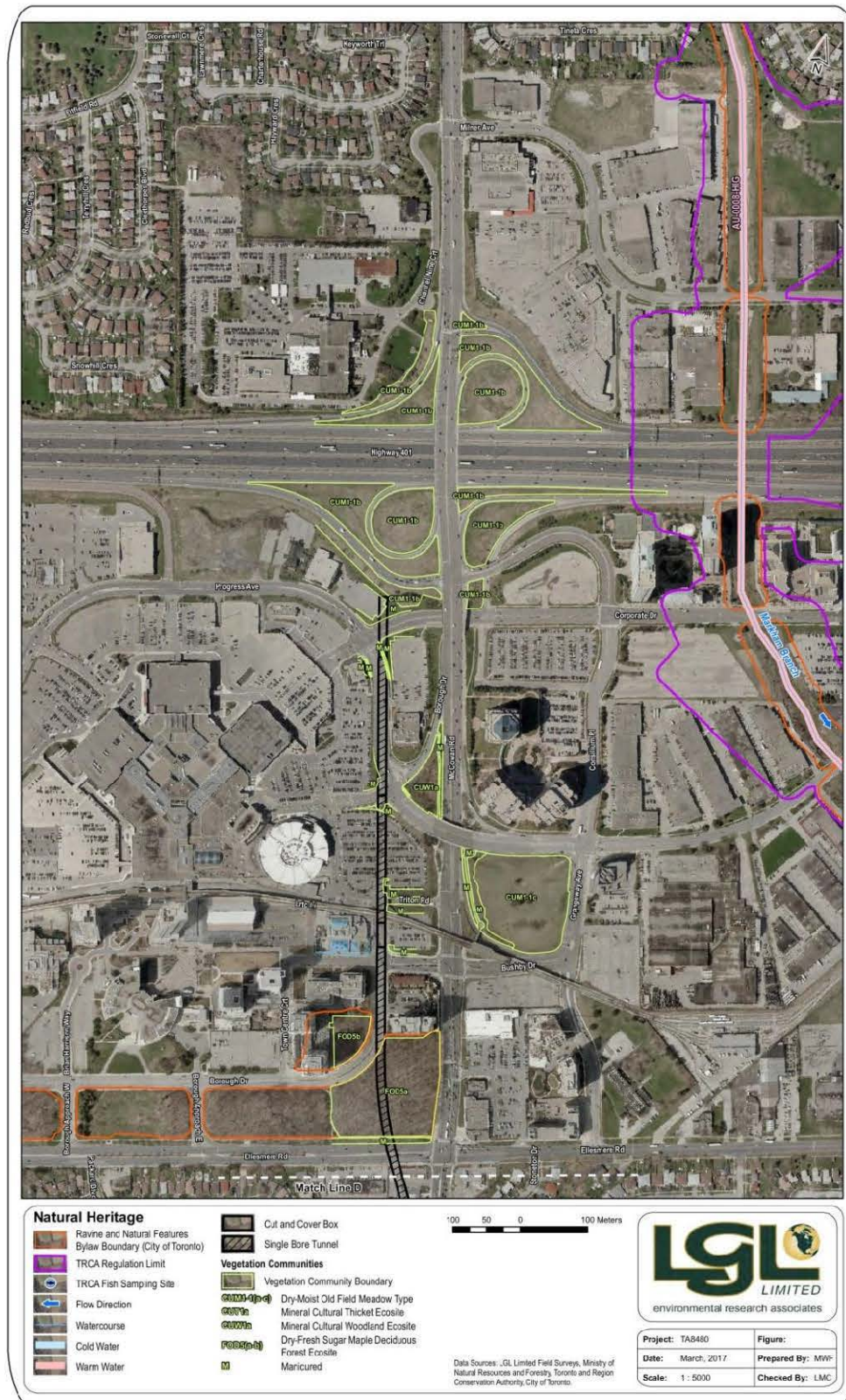


**Exhibit 2-2b: Terrestrial Features within the Study Area**



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**Exhibit 2-2c: Terrestrial Features within the Study Area**



## 2.1.5.2 Wildlife and Wildlife Habitat

The Study Area has few natural heritage features that provide habitat for wildlife. Field surveys were limited to pockets of wildlife habitat. These features occur in small patches scattered along the length of the SSE, separated by stretches of urban, suburban, and industrial / commercial development. The quality of habitat for wildlife within the Study Area is generally low. Nevertheless, the streams and hydro corridor likely serve as travel routes for wildlife. Wildlife habitat generally consists of riparian habitats, fields (including a hydro corridor), parks with manicured lawns and landscaped gardens, a small cattail marsh, and a small mature deciduous woodlot.

The SSE crosses several tributaries of Highland Creek including a tributary of the Dorset Park Branch, the Dorset Park Branch and the Bendale Branch. Typical species encountered in these areas were Downy Woodpecker, Warbling Vireo, American Robin, Gray Catbird, Cedar Waxwing, Yellow Warbler, Northern Cardinal, Red-winged Blackbird, American Goldfinch, and Gray Squirrel. A brood of Mallards was seen along the Dorset Park Branch. No nest structures, other than those of Rock Pigeon, were detected in the culverts along the stream crossings (for example, no nests of swallows or Eastern Phoebe [*Sayornis phoebe*]). It is possible that some widespread species of amphibians and reptiles occur in the riparian patches, such as Common Gartersnake (*Thamnophis sirtalis*), Dekay's Brownsnake (*Storeria dekayi*), and American Toad (*Anaxyrus americanus*). Eastern Cottontail (*Sylvilagus floridanus*), Coyote (*Canis latrans*), Red Fox (*Vulpes vulpes*), American Mink (*Neovison vison*), Striped Skunk (*Mephitis mephitis*), Northern Raccoon (*Procyon lotor*), and White-tailed Deer (*Odocoileus virginianus*) may use the valleylands for foraging and as travel corridors.

Fields were in varying stages of succession, including those predominantly composed of grasses and herbs, and others had scattered coverage of woody shrubs and trees. Fewer wildlife species were recorded in these areas than along the riparian crossings. Eastern Kingbird, American Robin, European Starling, Yellow Warbler, Song Sparrow, and Red-winged Blackbirds were regularly seen in these habitats. The two sightings of Barn Swallows occurred in field habitats as well (see details below).

The mature deciduous woodlot at the northwest corner of McCowan Road and Ellesmere Road (Frank Faubert Woods) is likely too small in size to support woodland species on a sustaining basis. However, it might provide suitable foraging habitat on occasion for woodland species such as Pileated Woodpecker (*Dryocopus pileatus*), Eastern Wood-Pewee (*Contopus virens*), or Ovenbird (*Seiurus aurocapilla*). A Wood Thrush was recorded singing here during the field survey on June 4, 2015 (but not during the second site visit on June 18, 2015), along with a Hairy Woodpecker, whose behaviour suggested nesting in the woodlot.

## 2.1.5.3 Species at Risk

Two plant species that are regulated under the Ontario *Endangered Species Act* and the Canada *Species at Risk Act* were encountered during LGL Limited's botanical investigation beyond areas affected by the SSE. Butternut (*Juglans cinerea*) and Kentucky coffee tree (*Gymnocladus dioica*) are regulated as Endangered and Threatened under the Ontario *Endangered Species Act*, respectively. A total of five butternut trees and one Kentucky coffee tree were identified along the Bendale Branch of Highland Creek upstream of the SSE. The Kentucky coffee tree is located at least 100 metres from the preferred alignment and it has been planted for amenity purposes. The butternuts are located at least 100 metres from the preferred alignment and appear to be naturally occurring. A review of the MNR Natural Heritage Information centre (NHIC) (2015) for plant species at risk within the Study Area was conducted. No historic records of plant species at risk were identified.

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A search of the NHIC database for observations within the Study Area and its vicinity resulted in records for three species at risk: Spiny Softshell (*Apalone spinifera*), Eastern Musk Turtle (*Sternotherus odouratus*), and Queensnake (*Regina septemvittata*). The records have been assigned to almost all 1 kilometre squares in the Study Area, suggesting that the original location description was general and not site-specific. Also, the records are not recent and considered historic in nature; the Queensnake record dates from 1958, and the two turtle records from 1982. Based on these data limitations, and the current apparent lack of suitable habitat for these species along the SSE, it is our opinion that these species no longer exist in this area. The Spiny Softshell, Eastern Musk Turtle and Queensnake are listed / regulated as Threatened, Special Concern and Endangered, respectively.

The MNR has records of three wildlife species at risk: Eastern Meadowlark (*Sturnella magna*), Bank Swallow (*Riparia riparia*), and Blanding's Turtle (*Emydoidea blandingii*). None of these species were recorded during the field surveys. The habitats within and adjacent to the SSE do not appear suitable for nesting Bank Swallow (no bluffs) or Blanding's Turtle. It is possible, however, that there may be suitable nesting habitat for Eastern Meadowlark. The most likely location is in an area of meadow restoration within the Hydro One corridor, on the east side of McCowan Road north of Lawrence Avenue East.

Two species at risk, Barn Swallow and Wood Thrush were confirmed to be present along the SSE during field investigations. The Barn Swallow is ranked Threatened by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and it is regulated as Threatened under the *Endangered Species Act*. Barn Swallow is not listed under the *Species at Risk Act*. Wood Thrush is ranked Threatened by COSEWIC but not listed under the *Species at Risk Act*; it is a species of Special Concern in Ontario (not regulated under the *Endangered Species Act*). Twenty-seven of the 35 bird species recorded are protected under the *Migratory Birds Convention Act* (MBCA). Both recorded mammal species are protected under the *Fish and Wildlife Conservation Act*.

