

Executive Summary

E.1. Introduction and Background

E.1.1 Summary Recommendation

A number of assessments have been conducted over the past decade of alternative methods to replace or reconstruct / rehabilitate the Toronto Transit Commission's (TTC) aging Line 3 - the Scarborough Rapid Transit (SRT) facility. Most recently, at their meeting in July 2016, City of Toronto Council endorsed the option of replacing Line 3 with an extension of the Bloor-Danforth Subway (Line 2) to Scarborough Centre. The subway extension would operate as an 'express' subway service from Kennedy Station, approximately 6.2 kilometres northeast, to its new terminus – Scarborough Centre Station.

As shown in Exhibit E1-1, the preferred alignment for the Scarborough Subway Extension (SSE) is via Eglinton Avenue East, Danforth Road and McCowan Road. The preferred alignment is primarily within the road right-of-way (ROW). However, it shifts to west of McCowan Road for a short section north of Lawrence Avenue; it again veers west of McCowan Road from a point south of Ellesmere Road to allow the subway station to be constructed at the preferred, central location in the area between the two existing Line 3 stations.

E.1.2 Background

The critical problem affecting the existing Line 3 is that the vehicles are over 30 years old and in need of replacement. However, that particular vehicle is obsolete and the newer model that is available is too large for the existing facility and would require physical changes to the infrastructure, for example, the reconstruction of existing structures where there are tight curves.

City Council had confirmed support for the extension of Line 2 from Kennedy Station into Scarborough Centre on October 8, 2013. The initial proposal was for a three stop extension to Sheppard Avenue. However, subsequent to that direction from City Council, City Planning staff re-assessed the transit requirements in this area of Scarborough, taking into account the recent changes to the transportation plans in the nearby Stouffville GO corridor – firm funding commitments for the GO Regional Express Rail (RER) program, plans for the City's SmartTrack program – and the announced delay in the implementation of the previously-approved Sheppard East Light Rail Transit (LRT).

Two refined priorities for the Scarborough Transit Network Plan were developed and endorsed by the City's Executive Committee on January 28, 2016:

1. Support for the development of Scarborough Centre as a vibrant urban node; and,
2. Support for the development of complete communities along the Avenues and improvements to local accessibility.

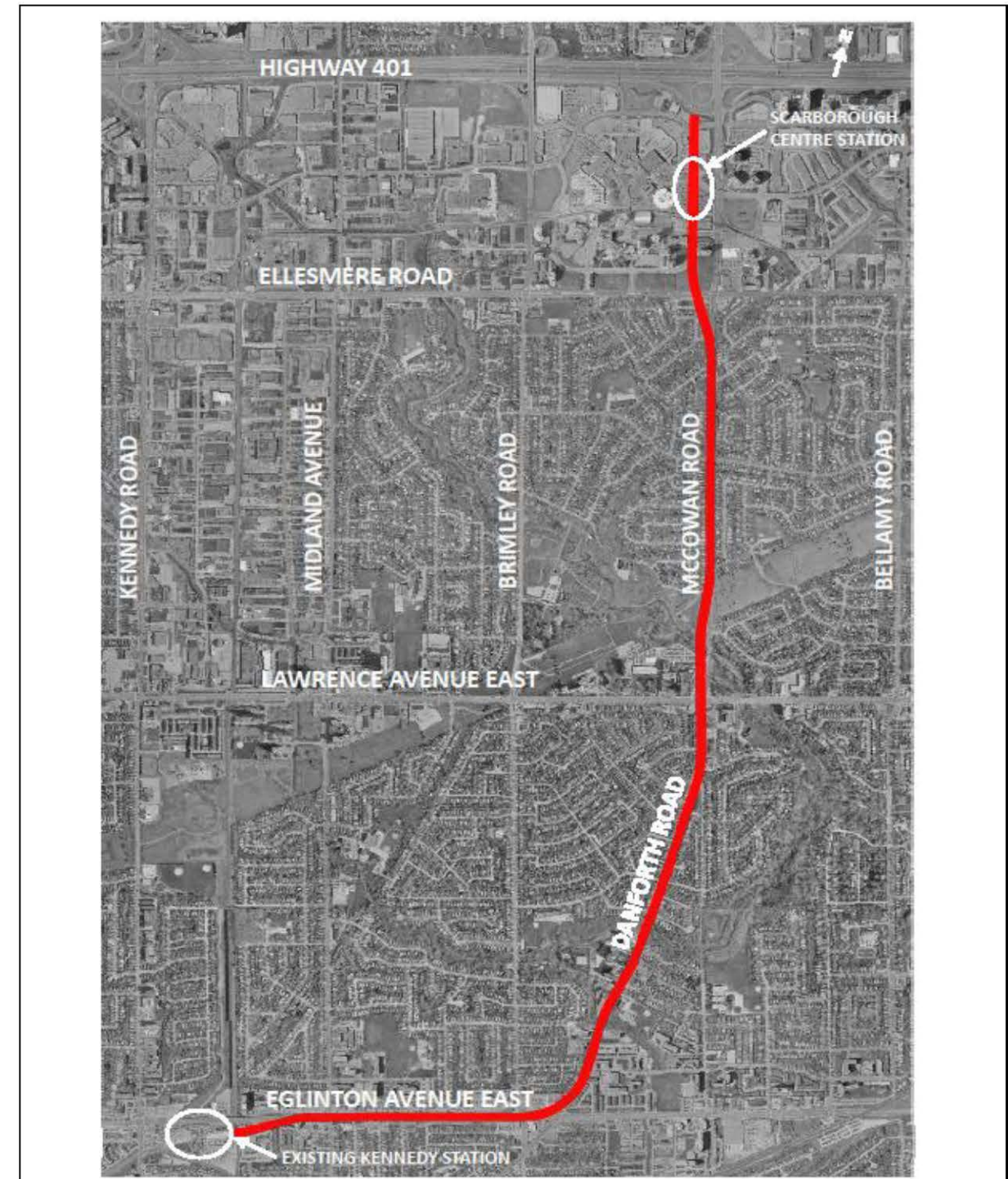
The Executive Committee directed staff to proceed with the analysis of an optimized transit network to address these priorities, which included:

- An extension of Line 2 express to Scarborough Centre;
- An extension of Line 5 (Eglinton Crosstown LRT) to the University of Toronto, Scarborough Campus (UTSC);

- SmartTrack stations at Lawrence Avenue East and Finch Avenue East; and,
- A rapid transit solution on the Sheppard Avenue East corridor.

At their meeting in July, 2016, City Council endorsed the express subway extension of Line 2. This report deals solely with the SSE Project.

Exhibit E1-1: Recommended Scarborough Subway Extension Alignment



E.1.3 Study Purpose

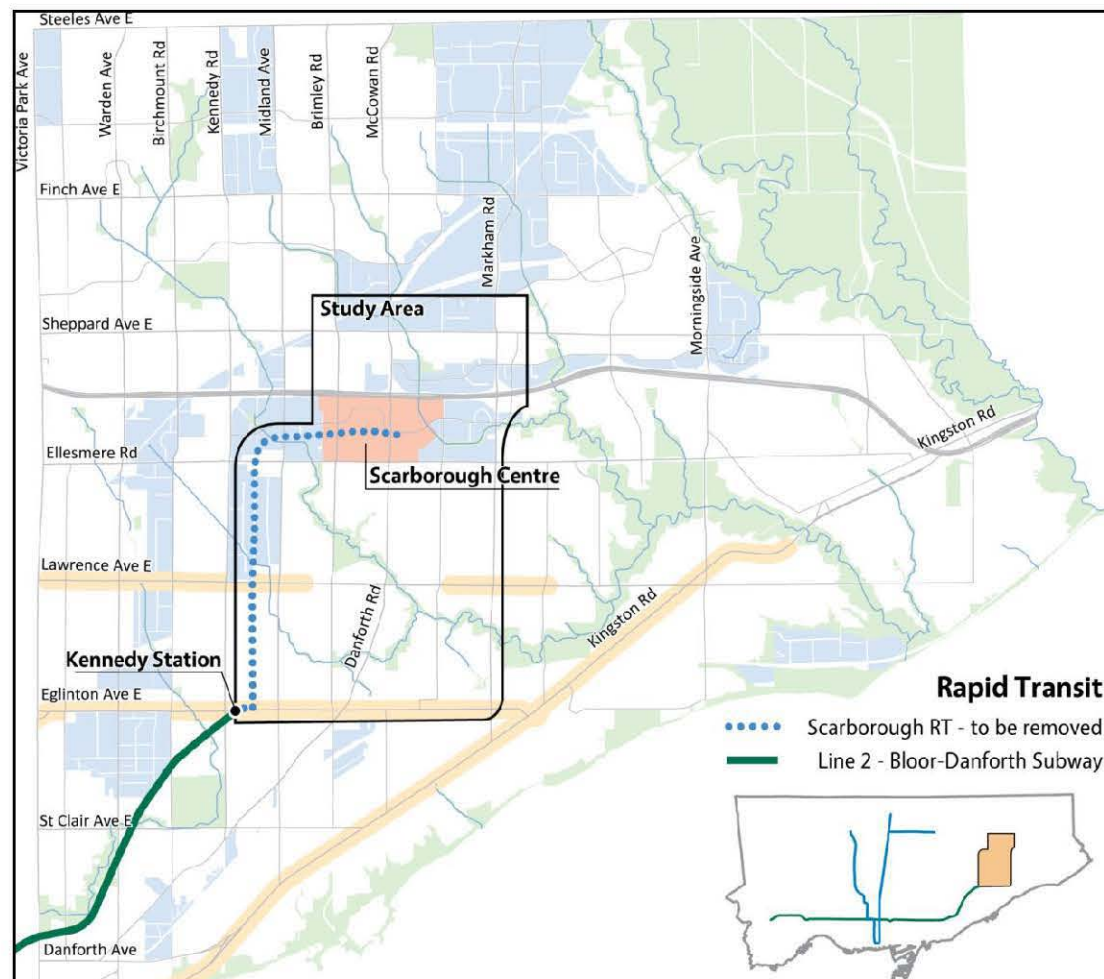
This type of transit project must adhere to the requirements of the *Ontario Environmental Assessment Act (Ontario EA Act)*. The Ministry of Environment and Climate Change (MOECC) has approved a streamlined Environmental Assessment (EA) process specific to transit projects – the Transit Project Assessment Process (TPAP) and this report provides the required documentation of this process. As with any EA process, the central focus is on ensuring that the impacts associated with the Project are clearly identified, and mitigated to the greatest extent practical.

The report describes the conditions in the area in which the Project will be implemented, the major elements of the SSE, the types of impacts that may be expected from the construction of, and ongoing operation and maintenance related to, the SSE, and the manner in which those impacts will be mitigated and monitored.

E.1.4 Study Area

As shown in **Exhibit E1-2**, the Study Area is roughly bounded on the south by Eglinton Avenue East, Sheppard Avenue East on the north, on the west by the existing Line 3 and Brimley Road once north of Ellesmere Avenue, and on the east by Markham Road / Progress Avenue.

Exhibit E1-2: Study Area



E.1.5 Study Process – The Transit Project Assessment Process

The SSE study adheres to the TPAP, which satisfies the *Ontario EA Act*, Ontario Regulation 231/08, the Transit Project Regulation (Transit Projects and Metrolinx Undertakings).

Proponents of a project must follow the prescribed steps in the TPAP within specified time frames, and provide adequate opportunities for review and comment by a broad range of stakeholders, culminating with the Minister of the Environment and Climate Change’s decision within six months of the start of the process. Once the TPAP has been completed to the satisfaction of the Minister of the Environment and Climate Change, transit project proponents may file a Statement of Completion and proceed with design and construction processes.