### 2.1.5.4 Designated Natural Areas

Areas of Natural and Scientific Interest (ANSIs): There are no ANSIs identified by MNR located along the SSE or within the broader Study Area.

Provincially Significant Wetlands (PSWs): There are no PSWs identified by MNR located along the SSE or within the broader Study Area.

Environmentally Sensitive Areas (ESAs): Two ESAs identified by the City of Toronto are located within the broader study area - ESA #36 Hague Park and ESA #39 Highland Forest/Morningside Park and Highland Creek - West. Hauge Creek is located on the Dorset Park Branch of Highland Creek downstream of McCowan Road and beyond the area affected by the SSE.

[City of Toronto Official Plan](#) (OP): A review of the City of Toronto OP (2010) indicates that most of the valleylands associated with Highland Creek and its tributaries form a component of the Natural Heritage System of the City of Toronto.

City of Toronto Ravine and Natural Feature Protection By-law: The valleylands associated with Highland Creek and its tributaries are identified as protected areas under the City of Toronto's Ravine and Natural

Feature Protection By-law. A tree removal permit will be required from City of Toronto Urban Forestry for any tree removals undertaken within the Ravine and Natural Feature Protection By-law protected area.

Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses (Ontario Regulation 166/06): The valleylands associated with Highland Creek and its tributaries are regulated areas under Ontario Regulation 166/06. A permit will be required from the TRCA for development or site alteration within the regulated areas.

Designated natural areas within the Study Area are shown in **Exhibit 2-3**.

### 2.1.5.5 Future Conditions

No major changes to the terrestrial ecosystems are expected.

For additional details regarding the natural environment refer to **Appendix B-1** Natural Heritage Report.

## 2.2 Emissions

### 2.2.1 Air Quality

#### 2.2.1.1 Ambient Air Quality Conditions

Background (ambient) conditions are measured contaminant concentrations that are exclusive of emissions from the existing or proposed Project infrastructure. In this assessment, background conditions were characterized utilizing existing ambient monitoring data from MOECC and National Air Pollution Surveillance (NAPS) Network stations.

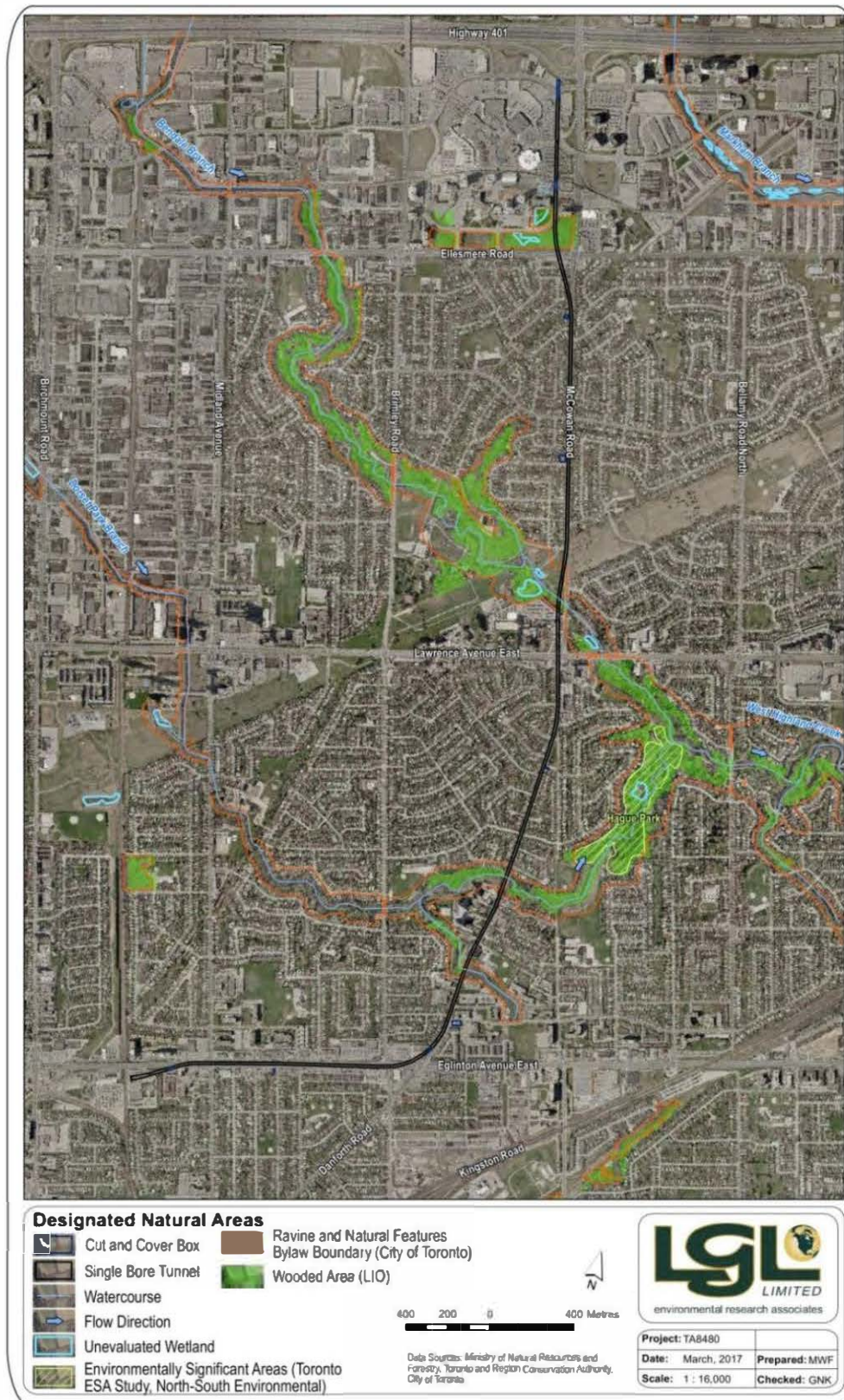
A review of MOECC and NAPS ambient monitoring stations in Ontario was undertaken to identify the monitoring stations that are in relative proximity to the Study Area which would be representative of background contaminant concentrations in the Study Area. Four MOECC (Toronto Downtown, Toronto East, Toronto North and Toronto West) and five NAPS (Toronto Downtown, Etobicoke North, Etobicoke South, Newmarket and Windsor) stations were determined to be representative. Note that Windsor is the only station in Ontario at which background acrolein, acetaldehyde, and formaldehyde concentrations are measured for recent years.

Since there are several monitoring stations which could be used to represent the Study Area, a comparison was performed for the available data on a contaminant basis, to determine the worst-case representative background concentration. Selecting the worst-case ambient data will result in a conservative assessment.

The 2010 - 2014 hourly ambient monitoring data from the selected stations were statistically summarized for the desired averaging periods, 1-hour, 8-hour, 24-hour, and annual. Note that volatile organic compounds (VOC) monitoring data for 2014 are not yet publically available. 2009-2013 data were used for VOCs. The station with the highest maximum value over the 5-year period for each contaminant and averaging period was selected to represent background concentrations in the Study Area. The maximum concentration represents an absolute worst-case background scenario.

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**Exhibit 2-3: Designated Natural Areas within the Study Area**



Based on a review of ambient monitoring data from 2010-2014, all contaminants were below their respective guidelines with the exception of PM<sub>10</sub> and benzene.

Maximum concentrations from the worst-case station for each pollutant were combined with worst-case impacts predicted in the dispersion modelling to determine combined impacts. This methodology results in conservative worst-case concentrations as the maximum concentration from the roadway and Bus Terminal likely does not occur at the same time as the maximum background concentration.

### 2.2.1.2 Existing Conditions

The worst-case combined concentration is below the guideline for all contaminants except for benzene and the particulates (particulate matter (PM)<sub>2.5</sub>, PM<sub>10</sub> and total suspended particles (TSP)). For these contaminants, background concentrations contribute 80 % or more to the worst-case concentration, with the exception of TSP. For TSP, the background concentration to the maximum is 65 %. Overall, the contribution from the existing roadways to the worst-case combined concentration is less than the background contribution for all contaminants.

### 2.2.1.3 Future Conditions

The worst-case combined concentration is below the guideline for all contaminants except for annual benzene and the particulates. Similarly to the existing conditions, the contribution of background concentration to the worst-case concentration is greater than 75 % for all pollutants except for TSP. For TSP, background concentrations contribute 57 % to the maximum. The majority of TSP emissions from the roadway are due to silt loading. Overall, for the majority of pollutants the background concentrations are the major contributor to worst-case concentrations.

For additional details regarding air quality refer to **Appendix B-3 Local Air Quality Assessment**.

### 2.2.2 Noise and Vibration

The potential for air-borne noise and ground-borne vibration levels is a factor to consider for noise / vibration sensitive land uses located in close proximity to the preferred alignment. The range of noise / vibration sensitive land uses include residential dwellings / buildings, institutional facilities including heritage buildings, hospitals, group homes, places of worship and commercial / industrial establishments encompassing noise / vibration sensitive operations, equipment or functions.

The MOEE/TTC Protocol for Noise and Vibration Assessment for the Proposed Yonge-Spadina Subway Loop (June 16, 1993) (referred to as the MOE-TTC N/V Protocols) as well as other general Environmental Assessment (EA) practices for determination and assessment of noise / vibration levels rely on a series of absolute and relative noise / vibration levels criteria. This is accomplished with the use of scientific metrics for measuring, reporting and assessing such levels using quantitative and qualitative metrics. The relative criteria recognize the importance of the “existing” background / ambient noise / vibration conditions for impact assessment purposes as the base-line conditions, while the absolute levels ensure that unacceptable limits are not exceeded under all conditions.



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The foregoing assessments are performed at the so called “points of reception”, or simply the “receptor” locations. As far as the points of reception are concerned, the existing land uses in the Study Area show that approximately 75 % of the Study Area consists of well-established residential neighbourhoods, while the remaining 25 % of the Study Area consists of commercial / industrial properties. The Study Area also contains Scarborough and Rouge General Hospital, Scarborough Town Centre, a number of schools and places of worship, heritage buildings, and numerous apartment buildings.

The dominant sources of exterior ambient sound / vibration in the Study Area include numerous major arterial and collector roads. Of equal, and sometimes more significant sources of ambient sound / vibration levels are internally generated sound / vibration levels in some commercial and industrial buildings and high-rise offices. Of less significance (more local in nature) is the exterior noise due to the commercial / industrial buildings themselves and how they affect their neighbouring properties. The dominant sources of sound / vibration in the Study Area are the heavy vehicle movements on local driveways, collector and arterial roads. Of less significance is rail traffic at larger distance setbacks.

### 2.2.2.1 Existing Conditions

Existing ambient conditions or background sound / vibration levels due to roads are defined by the volume of traffic, traffic mix (cars, buses and trucks), traffic speed, and proximity to the points of reception of concern. For example, McCowan Road provides the highest ambient sound levels for any nearby receptors. The major arterial roads, which also provide relatively high ambient sound / vibration levels, include Eglinton Avenue East, Danforth Road, Lawrence Avenue East and Ellesmere Road. The major collector roads include Brimley Road and Brimorton Drive, which provide lower ambient sound levels.

Road traffic along any of the major arterial or collector roads listed above could be contributors of moderate to high background sound / vibration levels at nearby receptors and very few potential receptors are currently affected by sources of sound / vibration due to rail traffic. The ambient sound / vibration sources are also expected to include the nearby GO Line and Line 3 (Scarborough Rapid Transit (SRT))

As for the internally generated sound / vibration levels within some of the receptors locations, such levels are site specific and require physical inspections and indoor ambient / background sound / vibration level measurements to determine their baseline levels. Internal process and Heating, Ventilation and Air Conditioning (HVAC) equipment and even occupant footsteps on certain floors are capable of creating relatively high ambient sound / vibration levels.

### 2.2.2.2 Future Conditions

The future ambient sound / vibration levels due to transportation corridors are extrapolated from existing ambient levels up to the time when the new SSE is constructed and operations begin. Both ambient sound and vibration levels may be expected to increase over the years due to natural traffic growth. For the future ambient sound / vibration levels due to other existing land uses, assumptions will be made on continuity of such sources in the future as well.

For additional details regarding noise and vibration refer to **Appendix B-4 Noise and Vibration Impact Study**.

## 2.3 Socio-Economic Environment

### 2.3.1 Utilities

Within the Study Area, utilities such as Bell Canada, Rogers Communications Partnership, Cogeco Data Services, Zayo Group (formerly Allstream Inc.), Telus Communications Company telecommunication lines; Enbridge gas lines; sanitary sewers; storm sewers; combined sewers; watermains; Toronto Hydro; and Hydro One Networks Incorporated (HONI) lines are present. The utilities are typically confined to existing road right-of-ways (ROWs). Areas of interest include the existing Gatineau Hydro Corridor and all areas that are constructed using the cut-and-cover construction method, includes the station, ancillary facilities (i.e. Emergency Exit Buildings (EEBs)) and tail track structures. An inventory of these areas is provided in **Appendix B-5**.

### 2.3.2 Existing Land Use

For the purpose of the background review of existing land use, the Study Area has been divided into four Sub-Study Areas: Southwest, Southeast, Centre and North (**Exhibit 2-4**). Refer to **Exhibit 2-6** for the designated land use within the Study Area.

#### 2.3.2.1 Centre

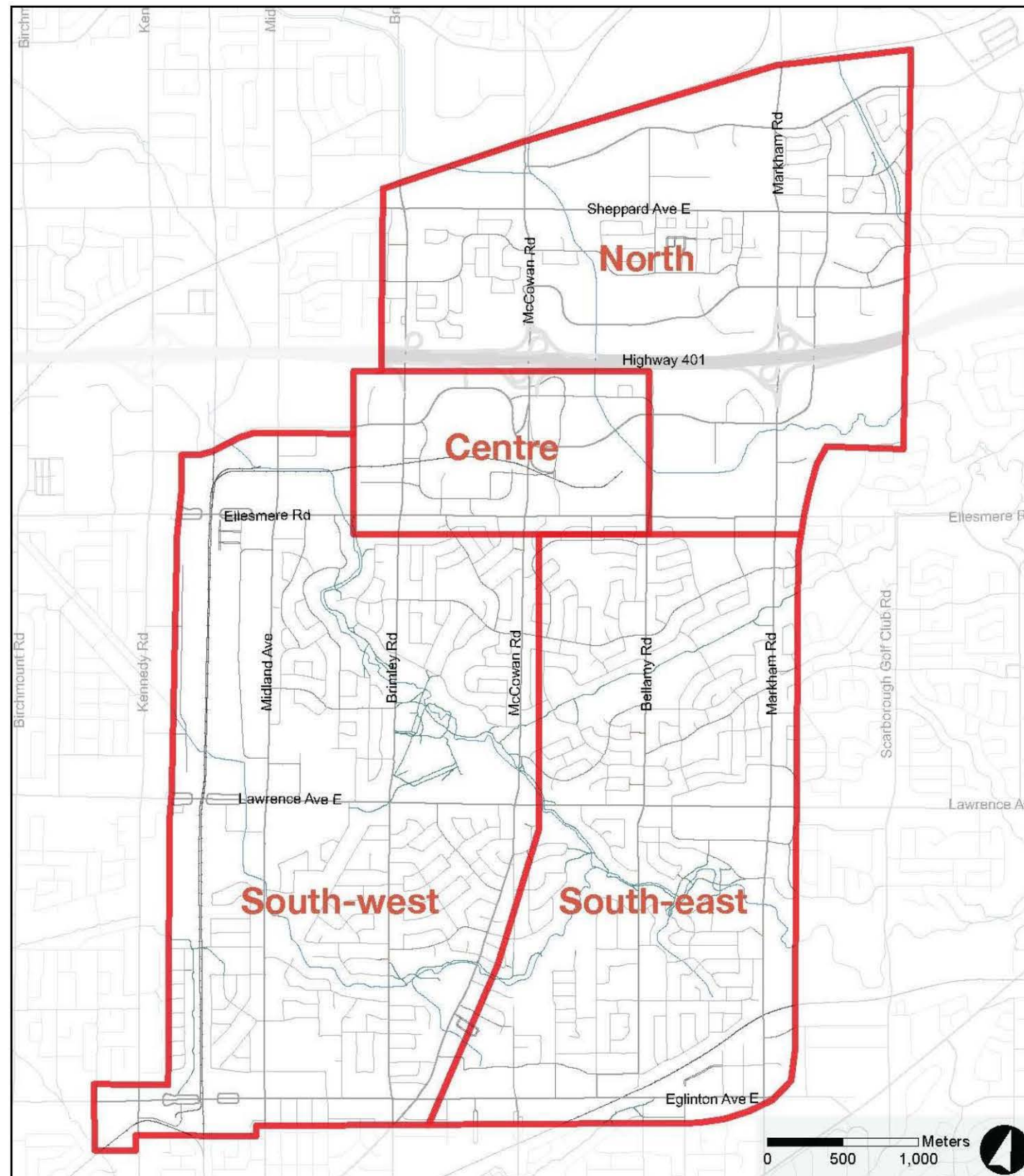
Scarborough Centre forms the central part of the SSE Study Area, and is bound by Highway 401 in the north, Bellamy Road in the east, Ellesmere Road in the south and Schick Court in the west. The Scarborough Centre area has been envisioned to become a vibrant urban area by Toronto's OP since 1968. Scarborough Centre is the focal point for both employment and residential growth in eastern Toronto.

This part of the SSE Study Area is divided into four precincts: Commercial, Civic, Brimley, and McCowan (see **Exhibit 2-5**). The Commercial Precinct is centred on the Scarborough Town Centre (a regional mall surrounded by large format retail uses, restaurants and surface parking). The Civic Precinct lies to the south of the Commercial Precinct and is comprised of the Scarborough Civic Centre, other government buildings, community services, higher density condominiums and a large woodlot to the south along Ellesmere Road. The Brimley Precinct is characterized by low rise offices, wholesale outlets and warehouses. A number of low rise industrial sites are also located on the western border of Scarborough Centre. The McCowan Precinct includes office towers, low-density employment uses and some residential towers on the south side of Highway 401. There are a number of large vacant sites remaining throughout the Centre.