E.1.6 Relevant Policies

There are a variety of policies that support this Project. The most directly-relevant are described below.

E.1.6.1 City of Toronto Official Plan

Providing a convenient, high speed rapid transit connection to this Urban Growth Centre (UGC) is a key tenet of the City’s Official Plan (OP), is to ensure Scarborough has the same degree of mobility opportunities that exist in other urban centres (such as North York and Yonge – Eglinton) and those that are otherwise planned (including Six Points in Etobicoke). The key transit planning priority for Scarborough Centre is to better connect the Centre to the rest of the Toronto city region in order to:

- Encourage high-quality employment and residential growth in the Centre; and,
- Enhance the accessibility of Scarborough Centre; improving the speed, reliability and convenience of transit service linking Scarborough Centre and key destinations in the Toronto city region.

Better connecting Scarborough Centre to the rest of the City and Region is crucial to its success.

E.1.6.2 Scarborough Centre Secondary Plan

The Scarborough Centre Secondary Plan envisions Scarborough Centre as the ‘urban focal point’ for eastern Toronto where employment, housing, institutional, cultural, recreational, commercial and community services, and transit will be concentrated in a dynamic mixed use location. The Centre is a focal point, at the eastern end of Line 3, of numerous local and interregional surface transit lines. It is adjacent to Highway 401 and at the crossroads of several major arterial roadways. These features create greater opportunities for employment and residences within the Centre. Promoting transit supportive development in the vicinity of rapid transit is an OP strategy. Higher densities of both residential and employment land uses in specific locations within the Centre will increase ridership levels to help sustain transit services, support future transportation improvements and further the City’s goal of accommodating balanced growth at strategic locations within Toronto.

E.1.6.3 Growth Plan for the Greater Golden Horseshoe, 2017

The Growth Plan for the Greater Golden Horseshoe (Growth Plan) was first adopted in 2006 and amended in 2017 after a comprehensive review of the policies. The Growth Plan identifies a regional strategy for managing growth to ensure continued economic prosperity and a high quality of life in the Toronto region. Decisions on planning matters must conform to the 2017 Growth Plan, the only exceptions are for matters that are historically exempted through either legislative or regulatory provisions providing otherwise.

Key policies of the Growth Plan are related to the co-ordination of land use and transportation infrastructure, including the establishment of UGCs to function as mixed-use, high-density downtowns that are well connected to rapid and local transit. Scarborough Centre is one of five UGCs located within the City of Toronto. Its target density is 400 people and jobs per hectare. To enable this level of intensification and foster a large and vibrant mixed-use community, this area must be served by very high quality rapid transit.

E.1.6.4 Provincial Policy Statement, 2014

The Provincial Policy Statement was issued under Section 3 of the *Planning Act* and came into effect April 30, 2014. As a key part of Ontario's policy-led planning system, the Provincial Policy Statement provides policy direction on matters of provincial interest related to land use planning and development, and provides for the appropriate management of resources, public health and safety, and the quality of the natural and built environment.

Key policies of the Provincial Policy Statement focus on efficient development patterns to optimize the use of land, resources and public investment in infrastructure and public service facilities. The development of the SSE will help support the financial well-being of the Province and City, promote strong and healthy communities for people of all ages, and promote a long lasting and competitive economy while sustaining a clean and healthy environment.

E.2. Existing and Future Environmental Conditions

Existing and future¹ conditions provide a baseline for the generation of alternatives, assessment of impacts and the identification of mitigation measures and 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.

E.2.1 Natural Environment

The principal features related to the existing natural environment, and some key aspects of each, follow. No major changes to any of these features are expected under future conditions.

E.2.1.1 Physiography, Geology and Soil Conditions

The soil conditions, based on historic and recent borehole investigations, are glacial deposits of gravels, sands, silts and clays.

E.2.1.1.1 Groundwater Conditions

The Study Area has groundwater at depths of 1 to 10 metres below grade; specific locations have a high water table.

E.2.1.1.2 Drainage and Hydrology

The Study Area is located within the Highland Creek watershed and is approximately 102 square kilometres in area, with over 75 kilometres of watercourses. The Study Area is almost completely (85 %) urbanized. A significant portion of the watershed's channel network has been either buried underground or lined with concrete or gabion baskets to reduce erosion and prevent flooding. The majority of the existing stormwater system was built before current Ministry of the Environment and Climate Change (MOECC) guidelines were in place and there are no quality treatment facilities found within the macro drainage system.

E.2.1.1.3 Fish and Fish Habitat

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 Toronto Region and Conservation Authority (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 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 of Highland Creek all support warmwater fish communities.

E.2.1.1.4 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.

E.2.2 Emissions

E.2.2.1 Air Quality

With the current conditions, the worst-case combined concentration is below the guideline for all contaminants except for benzene and particulate matter (PM_{2.5} and PM₁₀) and total suspended particulates (TSP). This is because the Study Area is in an urban environment. In the future, as the area is further developed, there will be added congestion expected on the roadways, which can affect air quality.

E.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 the proximity of the preferred alignment. These sensitive land uses include residential dwellings / buildings, institutional facilities including a heritage building, hospitals, group homes, places of worship and commercial / industrial establishments encompassing noise / vibration sensitive operations, equipment or functions.

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. 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

1. Future conditions, for this purpose, are assumed to be without the implications of the Project

Road, Lawrence Avenue East and Ellesmere Road. The major collector roads include Brimley Road and Brimorton Drive, which provide lower ambient sound levels.

Both ambient sound and vibration levels may be expected to increase over the years due to natural traffic growth.

E.2.3 Socio-Economic Environment

E.2.3.1 Utilities

Utilities include 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.

E.2.3.2 Existing Land Use

Scarborough Centre

Shown in Exhibit E2-1, the Scarborough Centre area has been envisioned to become a vibrant urban area by Toronto's Official Plan (OP) since 1968. Scarborough Centre is the focal point for both employment and residential growth in eastern Toronto.

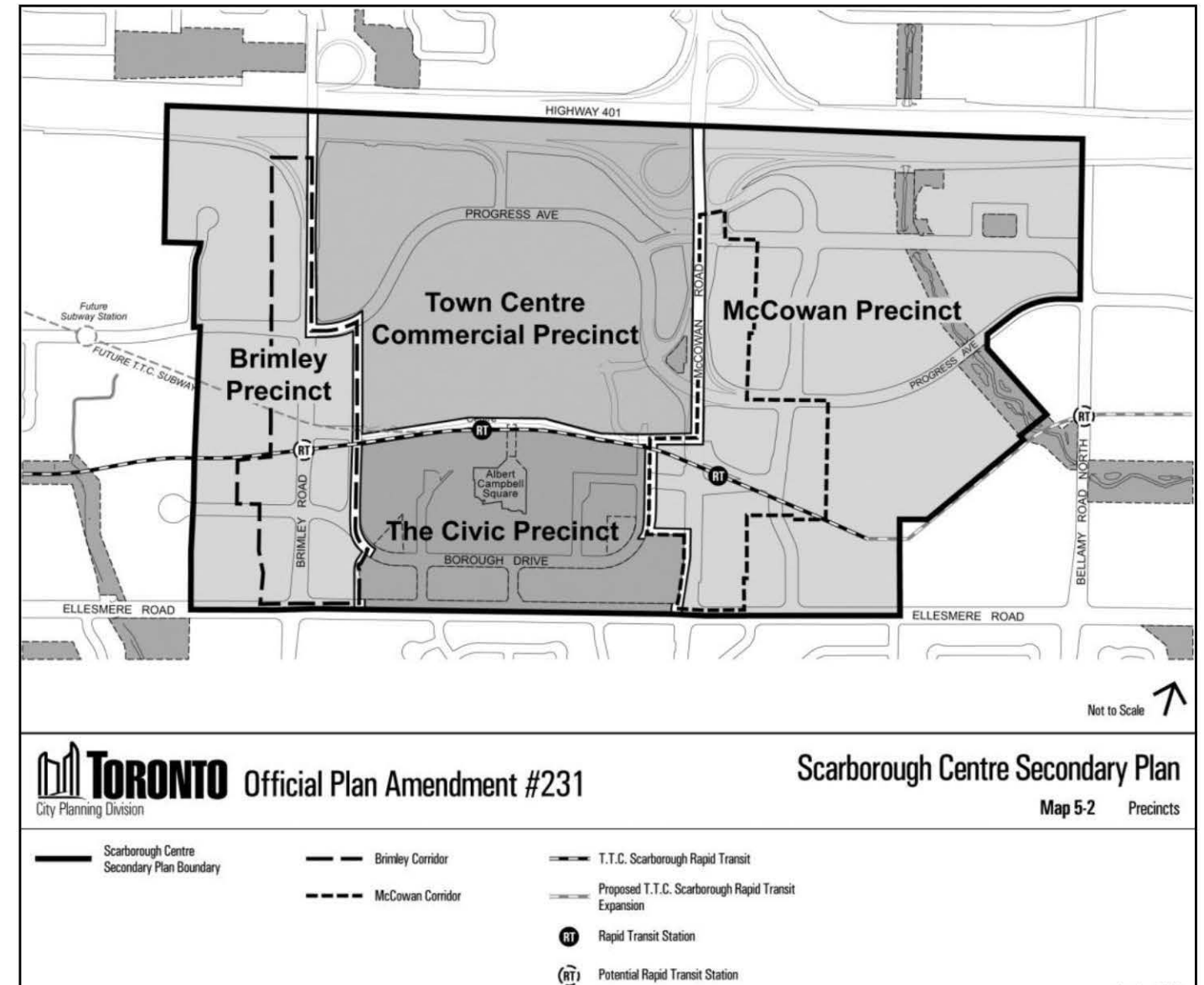
Scarborough Centre is divided into four precincts: Commercial, Civic, Brimley, and McCowan. The Commercial Precinct is centred on the Scarborough Town Centre (a regional mall surrounded by large format retail uses, restaurants and surface parking). The Civic Precinct lies to the south of the Commercial 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.

The Eglinton / Danforth / McCowan Corridor

The corridor, through which the subway will run, south of the Centre, is characterized by established low rise residential neighbourhoods, with older employment areas located along Ellesmere Road and the west side of Midland Avenue.

It is expected that the Study Area will continue to develop in accordance with the designations within the City of Toronto OP.

Exhibit E2-1: Scarborough Centre – Official Plan



E.2.4 Cultural Environment

The results of the Stage 1 Archaeological Assessment indicate that while most of the lands within the existing Study Area appear to have been disturbed by past development, some of the Study Area still retains archaeological potential. Lands with archaeological potential which will be impacted on the surface must be subject to further assessment prior to construction.

A review of documentation and mapping indicate that there are a number of built and cultural heritage resources within the Study Area that have been included on the City's Heritage Register. Any of these properties that might be impacted by the Project footprint should be subject to further evaluation as appropriate. No major changes to the cultural environment are anticipated under future conditions.

E.2.5 Transportation

A large number of Toronto Transit Commission (TTC) bus routes, the existing Scarborough Rapid Transit (SRT) (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.

In the future, it is expected that a Light Rail Transit (LRT) extension from Kennedy Station to the University of Toronto Scarborough Campus (UTSC), and bus services from Durham Region will also serve the Study Area. It is also anticipated that the Sheppard East LRT will be built.

E.3. Evaluation Process for Selecting the Preferred Subway Alignment

City staff, together with Toronto Transit Commission (TTC) staff, conducted detailed planning studies to identify the preferred alignment and station location for the extension of the Bloor-Danforth Subway (Line 2) express to Scarborough Centre.

E.3.1 Project Objectives

Specific objectives of the studies were to:

1. Support the City-building principles outlined in the City's Official Plan (OP), Growth Plan and Provincial Policy Statement, in particular the development of Scarborough Centre as a vibrant urban node;
2. Make transit as attractive a travel option as practically possible in this area of Scarborough;
3. Minimize adverse environmental impacts associated with the Project; and,
4. Achieve cost-effectiveness.