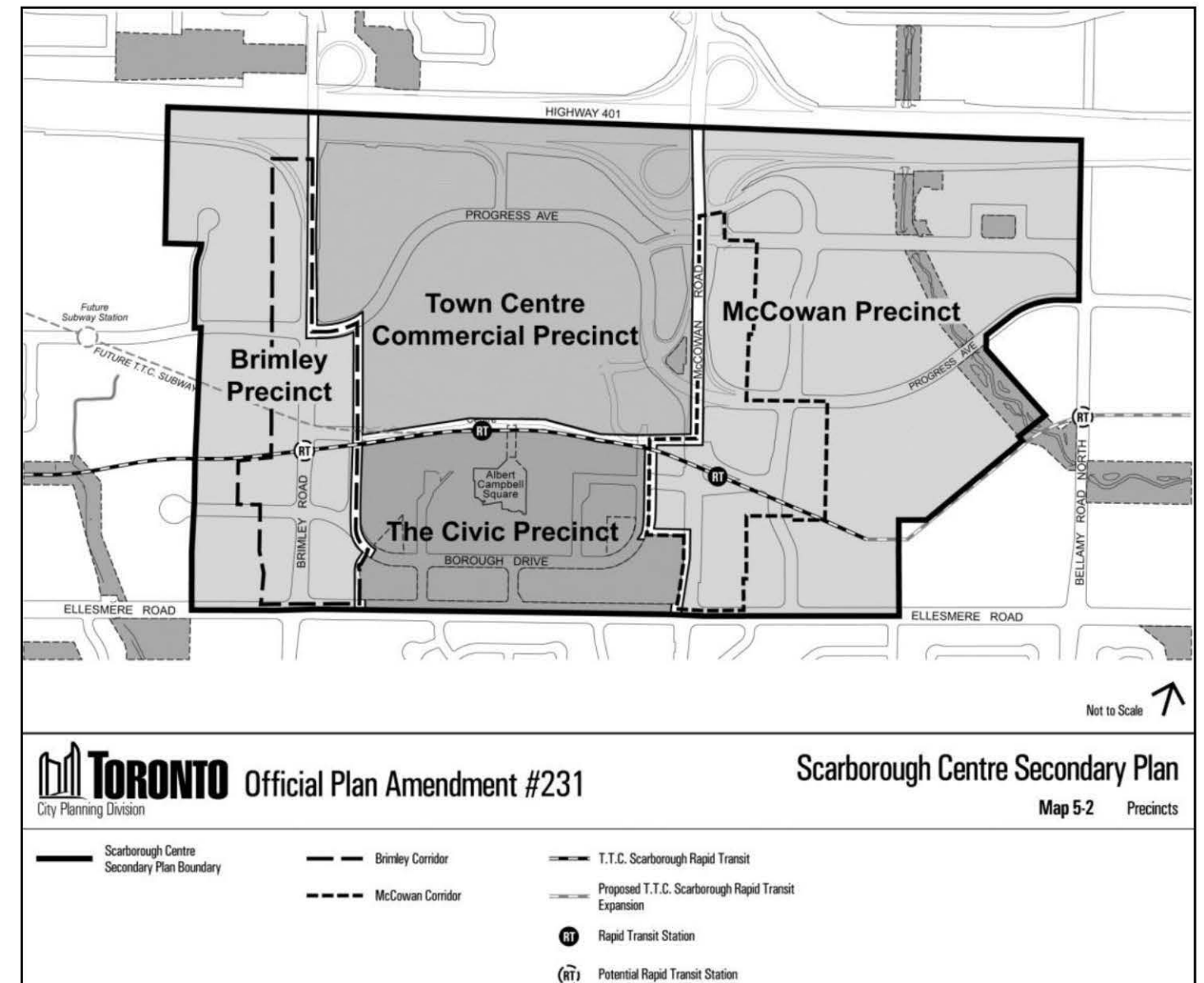
Scarborough Centre is bisected by the elevated Line 3 corridor above Ellesmere Road, and includes two transit stations, one at Scarborough Town Centre and another at McCowan Road and Bushby Drive.

# Existing and Future Conditions

**Exhibit 2-4: Sub-Study Areas**

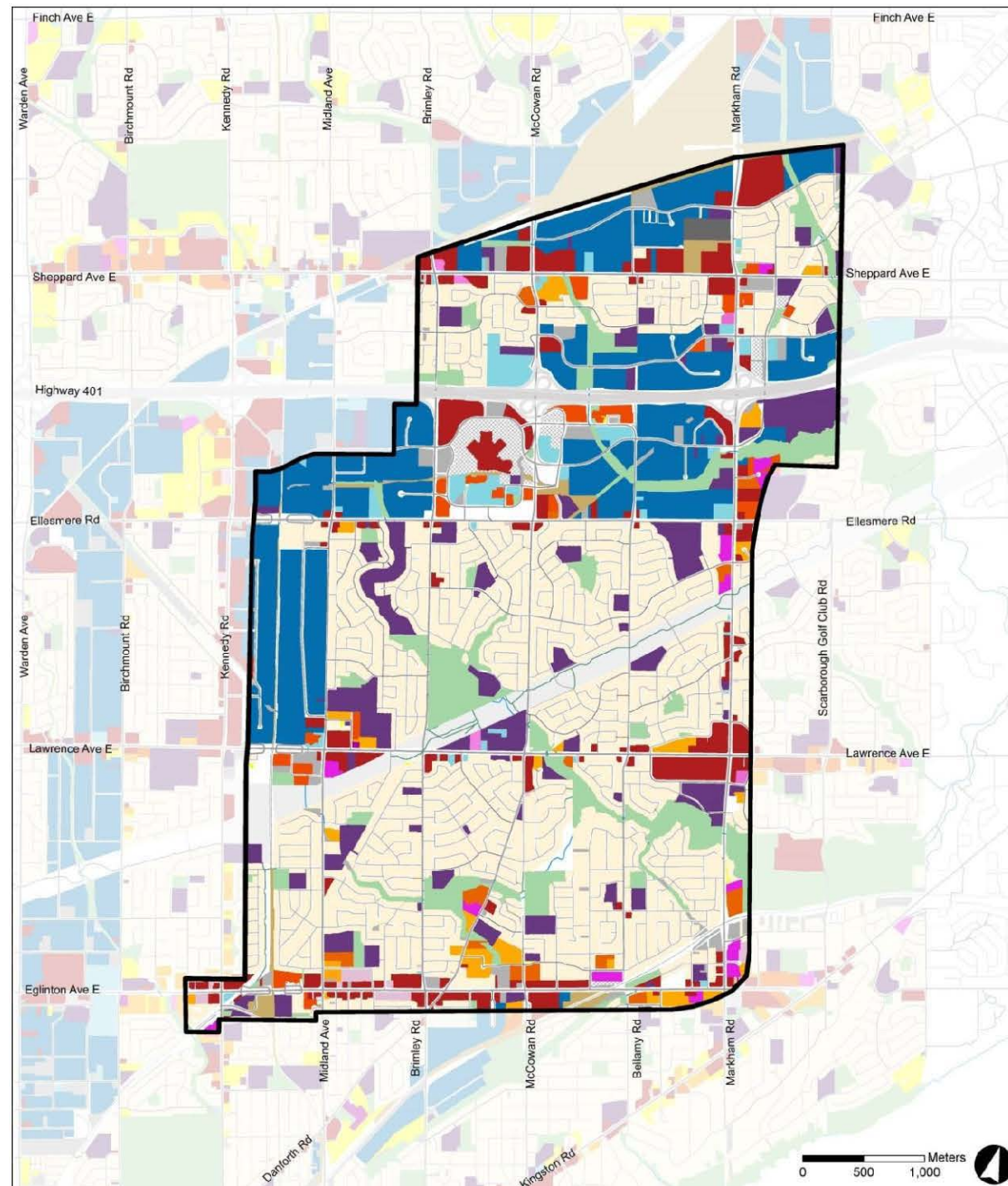


**Exhibit 2-5: Scarborough Centre Precincts**



## Existing and Future Conditions

**Exhibit 2-6: Existing Land Use**



### 2.3.2.2 North

The North part of the SSE Study Area is approximately bounded by Highway 401 / Ellesmere Road / East Highland Creek in the south, Brimley Road in the west, the CN rail corridor in the north, and halfway between Markham Road and Neilson Road, in the vicinity of the Malvern Branch of Highland Creek in the east. This part of the Study Area includes employment-oriented areas along Highway 401 and the rail corridor, low rise mixed commercial uses along Sheppard Avenue, and primarily low rise neighbourhoods.

Much of Scarborough Centre is considered a primary zone of interest, defined under the Mobility Hub Guidelines as the zone approximately 250 metres in radius, where the highest intensity and greatest mix of uses should typically be encouraged since options for the subway station are located central to the area, either along Triton Road, or west of McCowan Road and south of Progress Avenue. Key features associated with these corridors, contributing to this area being a primary zone of interest are described as follows:

- Triton Road is bordered by high rise residential and office towers and community uses to the south, and low rise commercial uses (the mall and theatre) to the north. There are several surface parking lots along Triton Road. The elevated Line 3 runs overhead, with an existing station located in the core of the Centre, mid-way between Brimley Road and McCowan Road. This area has served as the core of Scarborough Centre, where the greatest mix and intensity of uses have been directed and public realm improvements prioritized. Recent investments include a new public library, Scarborough Civic Centre Green, and Albert Campbell Park (under construction) just south of Triton Road at the Scarborough Civic Centre.
- The eastern portion of Progress Avenue is characterized by large, newer format retail uses and chain restaurants, expanses of surface parking, and a large vacant site. The area borders on the Highway 401 and McCowan Road interchange.
- The McCowan Road corridor includes a diversity of conditions. The north end includes an interchange with Highway 401. On the west side, the corridor includes a large format restaurant, parking lots, one high rise condominium, and a significant amount of woodlot frontage. On the east side, better known as the McCowan Precinct, there is an office tower cluster, a large vacant lot, a large format retail centre, and the existing McCowan Line 3 Station at Bushby Drive. Much of the McCowan Road frontage has a sloped landscape strip, which along with numerous on-and-off ramps, restricts pedestrian connections across the corridor or the introduction of street-oriented buildings. In general, adjacent development back onto McCowan Road.

### 2.3.2.3 Southwest & Southeast

The South part of the SSE Study Area is bound by Progress Avenue / Ellesmere Road in the north, between the existing Line 3 corridor and Kennedy Road in the west, Eglinton Avenue in the south, and Markham Road in the east. The area is divided into South-west and Southeast Sub-Study Areas along Danforth Road / McCowan Road.