E.3.2 Evaluation Approach

The criteria that were found to be the most decision-relevant are: i) the ability to support existing and planned development within Scarborough Centre, including provisions for future extensions, ii) impacts to existing customers on Scarborough Rapid Transit (SRT) (Line 3) during construction, iii) property impacts and iv) costs.

E.3.3 Preferred Subway Extension

To identify the preferred corridor for the express subway between Kennedy Station and Scarborough Centre Station, the Study Team evaluated the following corridors as per City Council's direction in January 2016 (see Exhibit E3-1):

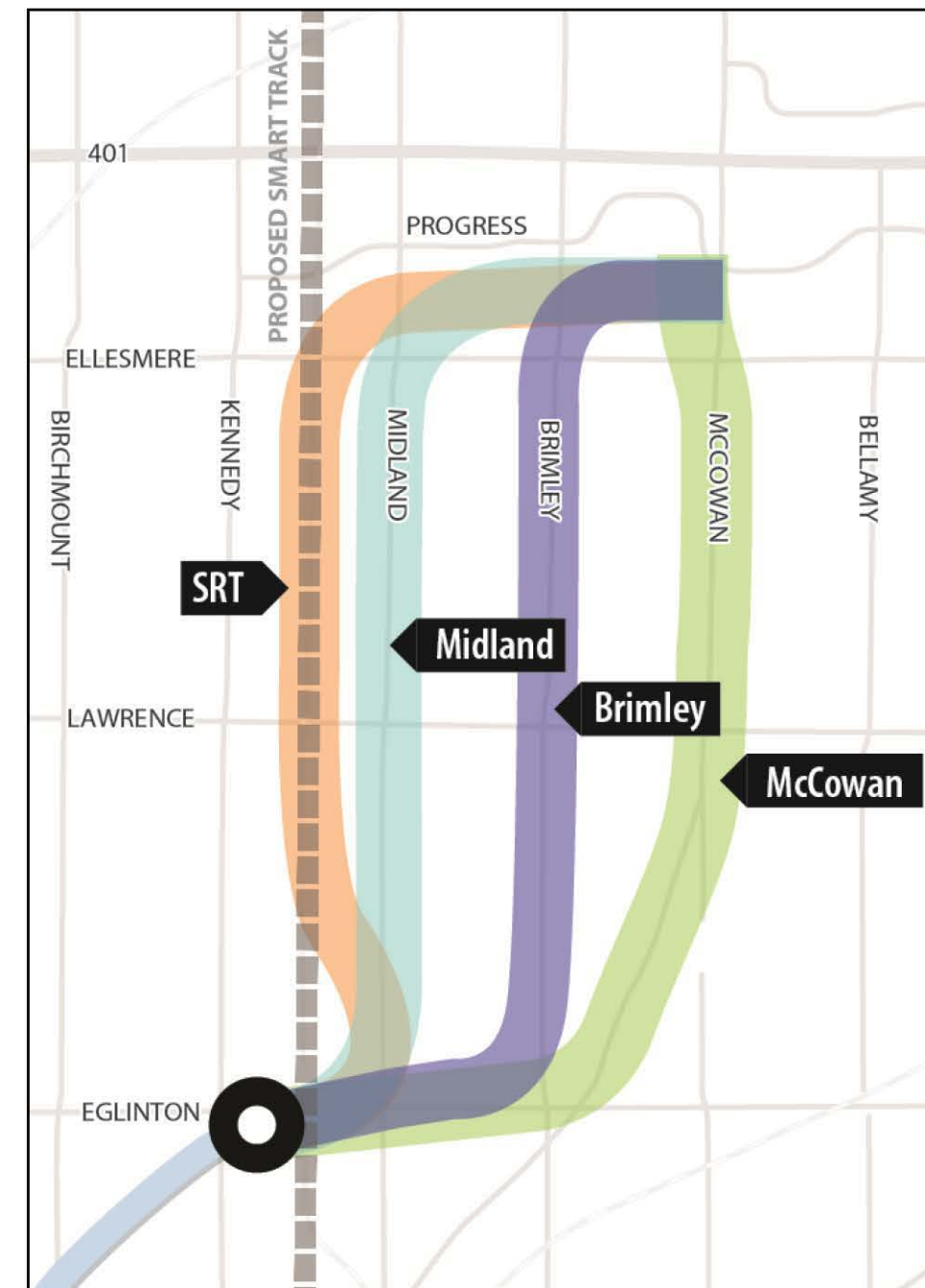
- SRT – Existing Line 3;
- Midland;
- Brimley; and,
- McCowan.

The evaluation resulted in the identification of the McCowan Corridor as the recommended preferred corridor alternative. The McCowan Corridor option allowed the station to be located in the most central location relative to existing and future developments, offered as fast a travel time as any alternative, permitted the continued operation of existing Line 3 during subway construction, and was the lowest cost of the four alternatives (all options were assumed to have at-grade bus terminals at the time of this assessment).

Subsequent to the initial selection of McCowan as the preferred corridor alignment, staff conducted further assessments to determine if there was a new or modified option that would have a lower capital cost, relative

to the McCowan option, but would still satisfy the study objectives. One option that was carried forward for more detailed review was a modified corridor alignment via Brimley Road – with the station located north of Line 3 on an undeveloped site on the western edge of Scarborough Centre, just on the west side of the Scarborough Town Centre mall. This alternative proved to have a lower capital cost than the McCowan option and, with the station removed from existing Line 3, it would allow Line 3 to remain in operation during subway construction. However, a station on the west side of the mall was found to be significantly less desirable from the perspective of providing the best service to existing customers in this area and providing a catalyst for future growth. This further process confirmed McCowan as the preferred corridor alignment.

Exhibit E3-1: Corridor Alternatives for Express Subway Extension



E.4. Project Description

Since this Project is an extension of the existing Bloor-Danforth Subway (Line 2) current technology and operating requirements on the existing line will govern its operation.

The following description of the planned 6.2 kilometre extension of Line 2 from Kennedy Station to Scarborough Centre, via Eglinton Avenue, Danforth Road and McCowan Road, focuses on the following key elements:

1. **Alignment** – the location and configuration for the running structure.
2. **Scarborough Centre Station** – the subway station and bus terminal.
3. **Ancillary Features** – the supporting elements required for the operation of the subway, such as special trackwork, emergency exits, and traction power substations (TPSSs) which provide power for operation of the subway trains, as well as the various electrical systems in the subway.
4. **Construction Methods** – tunnelling versus cut-and-cover techniques.
5. **Construction Sequencing** – the construction staging plan is currently under development.

E.4.1 Alignment

The preferred alignment, shown previously in **Exhibit E1-1**, travels east along Eglinton Avenue East within the road right-of-way (ROW) from Kennedy Station to Danforth Road. The alignment then travels north along Danforth Road / McCowan Road in the centre of the road ROW until Lawrence Avenue East. North of Lawrence Avenue East, the alignment runs west of the road ROW to north of Highland Creek and the Hydro Corridor, after which it returns to the centre of the McCowan Road ROW. Beginning a short distance south of Ellesmere Road, the alignment veers to the west, under several private residential properties, a gas station and a woodlot in order to allow the station to be located under the extension of Borough Drive. It then continues underneath Borough Drive / Progress Avenue to the end of the tail tracks immediately south of Highway 401.

E.4.2 Tunnel

A comprehensive assessment of tunnelling options resulted in the recommendation for use of a single, large diameter tunnel rather than twin tunnel construction – two separate 6-metre diameter tunnels - traditionally used by the Toronto Transit Commission (TTC). This results in reduced cost and reduced construction impacts because the special trackwork – crossovers and tail track – can be constructed within the tunnel instead of by cut-and-cover methods that would be required with twin tunnel construction. For more information on tunnelling, refer to **Section E.4.5.1**.

E.4.3 Scarborough Centre Station

Subway Station

The station itself still requires cut-and-cover construction. However, because the tunnel will extend to within a short distance on either side of the subway station box, it is not possible to divert the tracks to either side to facilitate for a large centre platform as is the case when both the station and special track work are constructed using a very long section of cut-and-cover construction. Hence, the tracks must remain at their minimum separation through the station and this requires the use of side platforms. The length of the station is determined by the train length. Trainsets of six cars result in a train length of approximately 135 metres. The corresponding length of the station platform is 152 metres.

Bus Terminal

A key component of Scarborough Centre Station is the bus terminal; it provides a key transfer for the many local and regional routes that will serve this new station. It must accommodate a future expanded bus network for TTC, GO Transit, private intercity carriers, and the introduction of service from Durham Rapid Transit (DRT).

The terminal will require 34 bus bays, nine of which will accommodate the longer articulated model of buses. This size of terminal provides:

- TTC – 24 bays, with eight for articulated buses (using TTC Design Manual guidelines);
- GO Transit – six bays;
- DRT – one bay, articulated; and,
- Intercity Private Transit Services – three bays or on-street stopping areas – location still to be confirmed.

The study of potential locations for this very large terminal concluded that the Triton Road corridor is the preferred location because it would best meet Project objectives related to future development and potential improvements to the road network within Scarborough Centre. The recommended terminal concept is shown in **Exhibits E4-1 and E4-2**. The terminal concept has two levels. The majority of the bus bays (28 bays) are accommodated in the lower level in a widened Triton Road. An upper level would accommodate the remaining six bays, on a new extension of Borough Drive. This road extension is already part of the City's plans for road improvements in this area and is a necessary element of the Bus Terminal design.

The west end of the lower level of the terminal would be unpaid and accommodate the six GO Transit bays. There would be three entrances connecting to the bus platform area on the lower level of the terminal: one off the east side of Borough Drive, one at the end of the terminal connecting the GO Transit terminal area to the pedestrian bridge between the Scarborough Town Centre mall and the development to the south, and a direct (same level) connection from McCowan Road at the east end.

The further development of the Bus Terminal area will include provision of cycling facilities and consideration of potential opportunities for a taxi stand in the vicinity of a station entrance. However, neither a commuter parking facility nor a Passenger Pick-Up and Drop-Off (PPUDO) facility is included in the Project, given that, in keeping with the study objectives, the highest and best use of lands in the vicinity of the new Scarborough Centre Station is transit-supportive development.

Exhibit E4-1: Scarborough Centre Station and Bus Terminal at Borough Level

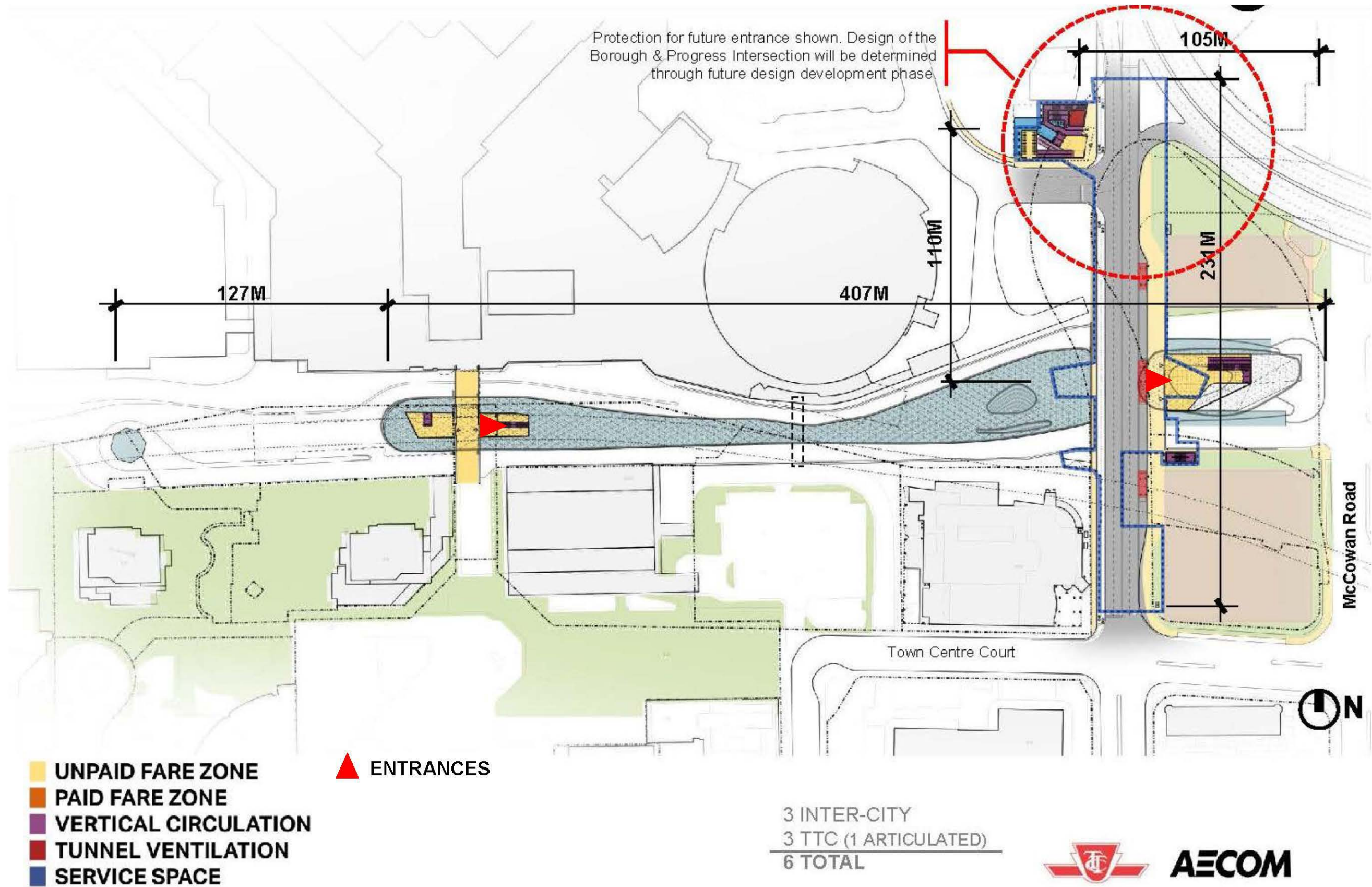
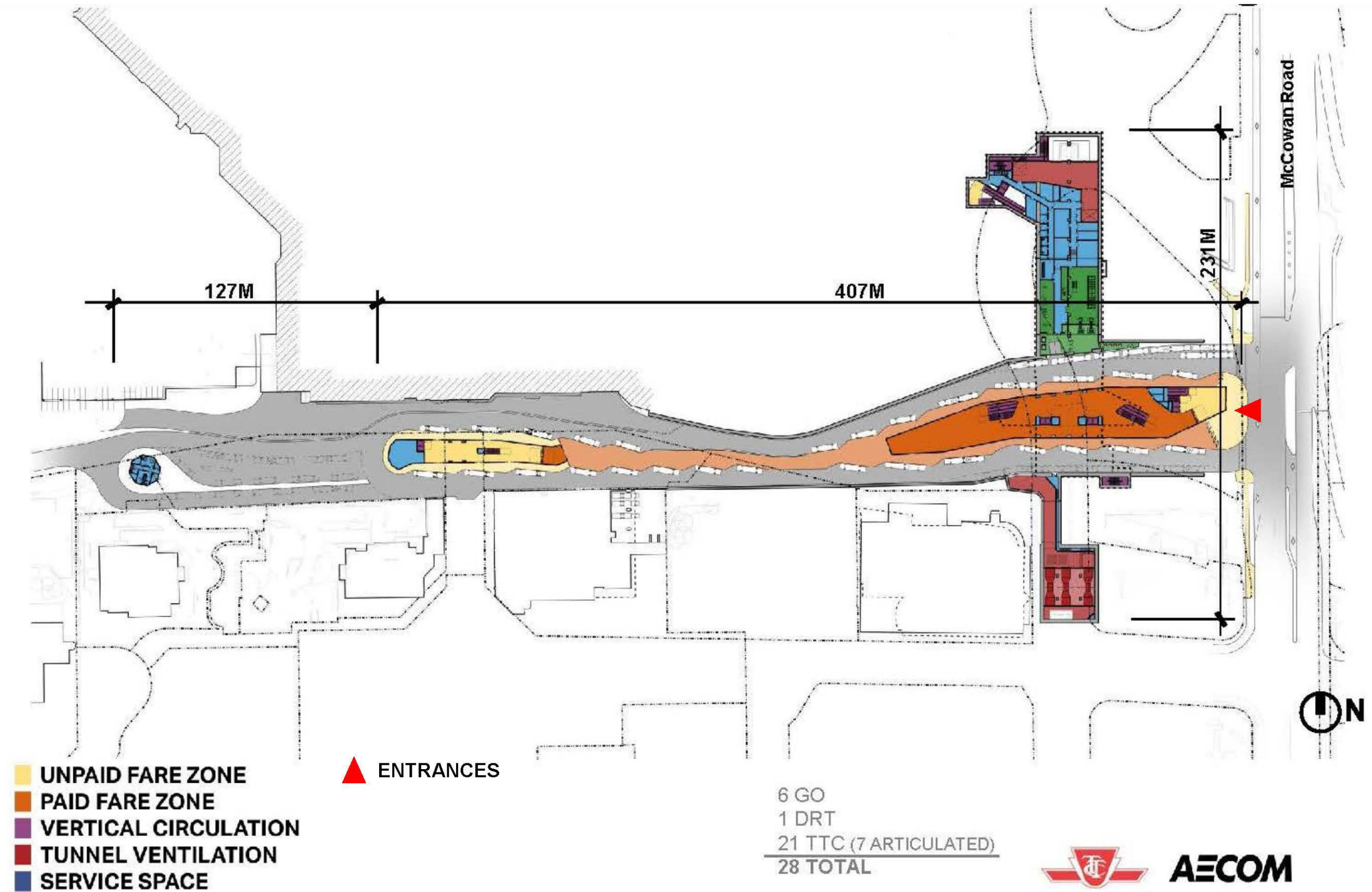


Exhibit E4-2: Scarborough Centre Station and Bus Terminal at Bus Terminal Level



Elements of the design will be further refined through Detailed Design Phase of the Project including but not limited to the following:

- Borough Drive Cross-section;
- The design of a dedicated linear stopping, loading and short-term layover area for buses along the east side of Borough Drive, to accommodate three TTC bus stops;
- Allowance for potential additional / future station entrances;
- Design of Bus Terminal access / egress onto McCowan Road; and,
- Public realm.

E.4.4 Ancillary Facilities

E.4.4.1 Special Trackwork

'Special trackwork' refers to track, other than standard parallel running tracks that support the operation of the subway. There are three locations where this is necessary:

1. Crossover connections will be provided roughly midway along the length of the Scarborough Subway Extension (SSE) – in the vicinity of Lawrence Avenue East – to allow trains to switch tracks, that is to 'cross over' to the other direction when needed to address service reliability issues on the line or in emergency situations where there is a problem at or near the terminal station.
2. Crossover tracks are included in front of (i.e., just south of) the subway platform at Scarborough Centre Station to enable eastbound trains to terminate and turn back westbound. To allow for potential future conditions where the time between trains is scheduled to be much shorter, crossover tracks will also be provided to the north of the station.
3. Tail tracks are to be provided north of Scarborough Centre Station. These added parallel tracks, together with the north crossover, provide the added length that is required, from a safety perspective, to allow for high operating speed into the station. They also provide for temporary storage of subway trains.

E.4.4.2 Station and Tunnel Ventilation

The SSE contains a comprehensive fire life safety plan which includes mechanical fire ventilation using fans.

Ventilation shafts are required in Scarborough Centre Station in order to balance air pressure within the tunnels and station and to provide for emergency exhaust and fresh air supply in the event of an underground fire. Ventilation fans can also be used to alleviate high summer temperatures in the underground station.

Initial studies conducted for the SSE have identified a requirement for a mid-tunnel ventilation structure in the vicinity of Lawrence Avenue East. It will be combined with the construction required for an Emergency Exit Building (EEB) at that location. Based on these initial studies, the at-grade footprint is in the order of 1,000 square metres. The at-grade footprint will be refined during the Detailed Design Phase of the Project.

Kennedy Station is slated for fire ventilation upgrades as part of the Fire Ventilation Upgrade (FVU) capital program. It has been proposed to include some or all of this work in SSE project. Fan units will be required at the east end of Kennedy Station in order to provide tunnel ventilation between Kennedy and the fire ventilation to be provided near Lawrence Avenue.

E.4.4.3 Emergency Exit Buildings

EEBs are the surface element of stairways that extend from the underground tunnel to provide an emergency exit for passengers and an emergency access for firefighting crews, an example shown in **Exhibit E4-3**. Where feasible, they can also provide emergency ventilation and secondary power sources. Each EEB requires direct road access to the building by a fire pumper truck and one parking space for TTC maintenance purposes. The at-grade footprint of each EEB is approximately 30 square metres.

Exhibit E4-3: Typical Emergency Exit



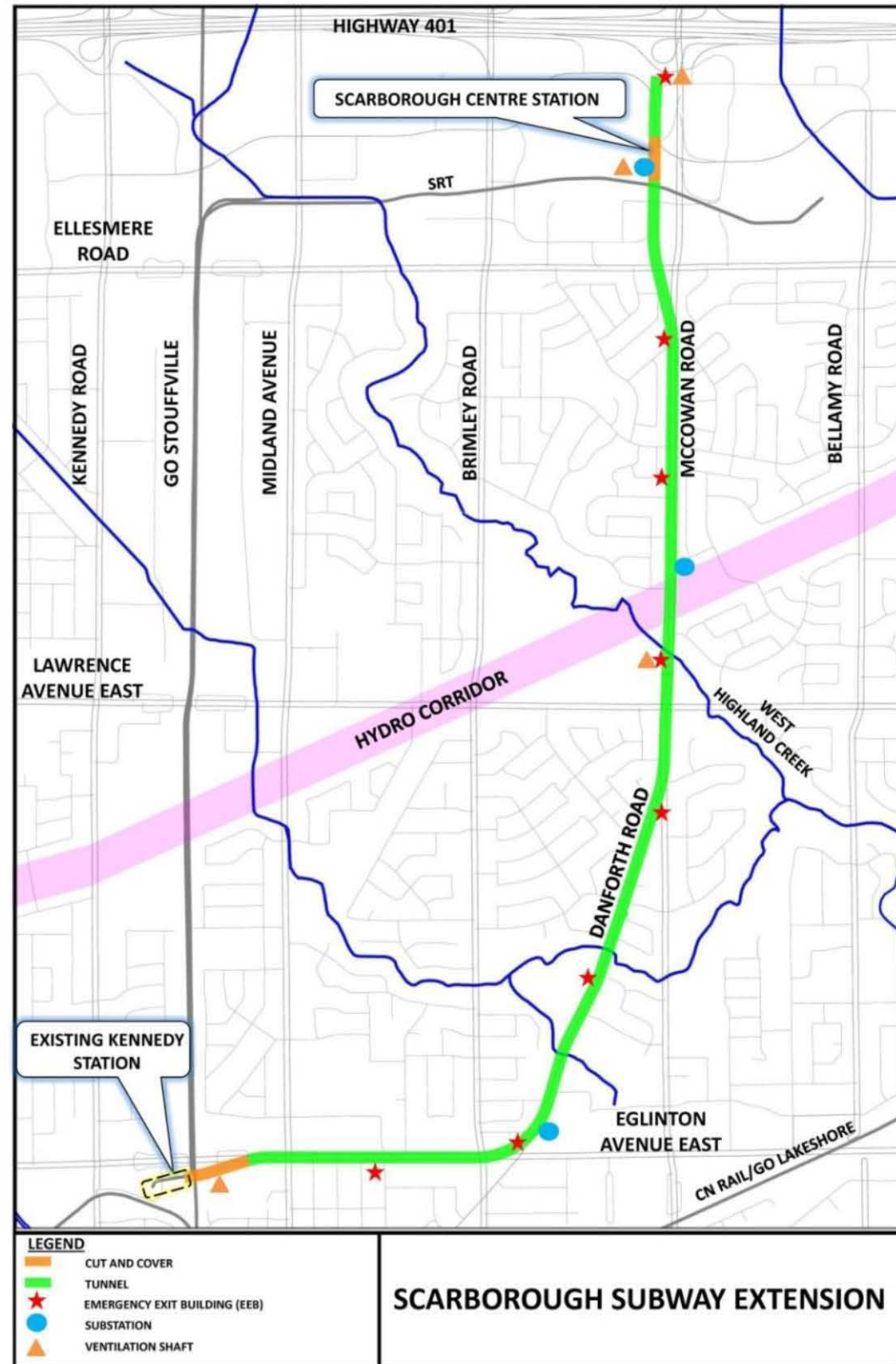
In accordance with National Fire Protection Agency (NFPA) 130 and TTC Standards (DM-0102-03/4.2.1), emergency egress from the tunnels is to be provided throughout the underground system so that the distance to an exit is never greater than 381 metres. Therefore the distance between EEBs cannot exceed 762 metres.