## Existing and Future Conditions

Most of this area is characterized by established low rise residential neighbourhoods, with older employment areas located along Ellesmere Road and the west side of Midland Avenue. High rise projects are currently underway in this area. The area also includes arterial commercial conditions along Lawrence Avenue and Eglinton Avenue, and is transected by greenspaces associated with the tributaries of Highland Creek and the Gattineau Hydro Corridor.

### 2.3.2.4 Eglinton Avenue

Eglinton Avenue is a major street that connects the City of Toronto from east to west. Conditions within the Study Area vary, but generally transition back and forth between various vintages of low rise commercial and high rise residential uses, with some low rise residential uses as well. Much of the housing along the corridor fronts onto Eglinton Avenue, making it a more walkable street, notwithstanding the suburban arterial condition. The existing Kennedy Station area, in the southwest corner of the Study Area, is centred on the Line 3 corridor and the GO Stouffville line, east of Kennedy Road. The area is characterized by existing major transit infrastructure, including the two transit lines, associated parking and an overpass over the corridor. Other uses include low rise commercial plazas, the hydro corridor, a four-storey office building, community centre, and low and high rise residential uses. East and west of Kennedy Road, Eglinton Avenue transitions to primarily low rise commercial and high rise residential uses.

### 2.3.3 Community Services and Facilities

Community services and facilities are a critical part of livable communities. This social infrastructure includes places like parks, libraries, community centres, recreation facilities and schools, out of which important services are provided related to literacy, education, arts, culture and sports programming. Access to these services enhances people's quality of life, health and overall well-being. These spaces are also important trip generators that can contribute to a balanced and transit supportive community.

As communities change over time, it is necessary to evaluate the existing inventory of community facilities and services to identify gaps where additional amenities may be needed to meet future demand, which is driven by new development and changing demographic trends.

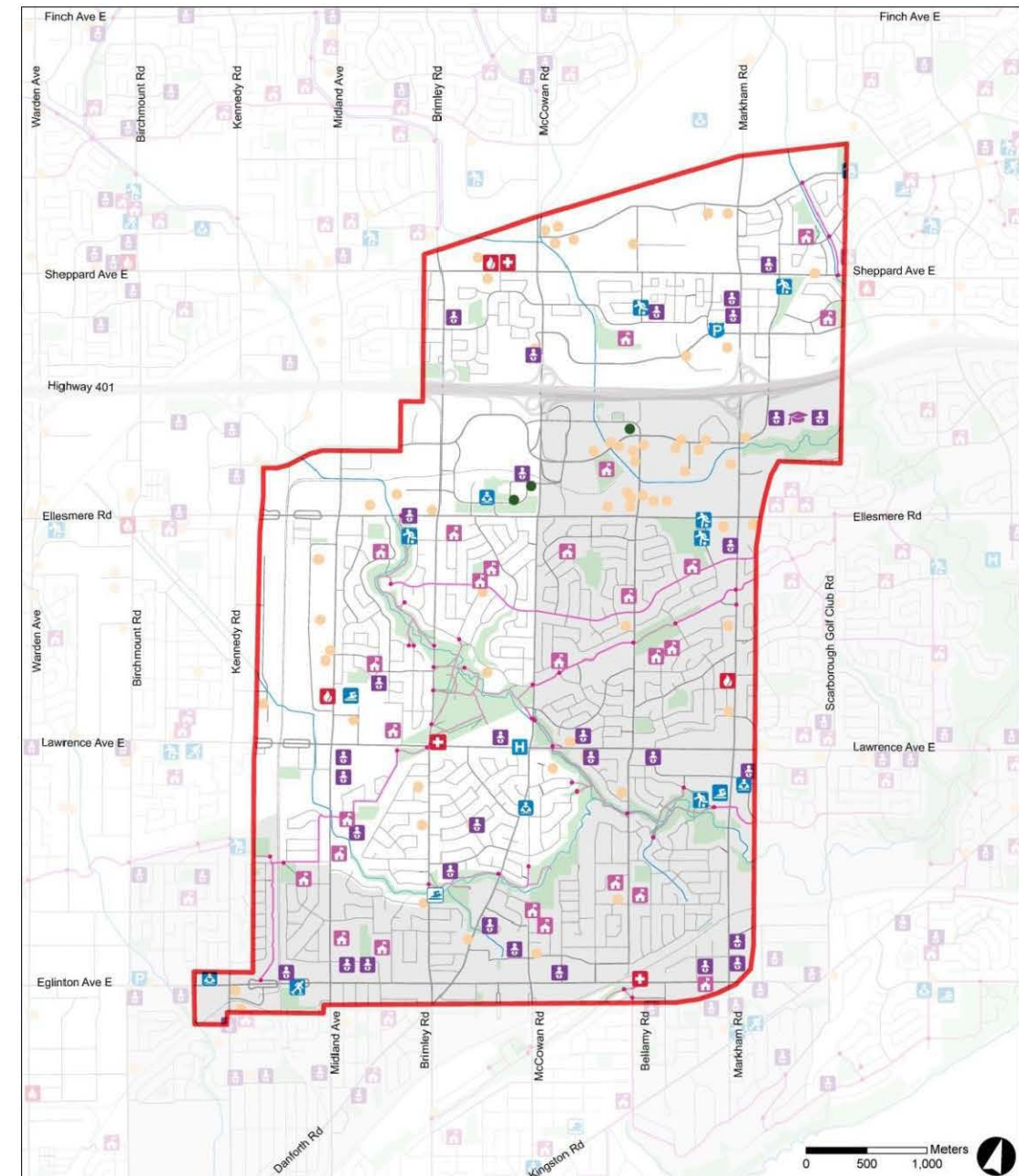
The following is an inventory of existing community facilities in the SSE Study Area, and it serves as the foundation for future community services and facilities (CS&F) reviews that may be completed in core growth areas. A CS&F review has already been completed for Scarborough Centre, and it identified the need for a new large, flexible, multi-purpose space for community and recreational services and programs, to be located at 705 Progress Avenue in the McCowan Precinct.

The Study Area includes the following existing and planned community facilities:

- 2 ambulance stations;
- 3 fire stations;
- 1 police station;
- 1 hospital;
- 6 community centres;
- 1 arena;
- 4 pools (3 indoor, 1 outdoor);
- 41 parks;
- 34 childcare facilities;
- 30 elementary schools (1 of which is planned to be located in the McCowan Precinct of Scarborough Centre but is currently unfunded and unlikely to be built in the near future);
- 7 secondary schools;
- 5 libraries; and,
- 67 places of worship.

Within the Study Area the following existing and planned community facilities are identified (also refer to Exhibit 2-7):

**Exhibit 2-7: Community Services and Facilities**



## Existing and Future Conditions

The greatest number of community facilities is found in the South part of the Study Area, with a fair distribution in the North as well. There are few existing facilities in Scarborough Centre. Notably, there is a large cluster of places of worship within employment areas located along the Highway 401 corridor, in the Centre portion of the Study Area.

### 2.3.4 Future Planned Land Use and Development Plans

As of April 2017, there are a total of 41 development applications within the Study Area (either under review or active projects). In total, these applications included 14,223 residential units and 121,269 square metres of non-residential gross floor area.

The applications were primarily for low density development, including townhouses, gas bars, industrial condominiums, retail uses, and places of worship. Three higher density residential developments were also proposed, ranging from 10 to 34-storeys in height, as well as an eight-storey mixed use, post-secondary education development. Development activity is primarily focused in employment areas and along major arterial corridors, with a higher concentration of development activity in the Centre and North parts of the Study Area than in the South.

#### 2.3.4.1 Scarborough Centre Future Development Conditions

Today, Scarborough Centre has approximately 6,700 residential units and over 300,000 square metres of non-residential gross floor area, of which, approximately 1,200 residential units and 40,000 square metres of non-residential gross floor area were constructed between January 2012 and April 2017. There are currently 7,680 residential units in approved applications, with an additional 6,543 residential units proposed. Further, there is also approximately another 91,385 square metres of approved non-residential gross floor area, and 29,885 square metres proposed in the Centre.

In terms of future development potential, with the station located in the centroid of the Centre, there are ample development opportunities to grow and develop the Centre:

- McCowan Precinct – where future growth is planned and development pressure is greatest
- Through joint ventures with Oxford Properties (major land owner in the vicinity of the station) to develop around the station. Oxford Properties is currently undertaking a Master Planning exercise; and
- Opportunities to develop other underutilized lands within the Centre.

It is quite possible Scarborough Centre could add approximately 23,000 more residential units, and 260,000 square metres of non-residential gross floor area. This is a conservative estimate, and does not include the redevelopment of Scarborough Town Centre.

**Exhibit 2-8** illustrates how Scarborough Centre could develop around the Scarborough Centre Station and Bus Terminal. This illustration represents a long-term vision and has not taken specific plans of current land owners into account. This illustration also assumes that a street network consistent with approved planning policy is implemented. The street grid that will best support the development of Scarborough Centre will be further articulated through the ongoing Scarborough Centre Transportation Master Plan.

### Exhibit 2-8: Scarborough Centre Future Development Potential



For additional details regarding land use refer to **Appendix B-6** Final Background Report Planning & Urban Design.

#### 2.3.4.2 Scarborough Centre Planning Objectives

The key objective of the SSE is to transform Scarborough Centre into a vibrant urban node. The Scarborough Station is seen as a catalyst for realizing existing planning policy objectives. It will be a once-in-a-generation investment in civic infrastructure and public spaces that will knit the Centre's precincts together, and provide a focal point for the Centre's urbanization.