Eight EEBs are required for the SSE, shown in **Exhibit E4-4**:

- Emergency Exit Building 1 – Eglinton Avenue East at Winter Avenue;
- Emergency Exit Building 2 – Danforth Road at Eglinton Avenue East;
- Emergency Exit Building 3 – Danforth Road at Savarin Street;
- Emergency Exit Building 4 – Danforth Road at Barrymore Road;
- Emergency Exit Building 5 – McCowan Road at Lawrence Avenue East;
- Emergency Exit Building 6 – McCowan Road at Meldazy Drive;
- Emergency Exit Building 7 – McCowan Road at Hurley Crescent; and,
- Emergency Exit Building 8 – Corporate Drive at Progress Avenue.

The ventilation structure that is required midway along the preferred alignment will be co-located with EEB 5.

Exhibit E4-4: Alignment Showing Locations of Emergency Exit Buildings, Ventilation Structures and Substations



E.4.4.4 Traction Power Substations

Electrical power is required to power the trains (referred to as traction power) as well as to operate lights, equipment and safety systems associated with stations. The connections between TTC's subway and Toronto Hydro's power distribution grid occur in a facility that is referred to as an electrical substation. These substations contain transformers, switches and circuit panels to support the electrical requirements. To meet the traction power requirements for TTC's subway system, substations are typically 2.0 to 2.5 kilometres apart (see Exhibit E4-4). Since subway stations require power for lights and equipment, TTC usually locates the electrical substations near subway stations. Because the SSE is 6.2 kilometres long, this extension will require three traction power substations (TPSSs) at the following locations:

- Traction Power Substation 1 – Danforth Road at Eglinton Avenue;
- Traction Power Substation 2 – 1 and 3 Bellechasse Street; and,
- Traction Power Substation 3 – located at Scarborough Centre Station.

In addition to traction power equipment, the mid-tunnel traction power substations will also house communications and subway signaling equipment rooms.

The approximate surface footprint of TPSSs 1 and 2 are approximately 800 to 1,000 square metres. An example is shown in Exhibits E4-5 and E4-6.

Exhibit E4-5: Traction Power Substation – 21 Granby Street, Toronto



Exhibit E4-6: Traction Power Substation – Aerial View



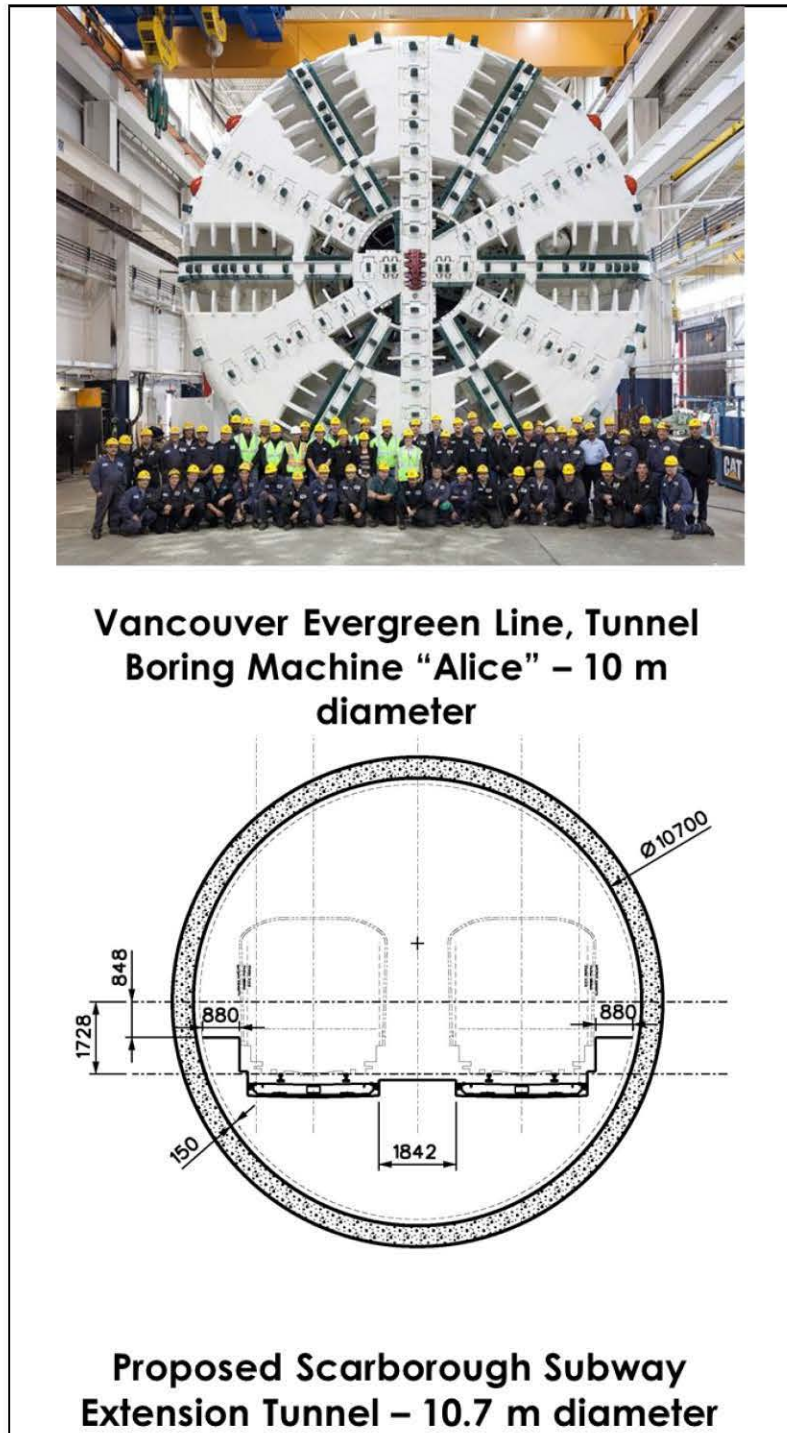
E.4.5 Construction Methods

E.4.5.1 Tunnelled Sections

Tunnelling is the method of construction for the majority of the SSE. Tunnelling uses a Tunnel Boring Machine (TBM) to excavate a tunnel (see Exhibit E4-7), handle the excavated material and place the initial tunnel lining, in a continuous, highly automated process. The front end of the TBM consists of a circular cutting face that excavates the soil and pulls it into its round shell. Traditionally, TTC tunnelling techniques have utilized two separate tunnels – one for each direction, otherwise known as twin bores (6 metre diameter per TBM).

However, the recommended tunnelling method for this Project will utilize a large single bore machine, 10.7 metre diameter, which can accommodate both sets of tracks within a single tunnel. This approach allows the special trackwork to be constructed within the tunnel rather than the requirement for long sections of cut-and-cover as is required with twin bore tunnelling – this will result in a significant reduction in construction impact. The single tunnel will also result in a lower construction cost for the project.

Exhibit 4-7: Single Large Diameter Tunnel



E.4.5.2 Tunnel Boring Machine Launch / Extraction Shafts and Tunnel Construction Sites

The tunnel construction would begin at the north end of the alignment in order to complete the tunnel excavation to the south side of the station location as quickly as possible. This allows the construction of Scarborough Centre Station to occur at the same time as the majority of the tunnel construction.

The TBM would be 'launched' in the area shown in **Exhibit E4-8**. This requires a very large excavation, roughly 90 metres in length and 20 metres in width. The TBM would proceed south, past the station location; the primary tunnel work site would be established immediately south of the station box and existing Scarborough Rapid Transit (SRT) (Line 3) guideway.

The tunnel work site is a temporary construction site where many key functions of the subway construction takes place, including point of entry for the tunnel liners and tracks, and the excavation of discharged tunnel soil. Trucks bring the tunnel liners to this site and take excavated soil away. This work site requires an area of approximately 10,000 square metres (1 hectare) and will be in operation for the majority of the duration of SSE construction.

The TBM launch site must act as a temporary work site until the TBM reaches the primary work site, south of Scarborough Centre Station.

As a result, this area will be subject to the greatest level of impact during the construction phase.

The current plan is to extract the TBM via a shaft on the south side of Eglinton Avenue, in the vicinity of Town Haven Place. The TBM is dismantled in the tunnel and taken out in sections, thus requiring a significantly smaller shaft relative to the launch shaft. The staging plans for the cut-and-cover section immediately east of Kennedy Station will incorporate final plans for the extraction shaft.

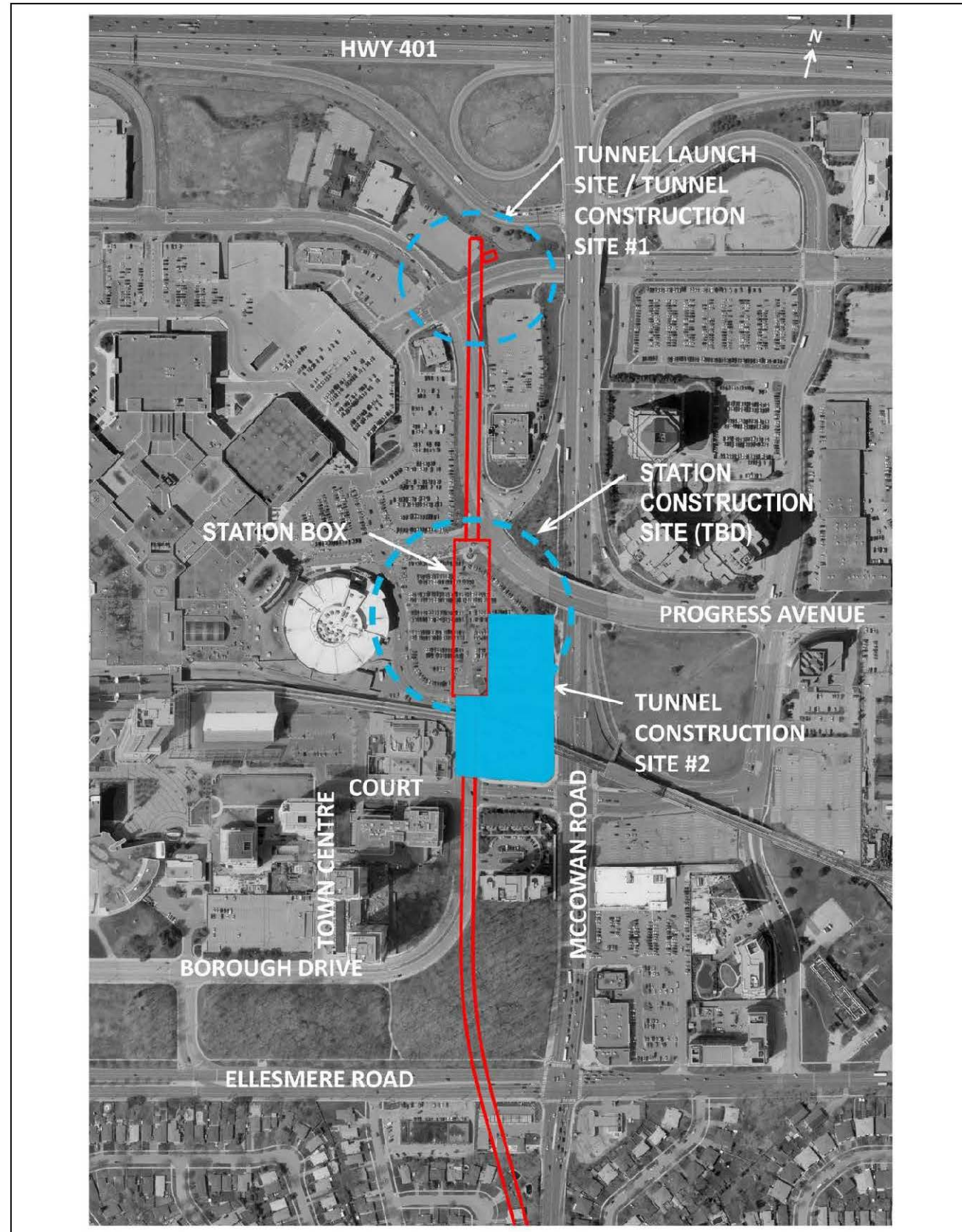
E.4.5.3 Cut-and-Cover Construction

For some portions of the subway line, excavation by a TBM is not practical or economical and cut-and-cover construction is necessary. The ground surface is opened (cut) to a sufficient depth to construct the subway tunnel structure and ancillary facilities. The sides of the excavation are usually supported by vertical temporary walls to minimize the volume of material excavated and to protect adjacent facilities and buildings. The walls require cross-bracing or tiebacks for support. Once the construction excavation is complete, the contractor builds the structure from the bottom to the top of the structure. Once the structure construction is complete, the remaining excavation is backfilled and the surface is reinstated. When construction is taking place within a roadway, decking is normally installed to allow the surface to be used for traffic while the construction activities are taking place below.

With reference to **Exhibit E4-4**, the conditions where cut-and cover construction is necessary in this Project are:

- Scarborough Centre Station – The large spans (station platform widths), relatively short lengths and complicated spatial arrangements normally preclude economical tunnelling (see **Exhibit E4-8**);
- EEBs and vent structures; and,
- The shallow section immediately east of Kennedy Station.

Exhibit E4-8: Proposed Tunnel Work Sites at Scarborough Town Centre



E.4.5.4 Staged Construction of the Bus Terminal

The existing Line 3 structure is an impediment to the completion of the new Scarborough Centre Station Bus Terminal. For this reason, the Bus Terminal must be constructed, and opened, in two separate phases:

- Phase 1:** The portion of the Bus Terminal that can be constructed with the Line 3 structure in place will be completed prior to the opening of the subway. Buses will have use of the existing bus terminal during this time. However, as a result of the construction activities around the station area, Triton Road will be closed west of McCowan – potentially for lengthy periods of time – and the majority of buses now using the Line 3 bus terminal will have to be rerouted to the Triton Road access at the Brimley Road side of Scarborough Town Centre mall.
- Phase 2:** Once the subway is opened, Line 3 and the existing Line 3 bus terminal will be closed and buses will be able to use the portion of the new Bus Terminal that was constructed during Phase 1. An interim plan will be developed for bus service to serve the new Scarborough Centre Station. This will involve using the partially-completed Bus terminal to the greatest extent possible, supplemented as necessary by temporary bus stops in the southbound bus-only right turn lane on McCowan Road at the station entrance and / or on the newly constructed Borough Drive.

Line 3, including the existing Line 3 station and bus terminal, will be demolished and the remainder of the Bus Terminal completed. The preliminary schedule for these activities suggests that the entire new Bus Terminal will be available 1.5 to 2 years after the subway is operational.

E.5. Environmental Impacts, Mitigation Measures and Monitoring

The environmental impacts for the Scarborough Subway Extension (SSE) are divided into the following categories:

- **Displacement of Existing Features by Project Facilities** – Permanent impacts to existing features located within the footprint of the Project that are physically altered to accommodate Project facilities.
- **Construction Impacts** – Temporary impacts, occurring only during construction activities.
- **Operations and Maintenance Impacts** – Ongoing and long-term impacts occurring during operations and maintenance activities.

Key impacts and mitigation measures associated with each of these categories are described below.

E.5.1 Displacement of Existing Features

- **Drainage and Hydrology** – The Project will impact existing storm sewers potentially requiring relocation or replacement. The extent of the potential impact and the required relocation / replacement will be identified during the Detailed Design Phase of the Project. The proposed station facilities and bus terminal will be constructed in already built up areas resulting in minor increases in impervious areas. To address impacts to surface water quality, quantity, water balance and erosion control, lot level controls will be implemented for Scarborough Centre Station and its associated facilities.
- **Terrestrial Ecosystems** – Potential impacts on vegetation will be mitigated to the extent possible through avoidance, minimizing the extent of vegetation removals, protecting existing vegetation and restoring vegetation that is removed.
- **Buildings and Property** – Thirty-eight (38) private properties will be permanently impacted, which includes the full acquisition of one entire commercial property and two private residences as well as 35 partial private property interests. In addition, six properties in public ownership are impacted and partial property interests will be required. In addition, temporary property requirements are necessary to facilitate construction. These requirements will be confirmed during the Detailed Design Phase of the Project. The City of Toronto will negotiate with the affected property owners for the Toronto Transit Commission (TTC) and provide compensation through either a negotiated agreement, or in the event that expropriation is required, in accordance with the *Ontario Expropriations Act*.
- **Urban Design** – The displacement of existing facilities and the addition of new transit facilities will alter the visual setting in which they are located. Particular attention will be paid to locating and screening of non-public station elements during the Detailed Design Phase of the Project to minimize impact on residential or commercial areas.

- **Cultural Environment – Archaeology** – Six areas along the SSE footprint were identified as having archaeological potential according to the results of the Stage 1 Archaeological Assessment. These areas will be subject to a Stage 2 Archaeological Assessment prior to construction, along with any further archaeological assessments as necessary.
- **Cultural Environment – Built Heritage and Cultural Heritage Landscapes** – Two properties that are Designated under Part IV of the *Ontario Heritage Act* are within 120 metres of the SSE footprint; 520 Progress Drive and 146 St. Andrews Road. However, these two resources are separated from the footprint by other buildings and landscape features; therefore, no direct or indirect impacts are expected.

E.5.2 Construction Impacts

The running structure through underground sections will be constructed by tunnelling methods. Scarborough Centre Station and special track work areas will be constructed by cut-and-cover method, for example, emergency exit buildings (EEBs), ventilation shafts, and traction power substations (TPSSs) will be constructed following standard at-surface construction methods with excavation activities for connection to the underground sections. In general, mitigation measures will include detailed engineering studies and ongoing management and monitoring of construction activities.

- **Terrain and Soils, Groundwater** – Impacts to groundwater, terrain and soils during construction include ground movement, settlement (and structural stress) due to tunnelling, dewatering and displacement of excavated materials. A soil and groundwater management strategy as well as a monitoring program for dewatering will be developed prior to construction. The tunnel will be constructed using an earth pressure balancing tunnel boring machine (TBM) and temporary dewatering will be minimized using water tight continuous support of excavation (e.g., caisson wall, slurry wall) as required. Where necessary, underpinning will be used to minimize the potential for building settlement / structural stress due to excavation, piling and dewatering.
- **Drainage and Hydrology** – Impacts to drainage and hydrology are expected for segments requiring cut-and-cover construction. The construction of the EEB at the north end of the Scarborough and Rouge Hospital will likely require the relocation of potential existing storm sewers and retention tanks and may pose temporary impacts to the West Highland Creek. Hydraulic analysis and modelling will be undertaken during the Detailed Design Phase of the Project to further refine controls. Erosion and sedimentation control measures will be implemented to prevent the potential migration of sediments off-site. Lot level controls will also be implemented for Scarborough Centre Station, the Bus Terminal and ancillary facilities associated with the tunnel.
- **Terrestrial Ecosystems** – Displacement of and disturbance to vegetation may occur during construction. A tree inventory will be undertaken during the Detailed Design Phase of the Project to document the impacts to trees within the cut-and-cover construction area. A Tree Preservation Plan will also be developed during the Detailed Design Phase of the Project to determine tree protection and mitigation.
- **Air Quality** – There is potential for temporary dust, Nitrogen Oxides and volatile organic compound emissions during construction affecting local air quality. Best management practices will be implemented to prevent the potential release of dust and other airborne pollutants off-site.

- **Noise and Vibration** – The existing high ambient sound levels are likely to reduce the significance of the noise during construction, although such noise will be clearly audible during peak periods of construction. Noise and vibration measures will be implemented to prevent potential disturbance from construction equipment and activities to nearby receptors.
- **Utilities** – Utilities such as municipal services (watermains, storm and sanitary sewers), Toronto Hydro, Enbridge Gas and telecommunications companies (Bell, Rogers, Zayo, Cogeco and Telus) will likely be impacted by cut-and-cover construction. Temporary support and protection of utilities will be sought where possible. For large utilities that cannot be temporarily supported, relocation of utilities may be required.
- **Automobile Traffic and Transit Services** – Traffic on Eglinton Avenue, Danforth Avenue and McCowan Road will experience additional delays and queues due to reduced lane availability for cut-and-cover construction. TTC bus services may be disrupted due to the reconfiguration of Triton Road access at McCowan Road. A Traffic Impact Study will be conducted during the Detailed Design Phase of the Project to analyze and address issues related to traffic and transit services during construction and operation of the Bus Terminal. Signage and traffic monitoring programs will be developed and temporary roadside stops will be implemented for affected bus routes.
- **Pedestrians and Cyclists** – Temporary disruptions to sidewalks near construction sites along Eglinton Avenue, Danforth Avenue and McCowan Road are expected. Signage and barriers will be implemented to provide physical separation from construction sites and to ensure pedestrian safety. Alternative routing and / or construction staging options will be employed to maintain pedestrian connections on major roads (Eglinton Avenue, Danforth Avenue, McCowan Road, and Progress Avenue).

have an unacceptable level of noise or vibration from the SSE. For the tunnel infrastructure, vibration isolation is achieved with a floating slab track system which mitigates the vibration and subsequent noise levels. Additionally, ancillary facilities will be designed with sound absorbent material to ensure sound emissions are acceptable. During the Detailed Design Phase of the Project, further detailed noise and vibration studies will be conducted for the Scarborough and Rouge Hospital and the houses on Stanwell Drive.