The station will:

- Enhance connectivity;
- Exhibit high quality design and materiality for public spaces inside and outside the station; and
- Act as a development catalyst.

The station will be the focal point of urbanization because it will be a very important destination and gathering point. It also has the potential to encourage significant Transit Oriented Development (TOD) on adjacent parcels. As such, one of the most significant elements of station design will be how the station interfaces with

## Existing and Future Conditions

surrounding streets and buildings, both existing and future. The design of public space adjacent to the station, connecting into the station itself, is critical to the achievement of planning policy and objectives for the Centre.

The primary focus for public realm is the area from Borough Drive, including the main station entrance area, to McCowan Road, potentially including the area over the bus terminal. Opportunities for placemaking in this vicinity will be paramount as the station design proceeds. Secondary focus areas are the western station entrance by the mall bridge, and in the future, the area in the vicinity of the northern station entrance on Borough Drive.

### 2.3.5 Lands with Transit Oriented Development Potential

The success of higher order transit is largely dependent on ensuring that the right density and mix of uses is achieved near transit stations in order to generate sufficient transit ridership to support the enhanced investment in transit infrastructure. Density, land use mix and distance from the station are key principles of TOD and transit supportive land use planning. Research has found that:

- There is a direct relationship between transit ridership and distance from the station. Maximum ridership capture potential is achieved from developments within a relatively short walking distance from the transit station, typically measured in terms of a 5-minute walk – and ridership capture dramatically drops off as the walking distance to the station increases.
- Density drives transit ridership. The higher the density (in population and / or employees, and preferably both), the higher the transit ridership potential.
- Land use has an impact on transit use patterns. To promote a balanced ridership pattern that generates ridership in both peak and off-peak times, it is ideal to have diverse land use types in proximity to the station area.

To support the evaluation of corridor and station options, a set of criteria was developed by the Study Team and City staff for identifying lands with TOD potential. As per the City of Toronto's direction, the criteria were based on OP land use designations. Lands under the following designations were identified as Soft Sites – lands having redevelopment potential:

- Mixed Use Areas (potential for mixed use infill on underutilized lands);
- Apartment Neighbourhoods (potential for mixed use infill on underutilized lands, including new services for existing residents; existing apartment buildings to be retained); and,
- Employment Areas & Institutional Areas (potential for employment growth).

Redevelopment potential was assessed in detail during the evaluation of station options, with an emphasis on underutilized lands, defined as:

- Vacant lands;
- Parking lots; and,
- Lands with buildings less than three storeys in height.

Lands with redevelopment potential commonly included low density, car-oriented commercial sites, located along arterials and at major intersections where, during the evaluation phase, potential future subway stations could be located, as well as low density employment areas. Lands with redevelopment potential were

predominantly identified in the McCowan Precinct of Scarborough Centre. However, lands surrounding Scarborough Town Centre were also seen as having development potential, including vacant parcels and lands with underutilized, low-rise built form.

As part of the evaluation, consideration was given to the cumulative future density that could be achieved, taking into account existing high density development / major trip generators and redevelopment potential.

It should be noted that any areas designated Neighbourhoods were identified as stable and to be protected from redevelopment. The majority of the Study Area, particularly south of Ellesmere Road is designated Neighbourhoods, and therefore has few lands with redevelopment potential.

### 2.3.6 Contamination

Preliminary environmental screening was carried out in the Study Area. The purpose of this work was to review information and data on incidents that have the potential to pose an environmental risk and possibly contribute to environmental impacts related to soil and groundwater within the Study Area.

It is noted that the environmental screening carried out does not consider the distance from the proposed alignment. It only considers the risk based on the type of incident reported. A more detailed assessment and summary of the potential environmental risks should be carried out once the preferred alignment has been selected.

The screening was carried out using the following EcoLog Environmental Risk Information Service (ERIS) Report (EcoLog ERIS Ltd., 2014).

The report contains a summary of environmental information compiled from both government and private sector sources and databases for incidents in the Study Area. Properties located within a 250 metre buffer zone around the Study Area were included in the screening assessment.

The EcoLog Report was reviewed and each environmental entry was assessed and assigned a Low, Medium or High risk level. The following is a brief summary of those entries / sites in the Study Area and buffer zone that are considered to have a high environmental risk.

**Table 2-1: EcoLog ERIS Sites with High Environmental Risk**

Database Name	Number of Entries Identified
Anderson Waste Disposal Sites	8
Automobile Wrecking & Supplies	53
Fuel Storage Tanks	130
Fuel Storage Tanks – Historical	68
Private and Retail Fuel Storage Tanks	112
Retail Fuel Storage Tanks	57
National PCB Inventory	71
Inventory of PCB Storage Sites	64

## Existing and Future Conditions

Of significance in the Study Area are eight waste disposal sites identified as follows:

- Birkdale Road School Dump
- Lawrence & Burview Fill
- Brimley & Gully Dump
- McCowan & Bendale Dump
- Brimley & Graylee Dump
- Brimley & Highland Creek Dump
- Hague Park Dump
- St. Barnabass Secondary School Dump

### 2.3.6.1 Unplottables

Unplottables are defined in the EcoLog ERIS Ltd. Report (2014) as "... records that could not be mapped due to various reasons, included limited geographic information" ( p4108). The report indicates that these records may or may not be within the study area and buffer zone but are provided for reference.

The report indicates that there are a total of 534 unplottables from 16 of the databases searched. At this time the most environmentally significant unplottables are as follows.

**Table 2-2: Environmental Significant EcoLog Unplottable Sites**

Database Name	Number of Entries Identified
National PCB Storage Site	10
Ontario PCB Storage Site	3
Private / Retail Fuel Storage Tanks	2
Waste Disposal Site MOECC Inventory	1

The waste disposal site noted above is identified as being a City of Toronto site, located on the north side of Sheppard Avenue East west of McCowan Road. However, the report indicates the status as being "Revoked".

### 2.3.7 Future Conditions: Socio-Economic Environment

It is expected that the City of Toronto will continue to develop the area as designated within the City of Toronto OP (see Section 1.6 for more details).

## 2.4 Cultural Environment

### 2.4.1 Archaeological Resources

A Stage 1 Archaeological Assessment was undertaken for this Project. The Stage 1 Archaeological Assessment documents the geographic, archaeological and land use history of lands identified within the study area in order to assess their potential to contain archaeological resources. No optional property inspection was undertaken due to the snow covered ground conditions at the time of the assessment. Instead, detailed mapping, satellite imagery and recommendations made in the Master Plan of Archaeological Resources for the City of Toronto (ASI, 2004) were used in order to evaluate the study area's archaeological potential. The results of the Stage 1 Archaeological Assessment indicate that, while most of the lands within the existing McCowan study corridor appear to have been disturbed by past development, some of the Study

Area still retains archaeological potential. This is based on the presence of historic homesteads, the proximity of historic transportation routes, certain physiographic features and previously registered archaeological sites within the Study Area. Lands that contain archaeological potential and will be impacted on the surface must be subject to a Stage 2 Archaeological Assessment prior to construction.

For additional details regarding archaeological resources, refer to **Appendix B-7 Stage 1 Archaeology Assessment**.

### 2.4.2 Built Heritage Resources and Cultural Heritage Landscapes

The City of Toronto's Heritage Register was consulted in order to determine the presence of built heritage resources and cultural heritage landscapes within the SSE Study Area. The Heritage Register provides information on Toronto's heritage properties including both those that are listed (i.e., have been identified but not formally evaluated) and those that are designated as defined under the *Ontario Heritage Act*, Part IV and V.

The Study Area is characterised by a mix of suburban-residential, light-industrial and commercial development that is almost entirely related to the period after WWII. However, mixed within these areas are a number of heritage resources that have been included on the City's Heritage Register. In most cases these are isolated properties that are situated along major roadways that once formed the lot and concession system for the former township. These remnant properties consist primarily of former farm dwellings or public buildings including two churches and a public library. A notable inclusion on the list is the Scarborough Town Centre. The Scarborough Town Centre is an early and masterful work by Ray Moriyama, one of Canada's most distinguished architects and is considered a work of Modern Heritage. The City formally passed its Intention to designate the property in 2012.

Any of these properties that might be impacted by the SSE footprint should be subject to either further evaluation or a Heritage Impact Assessment as appropriate (for further details, refer to **Appendix B-7b Cultural Heritage Memorandum ("No Finds Memo")**).

The following table provides an inventory of known heritage resources within the Study Area.

**Table 2-3: Inventory of Known Heritage Resources in the Study Area**

Name / Address	Heritage Status	By-law No.	Other
Adam Walton House, 972 Danforth Rd	Listed		
Richard Taylor House, 2 Elgar Ave	Listed		
Mark Hunter House, 718 Brimley Rd	Listed		
Hunter House, 52 Tansley Ave	Listed		
Washington Manse, 14 Centre St	Pt IV	19418	Designation By-Law Passed By Scarborough City Council on March 9, 1981
Albert Chester House, 10 Chelway Rd	Listed		

## Existing and Future Conditions

**Table 2-3: Inventory of Known Heritage Resources in the Study Area**

Name / Address	Heritage Status	By-law No.	Other
J.P. Wheeler House, 328 Bellamy Rd N	Listed		
Secor Cairn, 20 X Stevenwood Rd	Pt IV	24544	Designation By-Law Passed By Scarborough City Council on June 29, 1995
McKean House, 544 Bellamy Rd N	Listed		
Thomson House (Springfield), 146 St Andrews Rd	Pt IV	17446	Designation By-Law Passed By Scarborough City Council on May 24, 1977
St. Andrew Sexton's House, 55 St Andrews Rd	Pt IV	21031	Designation By-Law Passed By Scarborough City Council on Feb. 11, 1985
Centennial Memorial Library, 117 St Andrews Rd	Pt IV	21029	Designation By-Law Passed By Scarborough City Council on Feb. 11, 1985
Thomson Bonese House, 1 St Andrews Rd	Pt IV	17447	Designation By-Law Passed By Scarborough City Council on May 24, 1977
Halliday House, 996 Brimley Rd	Listed		
Cornell House; McCowan Log House, 1007 Brimley Rd	Listed		
Richard Thomson House, 51 Oakley Blvd	Listed		
Scarborough Civic Centre, 140-150 Borough Drive	Intention		Intention to Designate passed Feb 13,14,15, 2002
Scott House, 520 Progress Ave	Pt IV	17445	Designation By-Law Passed By Scarborough City Council On May 24, 1977
Harris House, 33 Murray Ave	Listed		
Knox Church, 2569 Midland Ave	Pt IV	18444	Designation By-Law Passed By Scarborough City Council on April 17, 1979
Agincourt 1, 5 Ross Ave	Listed		

### 2.4.3 Future Conditions

No major changes to the cultural environment are anticipated.

## 2.5 Transportation

A large number of TTC bus routes, the existing Line 3, the Bloor-Danforth Subway (Line 2), GO Transit intercity services, private intercity bus services and freight rail operations are located within the Study Area.

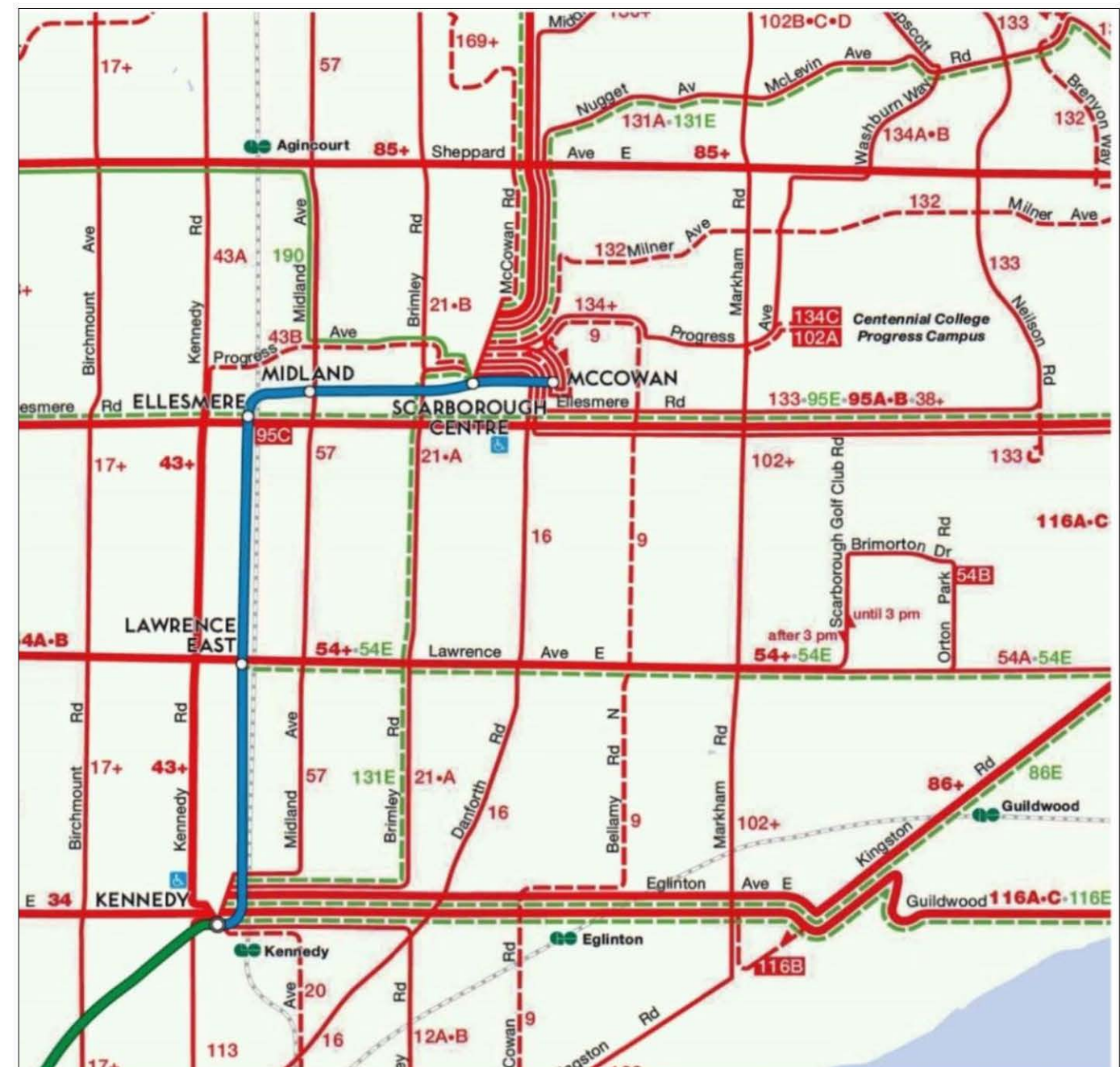
Most of the major roads in the Study Area operate at or near capacity during the morning and afternoon peak hours.

### 2.5.1 TTC Service

The existing TTC bus routes in the Study Area are shown in Exhibit 2-9.

The majority of the transit routes in the Study Area provide direct service to Line 3 at the six stations on that rapid transit line.

**Exhibit 2-9: Existing TTC Transit Services**



Source: TTC Ride Guide



## Existing and Future Conditions

### 2.5.2 Scarborough Centre Station

The Scarborough Centre Station is an existing elevated station on Line 3 and, although McCowan Station is the last station on the line, Scarborough Centre Station is effectively the main terminus on the line from a bus routing perspective. Pedestrians can access the station from the north (from the Scarborough Town Centre mall) and the south (towards the Scarborough Civic Centre). This station is barrier free.

At the Triton Road level of the station there is a 19-bay bus terminal that serves TTC, GO Transit and other regional bus operators. TTC bus routes that use this bus terminal on a regular, scheduled basis (Wheeltrans services also serve the station on an on-demand basis) are the following:

**Table 2-4: TTC Typical Weekday Ridership at Scarborough Centre Station<sup>1,2</sup>**

Bus Route	To Station	From Station
9 Bellamy	900	800
16 McCowan	2,100	2,000
21 Brimley	2,400	2,200
38 Highland Creek	3,300	3,700
43 Kennedy	600	600
129 McCowan North	4,700	3,600
130 Middlefield	700	900
131 Nugget	1,500	1,600
132 Milner	1,200	1,000
133 Neilson	2,700	2,400
134 Progress	4,000	4,000
169 Huntingwood	100	200
190 Scarborough Centre Rocket	2,400	2,800
199 Finch Rocket	2,800	2,900
<b>Totals</b>	<b>29,400</b>	<b>28,700</b>

Notes: 1. based on most recent weekday counts as of December 30, 2016  
2. also includes ons/offers at McCowan Stn (Bushby & McCowan stop)

The eastern portion of the Scarborough Centre Station Bus Terminal is used by GO Transit (and other intercity carriers). The GO Transit routes that use this terminal include:

- **Highway 407 East:**  
Operates from Pickering, and serves University of Toronto Scarborough Campus (UTSC), the Centennial College Ellesmere Campus, Scarborough Town Centre, Richmond Hill Centre and York University.
- **Durham College / University of Ontario Institute of Technology (UOIT):**  
Operates from Scarborough Centre Station and ends at UOIT campus.

- **Oshawa Highway:**  
Operates from Oshawa and serves Whitby, Ajax, Pickering, Scarborough, York Mills and Yorkdale.
- **Oshawa Highway Express:**  
Operates from Oshawa and serves Whitby, Ajax, Pickering, Scarborough and Finch.
- **Oshawa Highway 401:**  
Operates from Oshawa and serves Whitby, Ajax, Scarborough Centre and Finch.

GO Transit, Greyhound and Coach Canada and Can-Ar will continue to use the Terminal.

**Exhibit 2-10: Existing Scarborough Centre Station, looking south**



### 2.5.3 McCowan Station

McCowan Station is an existing elevated station located on the east side of McCowan Road. Public parking is available south of Bushby Drive (to the south side of McCowan Station).

Immediately to the east of McCowan Station is the existing McCowan carhouse and storage facility. It is a purpose built facility with sufficient storage capacity and maintenance provisions for the existing Line 3 vehicles.

### 2.5.4 Midland Station

Midland Station is an existing elevated station located above Midland Avenue. Pedestrians can access the station from the east and west sides of the road (collector's booth on the west side and automatic entrance on the east side).

## Existing and Future Conditions

### 2.5.5 Ellesmere Station

Ellesmere Station is an existing at grade station situated beneath the Ellesmere Road overpass. Pedestrians can access the station from the east and west sides of the existing rail corridor. Beneath the overpass, on the east side, there is a 60 space commuter parking lot and a passenger pick-up and drop-off facility.

There are no bus bays or direct connections to any bus routes at the station.

### 2.5.6 Lawrence East Station

Lawrence East Station is an existing at grade station situated beneath the Lawrence Avenue East overpass. Pedestrians can access the station from the east and west sides of the existing rail corridor. Beneath the Lawrence Avenue overpass, on the east side, there is a 90 space commuter parking lot and a passenger pick-up and drop-off facility. On the west side, there is a four-bay bus terminal that serves the Lawrence East bus route – branch 54A (eastbound), 54B (eastbound and westbound), and 54C (eastbound).