E.5.3 Operations and Maintenance Impacts

The top of the tunnel structure through underground sections will be about 9 metres below the surface at its most shallow point and 29 metres deep at its deepest point. Given the depth of the tunnel, the operation of the subway is expected to have negligible effects on existing land uses in the Study Area. Impacts during operation and maintenance are largely related to drainage and hydrology, air quality and noise. For these potential impacts, appropriate measures will be implemented to avoid, minimize or mitigate adverse effects to the extent possible.

- **Drainage and Hydrology** – There is potential for water quality to be impacted due to pollutant loading from the proposed driveways, bus bays and access roads. Lot level controls will be implemented to mitigate these impacts where possible.
- **Air Emissions** – Although no special consideration for air emissions generated by the Bus Terminal's operations are required, standard TTC operating policies and procedures with regard to idling buses will be applied for this Project.
- **Noise and Vibration** – Noise and vibrations are expected from subway movement and ancillary facilities such as TPSSs, EEBs and ventilation shafts. The initial impact assessment concluded that, by applying appropriate mitigation measures where needed, no locations are predicted to

E.6. Future Commitments

During pre-planning work, the City of Toronto and Toronto Transit Commission (TTC) have worked closely with key stakeholders to address and resolve any issues or concerns. Not all issues can be addressed within the context of a Transit Project Assessment Process since the design of the Scarborough Subway Extension (SSE) has been prepared to a conceptual level and further details are required to finalize property requirements, planning initiatives, construction issues, and permits and approvals. The following **Table E6-1** presents an overview of the proponent's commitments to future studies, permits and approvals during the Detailed Design Phase of the Project, construction and operations and maintenance.

Table E6-1: Future Commitments / Permits and Approvals

	Feature	Future Commitments / Permits and Approvals	Category D – Displacement C – Construction O – Operations & Maintenance
1.	Consultation	Develop a Communication Plan for the Design and construction phases of the Project. This will include a community relations program that will provide businesses, residents and commuters with regular Project information and responses to enquiries. In addition this will include ongoing engagement as required with Indigenous communities.	C
2.	Consultation	Create a Construction Liaison Committee made up of community stakeholders in order to respond to, proactively monitor and address construction issues.	C
3.	Consultation	Provide a Project Information Office that is open to the public. TTC Community Relations Officers will be on-hand during the week to speak to visitors and share information about the Project. The Project Information Office will also be used to hold meetings and workshops with stakeholders.	C
4.	Consultation	Consult with emergency service providers – fire, police and emergency medical services – to develop plans to maintain emergency access during construction.	C
5.	Consultation	Develop a communications plan / protocol to address any changes in TTC, GO Transit, Durham Region Transit (DRT) and intercity bus carriers during construction.	C
6.	Consultation	Conduct further consultation with emergency service providers on SSE facility design details (e.g., fire routes to stations).	O

Table E6-1: Future Commitments / Permits and Approvals

	Feature	Future Commitments / Permits and Approvals	Category D – Displacement C – Construction O – Operations & Maintenance
7.	Terrain and Soils	Prepare and implement a Soil and Groundwater Management Strategy, including: – Procedures for management and disposal of excavated materials, including excess soils and contaminated soils, in accordance with applicable environmental legislation, regulations and guidelines. – Identification of any possible artesian conditions. Develop water management strategies to handle artesian conditions – Water treatment methods, which results in discharge water quality complying with Toronto and Region Conservation Authority (TRCA) and City of Toronto Water guidelines and requirements; and,	C
8.	Terrain and Soils	Conduct Settlement Impact Assessment for SSE works including tunneling, Scarborough Centre Station, and EEB construction based on the results of the geotechnical and geo-environmental investigation program. Specifically, the assessment will address: – Tunnelling in the vicinity of Hydro One Networks Incorporated (HONI) Tower 41 (Gatineau Hydro Corridor); – Tunnelling under existing buildings and structures; – Cut-and-cover construction along the alignment; and, – Cut-and-cover construction for Scarborough Centre Station and the tunnel construction shaft in the vicinity of the Scarborough Rapid Transit (SRT) (Line 3).	C
9.	Terrain and Soils	Conduct Phase 1 and 2 Environmental Site Assessments, as applicable, prior to property acquisition.	C
10.	Groundwater	Obtain Permit to Take Water from Ministry of the Environment and Climate Change (MOECC) for locations where dewatering exceeds 50,000 litres per day.	C
11.	Groundwater	Obtain Discharge Permit or Discharge Agreement with the City of Toronto for dewatering during construction.	C
12.	Groundwater	Execute Industrial Waste Surcharge Agreement with City of Toronto, if water discharge to sanitary sewer exceeds City of Toronto Sanitary and Combined Sewer By-Law.	C

Table E6-1: Future Commitments / Permits and Approvals

	Feature	Future Commitments / Permits and Approvals	Category D – Displacement C – Construction O – Operations & Maintenance
13.	Drainage and Hydrology	Conduct Hydraulic Analysis and Modelling to define the level of impact on flow rates, runoff volumes, and water levels and velocities as a result of the above ground structures. Develop and implement a Stormwater Management Strategy based on Hydraulic Analysis and Modelling. The Stormwater Management Strategy will be designed to meet the TRCA Stormwater Management Criteria (2012).	D
14.	Drainage and Hydrology	Co-ordinate with the City of Toronto for ongoing City projects within the Bendale Branch of West Highland Creek.	C
15.	Drainage and Hydrology	Obtain permits and approvals in accordance with Ontario Regulation 166/06 (Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses) within TRCA-regulated areas (Bendale Branch of West Highland Creek).	C
16.	Drainage and Hydrology	Prepare an Environmental Management Plan for the construction of Emergency Exit Building (EEB) 5 to assess and address impacts such as impacts to nearby terrestrial features from construction and any dewatering impacts related to surface features such as fish and fish habitat.	C
17.	Drainage and Hydrology	Prepare an Erosion and Sediment Control (ESC) Plan, which complies with prevailing TRCA and City of Toronto guidelines and requirements.	C
18.	Fish and Fish Habitat	Prepare and submit a Request for Review by Fisheries and Oceans Canada (Note: the Project is not exempt from review under Fisheries and Oceans Canada self-assessment criteria) for the following locations where the preferred alignment crosses the below: – Tributary of Dorset Park Branch of West Highland Creek – Dorset Park Branch of West Highland Creek – Bendale Branch of West Highland Creek	D
19.	Terrestrial Ecosystems	Obtain the following permits from the City of Toronto in accordance with the City of Toronto Tree Protection Policy and Specifications for Construction Near Trees Guidelines: – Permit to Remove Healthy City-owned tree – Permit to Injure or Destroy Trees on Private Property	D
20.	Terrestrial Ecosystems	Determine, in consultation with City of Toronto, whether the Ravine and Natural Feature Protection By-law applies to this Project. Obtain a Ravine and Natural Feature Permit, as applicable, from the City of Toronto for the proposed EEB 5.	D

Table E6-1: Future Commitments / Permits and Approvals

	Feature	Future Commitments / Permits and Approvals	Category D – Displacement C – Construction O – Operations & Maintenance
21.	Terrestrial Ecosystems	If vegetation clearing is required during the nesting season (as defined under the <i>Migratory Birds Convention Act (MBCA)</i>), retain a qualified avian biologist to conduct a nesting survey. If active nests are found, prepare a site-specific mitigation plan in consultation with the Canadian Wildlife Service.	C
22.	Air Quality	Obtain Certificate of Approval for Air Quality, in accordance with the <i>Environmental Protection Act (EPA)</i> (through the MOECC), as required, for the Scarborough Centre Station Bus Terminal and ventilation structures.	O
23.	Noise and Vibration	Obtain Noise By-Law Exemption or Noise By-Law Amendment, if required, in accordance with City of Toronto By-Law requirements, for 24-hour tunnelling and other scheduled critical construction activities.	C
24.	Noise and Vibration	Conduct additional noise and vibration studies for construction sites located adjacent to sensitive uses (residential, Bendale Library and Scarborough and Rouge Hospital) which will be included in the overall Construction Noise and Vibration Management Plan.	C
25.	Noise and Vibration	Obtain MOECC Environmental Compliance Approvals for all relevant stationary noise sources such as Heating Ventilation and Air Conditioning (HVAC) equipment, ventilation shafts and transformers.	O
26.	Noise and Vibration	Conduct additional detailed noise and vibration studies verifying the impact of the subway, as required, to ensure that MOECC / TTC protocols are achieved. This involves site specific vibration measurements near the Scarborough and Rouge Hospital and Stanwell Drive that will validate analysis assumptions made in the noise and vibration impact assessment.	O
27.	Noise and Vibration	Undertake additional noise and vibration analysis during the Detailed Design Phase of the Project for the traction power substations (TPSSs) to determine impacts and the associated mitigation measures, if required.	O
28.	Utilities	Develop utility and municipal servicing relocation plans with service providers. Contact utility companies including Bell Canada, Rogers Communications Partnership, Cogeco Data Services, Zayo Group (formerly Allstream Inc.), Telus Communications Company, Enbridge Gas, Toronto Hydro Electric System Limited and the City of Toronto (watermains, stormwater and sanitary sewers) early during the Detailed Design Phase of the Project to confirm plant location and to discuss relocation strategies / cost sharing.	C

Table E6-1: Future Commitments / Permits and Approvals

	Feature	Future Commitments / Permits and Approvals	Category D – Displacement C – Construction O – Operations & Maintenance
29.	Utilities	Obtain the following permits and approvals from the City of Toronto or the MOECC: – Sewage Works Approval (Transfer of Review Program) – Environmental Compliance Approval Application - Sewage Works – Drinking Water Works Permits and Municipal Drinking Water Licenses – Sewer Use Permit for Discharge of Groundwater into Sanitary or Storm or Combined Sewer – Water and sewer connections Separate TRCA permits necessary for utility relocations may be required and will be sought from the TRCA.	C
30.	Buildings and Property	Obtain permits from the Ministry of Transportation (MTO), as applicable: – Encroachment Permit for Subway tail track structure (located within 14 metres of Highway 401); – Building and Land Use Permit for all above and below-grade subway structures located within 395 metres of the centreline of Highway 401; and, – Signs Permits for any temporary or permanent signs (including traffic control) within 400 metres of Highway 401.	D
31.	Buildings and Property	Obtain Permission to Enter Agreements with private and public property owners for pre-construction investigations, including the following specific permits: – Parks Access Permit from City of Toronto or access to the Frank Faubert woodlot and HONI Lands (Gatineau Hydro Corridor); – Licence of Land for Temporary Use and Access for access to HONI lands (Gatineau Hydro Corridor); and, – Encroachment Permit for access to MTO lands.	D
32.	Buildings and Property	Obtain demolition permits from the City of Toronto for demolition of buildings and structures.	D
33.	Buildings and Property	Conduct pre- and post-construction surveys for all utilities, buildings and structures within the zone of influence of SSE construction, and monitor as appropriate during construction.	C
34.	Buildings and Property	Obtain Building Permits and other related permits (e.g., Designated Structures Permit, Sign Permit / Sign Variance Permit, Site Services Permit, HVAC (Mechanical) Permit, Plumbing Permit, etc.) from the City of Toronto, as required for new structures, including Scarborough Centre Station and stand-alone support structures.	C