### 2.5.7 Kennedy Station

Kennedy Station is a designated Mobility Hub and is located at the eastern terminus of the Bloor-Danforth subway (Line 2) and the southern terminus of Line 3. As such, it provides a significant connection between Scarborough and areas further south and west, including downtown Toronto.

Kennedy Station is bound by Eglinton Avenue to the north, CN Rail and Transway Crescent to the south and the GO Transit Stouffville rail line on the east.

Kennedy Station also connects to GO Transit at the Stouffville-Kennedy GO Station. Service on the GO Transit Stouffville line comprises seven southbound trains during the morning period from 6:09 to 9:34<sup>1</sup> and eight northbound trains during the afternoon period from 14:18 to 19:18<sup>2</sup>.

### 2.5.8 Other Routes in the Study Area

In addition to those routes that serve Line 3 stations, the TTC currently operates the following bus routes that pass through the Study Area (source: [www.ttc.ca](http://www.ttc.ca)):

- **12 Kingston Rd** operates between Victoria Park Station on Line 2, through the St. Clair Avenue East and Brimley Road area, and Kennedy Station on Line 2, generally in an east-west direction. Accessible service is provided on the route. Kennedy Station is an accessible station. Bike racks are available on this route.
- **20 Cliffside** operates between Main Street Station and Kennedy Station on Line 2, generally in an east-west direction. Accessible service is provided on the route. Both Main Street and Kennedy Stations are accessible subway stations. Bike racks are available on this route.

- **21 Brimley** operates between Kennedy Station on Line 2, through Scarborough Centre Station on Line 3, and the area of Brimley Road and Steeles Avenue East, generally in a north-south direction. Accessible service is provided on the route. Both Kennedy and Scarborough Centre Station are accessible stations. Bike racks are available on this route.
- **34 Eglinton East** operates on Eglinton Avenue East between Eglinton Station on the Yonge-University-Spadina subway (Line 1) and Kingston Road, in an east-west direction. It also serves Kennedy Station on Line 2. Accessible service is provided on the route. Both Eglinton and Kennedy Stations are accessible subway stations. Bike racks are available on this route.
- **43 Kennedy** operates on Kennedy Road between Kennedy Station on Line 2, and Steeles Avenue East in a north-south direction. Accessible service is provided on the route. Both Kennedy and Scarborough Centre Stations are accessible stations. Bike racks are available on this route.
- **57 Midland** operates between Kennedy Station on Line 2 and the area of Midland Avenue and Steeles Avenue East, generally in a north-south direction. It also serves Midland Station on Line 3. Accessible service is provided on the route. Kennedy Station is an accessible subway station. Bike racks are available on this route.
- **86 Scarborough** operates between Kennedy Station on Line 2, and the Toronto Zoo, with short turn service to the area of Lawrence Avenue East and Beechgrove Drive. Accessible service is provided on the route. Kennedy Station is an accessible subway station. Bike racks are available on this route.
- **113 Danforth** operates between Main Street Station and Kennedy Station on Line 2, generally in an east-west direction. Accessible service is provided on the route. Both Main Street and Kennedy Stations are accessible subway stations. Bike racks are available on this route.
- **116 Morningside** operates via Eglinton Avenue East, and Morningside Avenue between Kennedy Station on Line 2 and the area of Morningside Avenue and Old Finch Avenue. Branch service is provided to the UTSC, and the area of Conlins Road and Ellesmere Road. Accessible service is provided on the route. Kennedy Station is an accessible subway station. Bike racks are available on this route.
- **131 Nugget** operates between Scarborough Centre Station on Line 3 and the area of Old Finch Avenue and Morningview Trail, generally in an east-west direction. It also serves Kennedy Station on Line 2 via Brimley Road, but only during the peak periods from Monday to Friday. Accessible service is provided on the route. Both Scarborough Centre and Kennedy Stations are accessible stations. Bike racks are available on this route.
- **198 U of T Scarborough Rocket** bus route operates between Kennedy Station on Line 2 and UTSC, generally in an east-west direction. Accessible service is provided on the route. Kennedy Station is an accessible subway station. Bike racks are available on this route.
- **305 Eglinton East Blue** (night bus route) operates between the area of Eglinton Station on Line 1 and the Rouge Hill GO Station, in an east-west direction. Accessible service is provided on the route. Bike racks are available on this route.

1. First scheduled train service does not stop at Kennedy Station.  
2. Scheduled departure times from Kennedy Station.

## Existing and Future Conditions

### 2.5.9 Road Network, Pedestrians and Cyclists

The existing road network consists of a grid pattern of arterial roads and freeways within the City of Toronto. Kennedy Road is a major north-south arterial immediately west of Scarborough Centre Station.

Eglinton Avenue is a major east-west arterial in the City of Toronto. Within the Study Area, it consists of a six-lane cross-section with a sidewalk on both sides. A bridge built in 1976 carries Eglinton Avenue over the GO Transit Corridor and the existing at-grade section of Line 3 leaving Kennedy Station.

Within the Study Area, Midland Avenue, Brimley Road, McCowan Road and Markham Road are all major north-south arterials in the City of Toronto. Each consists of a six-lane cross-section with a sidewalk on both sides. Bellamy Road consists of a five-lane cross-section with a sidewalk on both sides.

At present, there are no designated bike lanes on any of the major roads in the vicinity of the Study Area.

### 2.5.10 Navigable Waterways

Based on an initial determination by Transport Canada, the Highland Creek and its associated branches within the Study Area are not considered navigable.

### 2.5.11 Future Transportation and Infrastructure Plans

#### 2.5.11.1 Scarborough Centre Transportation Master Plan

The Scarborough Centre "On the Move" is a Transportation Master Plan (TMP) study currently underway. The TMP will establish a transportation network supportive of all users, and focus on building connections within Scarborough Centre, to the subway, as well as to the surrounding area and the rest of the City.

The study is considering the feasibility of connections previously identified in various approved planning policies and studies, such as the Scarborough Centre Secondary Plan, which speaks to creating a cohesive and connected public realm comprised of existing and new streets, pedestrian sidewalks, cycling routes, transit routes, and linkages. The study will also consider further connections consistent with those approved policies and supporting precinct-level plans within the Secondary Plan Area.

#### 2.5.11.2 Regional Express Rail

Provincial investment over the next decade in GO Regional Express Rail (RER) represents a significant increase in service levels and travel speed on the existing Stouffville GO corridor. The corridor, located between Kennedy Road and Midland Avenue, runs roughly north-south through the Study Area. The RER plan proposes electrifying the entire corridor and operating a two-way, all-day service every 15 minutes between Union Station and Unionville GO Station. An additional service would operate from Lincolnville GO Station to Union Station during morning peak hours and from Union Station to Lincolnville Go Station during evening peak hours every 20 minutes. Both of these services would stop at all existing GO stations between their terminal stations, including Kennedy Station within the Study Area.

#### 2.5.11.3 SmartTrack

The SmartTrack proposal builds upon the provincial RER initiative. It would make use of the improvements to the Stouffville GO corridor in the Study Area, as well as other improvements outside the Study Area, to provide a two-way, all-day service every 15 minutes or better between Unionville GO Station and St. Clair West, through Union Station. SmartTrack is proposed to stop at all existing GO stations between the terminal stations, including Kennedy Station within the Study Area, as well as several new stations including Lawrence Avenue East within the Study Area. SmartTrack is being implemented by City Planning, in consultation with the TTC and Metrolinx, to provide a more urban transit service than currently contemplated under GO RER.

#### 2.5.11.4 Eglinton East LRT

The TTC and City of Toronto undertook an EA to study the 13 kilometre long Scarborough-Malvern Light Rail Transit (SMLRT) corridor that would link Kennedy Station, including Line 2, Line 3 and the proposed Eglinton Crosstown Light Rail Transit (LRT), with northern Scarborough. The project received EA approval in 2009 that would see bus services along the corridor be replaced by (LRT) – electrically powered "light rail" vehicles operating in a designated ROW in the centre of the street. The light rail service would run east from Kennedy Station (on Eglinton Avenue), northeast on Kingston Road, and then north on Morningside Avenue (via Ellesmere Road and Military Trail), to Sheppard Avenue.

Council adopted the new Scarborough Network Transit Plan in 2016, which included the Eglinton East LRT (EELRT) based primarily on the SMLRT project. The key differences between the EELRT and the approved SMLRT will see the line truncated to UTSC, and continuous through service at Kennedy Station. The original SMLRT approved EA will be updated to reflect these proposed service concept changes, among other important elements including traffic impacts, maintenance and storage facilities.

In March 2017, City Council requested a construction timetable and funding plan for the Eglinton East Crosstown Extension in 2018.

#### 2.5.11.5 Highway 2 Bus Rapid Transit

Metrolinx, in partnership with the Region of Durham, the City of Toronto, and the TTC, is initiating a Planning Study and Initial Business Case to understand options for rapid transit between Highway 2 in Durham Region and the City of Toronto. The study will develop options for service strategies and Bus Rapid Transit (BRT) infrastructure along the Highway 2 corridor in Durham Region, between Oshawa and the UTSC. A Metrolinx Benefits Case Analysis for the Durham-Scarborough BRT was completed in 2010. The study compared three options with varying levels of BRT exclusivity along Highway 2 in Durham Region from Oshawa to Scarborough Centre in the City of Toronto. The study identified Ellesmere Road as the preferred corridor into Scarborough Centre to connect with TTC's Line 3 at Scarborough Centre Station, and future subway station.