Table E6-1: Future Commitments / Permits and Approvals

	Feature	Future Commitments / Permits and Approvals	Category D – Displacement C – Construction O – Operations & Maintenance
35.	Buildings and Property	Undertake Designated Substances Surveys for any buildings or structures which require demolition.	D
36.	Buildings and Property	Confirm the design strategy for the Scarborough Centre Station and the associated Bus Terminal that will minimize, to the extent practical, negative impacts to private property as defined by existing planning policies and capital investment. This will include consideration of aspects such as accessibility to/from existing and planned public ROW, attempting to avoid / minimize impacts to frontage visibility and grading relationship with the adjacent public sidewalks, and minimizing as much as practical impacts on the development potential of adjacent lands.	C
37.	Urban Design	Prepare a Design Brief outlining the context and design parameters governing the SSE Project should be developed and submitted for City Planning approval to clarify/confirm expectation on emergency exits, traction power substations and the Scarborough Centre Station and bus terminal. The Design Brief should be developed in collaboration with the City Planning staff to ensure that the parameters comply with all applicable current City of Toronto planning and urban design policies and guidelines (City of Toronto Official Plan, Scarborough Secondary Plan, etc.) and the Transportation Services' current City standards applicable to streetscape elements within the public right-of-way (ROW) i.e., pedestrian and cycling facilities and street furniture.	D
38.	Urban Design	Comply with and obtain development approvals, permits and / or licenses through the City of Toronto standard Site Plan Approval process as applicable for all sites; to include but not limited to minor variances and zoning by-law amendments as identified through design development and preliminary and formal Site Plan Application submission.	D
39.	Archaeology	Conduct further archaeological assessments and secure Ministry of Tourism, Culture and Sport acceptance. All construction areas which were identified as having archaeological potential in the Stage 1 assessment will be cleared of archaeological finds prior to the commencement of construction.	D
40.	Transportation	Secure an Official Plan (OP) Amendment to modify Map 4 to designate the recommended SSE corridor as "Transit Corridor" in the City of Toronto OP.	D

Table E6-1: Future Commitments / Permits and Approvals

	Feature	Future Commitments / Permits and Approvals	Category D – Displacement C – Construction O – Operations & Maintenance
41.	Transportation	Obtain Highway Alteration By-Law approval from the City of Toronto, as applicable, for permanent alterations to municipal roads.	D
42.	Transportation	Conduct a separate study for the decommissioning of Line 3 (SRT) – from Kennedy Station to the McCowan Maintenance and Storage Facility, in accordance with the requirements of the <i>Ontario Environmental Assessment Act (Ontario EA Act)</i> .	D
43.	Transportation	Work with Metrolinx to refine the concept and future alignment of the Eglinton East Light Rail Transit (LRT) extension east of Kennedy Station in order to inform the Detailed Design of the SSE tunnel between Kennedy Station and Danforth Road.	D
44.	Transportation	Obtain the following City of Toronto permits for construction within the existing City of Toronto road allowances. – Road Cut Permit – Major Construction (Civil Works and Utility Relocations); and, – Street Occupation Permit.	C
45.	Transportation	Conduct a Traffic Impact Study and develop a Traffic Management Plan for construction to address the following: – Pedestrian, cyclist, and vehicular traffic bypasses around construction sites; – On-street and off-street parking; and, – Transit service reliability.	C
46.	Transportation	Co-ordinate with the MTO to confirm any current or planned MTO projects on Highway 401 in the vicinity of McCowan Road.	C
47.	Transportation	Conduct a study of the impact of bus operations associated with the new Scarborough Centre Station.	O
48.	Transportation	Conduct further discussions with Metrolinx to confirm approvals and monitoring requirements for construction adjacent to the GO Transit Rail Stouffville corridor. Secure Metrolinx approvals (e.g., Metrolinx Work Permit) in accordance with these discussions.	C
49.	Other	Prepare a monitoring plan in accordance with Subsection 9(2)(8) of Ontario Regulation 231/08 to verify the effectiveness of mitigation measures.	D / C / O

E.6.1 Environmental Project Report Addendum Process:

Ontario Regulation 231/08 includes an addendum process for proponents to make changes to a transit project after the Statement of Completion for the transit project is submitted. This addendum process is intended to address the possibility that in implementing a transit project, certain modifications may have to be made that are inconsistent with the Environmental Project Report.

The addendum must contain the following information:

- A description of the change.
- The reasons for the change.
- The proponent's assessment and evaluation of any impacts that the change might have on the environment.
- A description of any proposed measures for mitigating any negative impacts that the change might have on the environment.
- A statement of whether the proponent is of the opinion that the change is significant (or not), and the reasons for the opinion.

Changes to the SSE are anticipated to occur as the design is further refined during the next phase of the project. The determination of significance of these changes is the responsibility of the proponent. Should it be determined that the proposed change to the transit project is significant, then the proponent must follow the consultation process in accordance with Section 15 of the Ontario Regulation 231/08.

E.7. Consultation Process

E.7.1 Communication and Consultation Process

An extensive communication and consultation program was undertaken as part of the assessment to inform the community and seek feedback on various aspects of the study. The consultation program was initiated when the studies were based on a three-stop subway extension to Sheppard Avenue East.

In total, the consultation program comprises four formal rounds of communication and consultation - three as part of preliminary planning and one under the Transit Project Assessment Process (TPAP). Furthermore, there were a number of in-person and online tools and activities to make it easy for the community to get involved and provide feedback.

E.7.2 Consultation during the Preliminary Planning

E.7.2.1 Public Communication and Consultation

Public Meetings during the preliminary planning phase were held between January 2015 and June 2016.

- During the stage when the study was evaluating a three-stop subway extension to Sheppard Avenue East, two meetings were held in January and February of 2015 to introduce the Project and alternative corridor options and receive feedback on the Consultation Plan and Terms of Reference; a further eight public meetings were held in the month of June 2015 to gather feedback on the evaluation of those corridor options.
- In February and March of 2016 public meetings were held to provide an update on the changing transit planning landscape in Toronto and to introduce the optimized transit plan for Scarborough, including the express subway extension to Scarborough Centre.
- During May and June of 2016 five meetings were held to provide information and gather feedback on the evaluation results of the express subway to Scarborough Centre, including the preferred corridor and alignment.

All public meetings allowed the public to ask questions, and offered Discussion Guides for the public to offer their feedback at a time and in a manner most convenient to them.

E.7.2.1.1 Feedback Received from the General Public on the Proposed Express Subway

During the February / March 2016 consultations the express subway extension approach was introduced and triggered mixed reviews from the public. While some expressed support for the addition of the Eglinton East Light Rail Transit (LRT) to the plans, many expressed strong concerns about the removal of Lawrence Station (and access to Scarborough and Rouge Hospital) from the subway extension. These mixed reviews were reiterated during the second round of consultation which occurred in May / June 2016. During this round, the

preferred alignment was also introduced and potentially impacted properties were identified. Major concerns were expressed by specific property owners and from the Glen Anderson Community Association about the recommendation for an alignment that would be under 10 privately owned single family residential properties on Stanwell Drive, immediately south of Ellesmere Road. These concerns led to questions that allowed them to get a better understanding of why the McCowan Corridor was chosen as the preferred corridor.

E.7.2.2 Technical Advisory Committee

The Technical Advisory Committee (TAC) was established in the early stages of the preliminary planning phase to facilitate communication and consult on key recommendations between the Study Team and key stakeholders throughout the study. A total of eight TAC meetings were held between November 2014 and February 2017. Members of the TAC included representatives from a variety of departments within the City of Toronto, in addition to the Toronto Transit Commission (TTC), Metrolinx, Toronto Hydro, and the Toronto and Region Conservation Authority (TRCA).

E.7.2.3 Government Review Team

Government Review Team (GRT) meetings with key agencies were held throughout the preliminary planning phase to provide updates on Project status and to seek advice, comments and questions related to the Project. To date a total of two GRT meetings have been held.

E.7.2.4 Indigenous Engagement

Indigenous Communities within in the Study Area were engaged at key milestones throughout the Project. Notifications have been sent via email and registered mail to each community including the following:

- Mississauga's of the New Credit First Nation;
- Alderville First Nation*;
- Curve Lake First Nation*;
- Hiawatha First Nation*;
- Mississauga's of Scugog Island*;
- Kawartha Nishnawbe First Nation.

Note: * All correspondence was sent to the Williams Treaty First Nations Coordinator.

E.7.2.5 Stakeholder Advisory Group

A Stakeholder Advisory Group (SAG) was established to provide a forum for identified stakeholders to discuss opportunities, concerns, needs, issues and risks related to the Project.

In total, 33 organizations representing a broad range of stakeholder interests (community / neighbourhood, businesses, institutions, professional interests and transit-oriented groups) were invited to take part in the SAG.

A total of four SAG meetings and one Interactive Workshop were held between February 2015 and February 2017. The meetings were used to discuss the cost of construction impacts, development opportunities, concern for existing residents and opportunities to improve connectivity. The SAG meetings also provided insight on corridor options and allowed participants to ask questions and gain a deeper understanding of the decision-making process.

E.7.3 Consultation during the Transit Project Assessment Process

E.7.3.1 Notice of Commencement

The TPAP for the SSE commenced on April 27, 2017 with the publication of the Notice of Commencement. The Notice was distributed to all stakeholders, including the general public, property owners (within 60 metres of the Project), TAC members, GRT members and Indigenous communities, informing them of the start of the TPAP. This was communicated using a combination of media channels including email, direct mail, website posting and publications in newspapers. The Notice outlined the Project, next steps as per Ontario Regulation 231/08 including the 120-day TPAP consultation period and the process for participation. The Notice also invited all interested parties to a public meeting on May 10, 2017, two weeks following the commencement of the TPAP.

As with the preliminary planning period for the TPAP, the City continued to maintain communication through phone and email with all stakeholders. The SSE website (www.scarboroughsubwayextension.ca) continued to be a central location for hosting up-to-date Project information and materials, including the Draft Executive Summary of the Environmental Project Report (EPR), which was posted on the day of TPAP commencement.

E.7.3.2 Public Meeting

A public meeting during the TPAP was held on May 10, 2017, at the Scarborough Civic Centre from 6:30 p.m. to 8:30 p.m. The meeting provided an overview of the SSE, including Project updates from the last public meeting, a description of the TPAP, a list of potential impacts and proposed mitigation measures, and next steps in the process. A series of information display boards were presented and participants were provided an opportunity to speak one-on-one with the Study Team. A presentation was also given at 7:00 p.m. by the Study Team, after which attendees were given the opportunity to ask questions and provide feedback during a facilitated Question and Answer session.

E.7.3.3 Distribution of the Draft Environmental Project Report

In early-May 2017 (at the start of the 120-day consultation period of the TPAP), a copy of the Draft EPR, including the Executive Summary, was circulated for review and comment to TAC members, GRT members and Indigenous communities. These groups were provided with up to six weeks to provide feedback on the environmental assessment (EA) conducted for the SSE.

Early review of the Draft EPR and Executive Summary from these key groups ensured their feedback could be meaningfully sought and considered prior to finalizing the documents in preparation for the official 30-day review period mandated by Ontario Regulation 231/08. Upon receiving feedback from the TAC, GRT and Indigenous communities, the Study Team proceeded to review all comments and provide responses to them, some of which involved revisions to the EPR prior to finalization.

E.7.3.4 Individual Meetings with Key Stakeholders

The Study Team also held individual meetings with key agencies such as the Ministry of Environment and Climate Change (MOECC), TRCA and Ministry of Tourism, Culture and Sport (MTCS) during the 120-day consultation period for the TPAP. During these meetings, the Study Team answered questions and addressed concerns regarding the SSE, including responding to comments on the Draft EPR and Executive Summary.

E.7.3.4.1 Property Owner Meeting

A meeting was held on July 25, 2017, with invited members of the public living in the immediate vicinity of the planned location of TPSS 2, which will require acquisition of the residential properties at 1 and 3 Bellechasse Street. The purpose of the meeting was to explain the relocation of TPSS 2 which was initially planned to be located in the Hydro corridor. The meeting was chaired by Councillor De Baeremaeker and included presentations from TTC and IBI Group.

E.7.3.5 Notice of Completion and 30-Day Review Period

In accordance with Ontario Regulation 231/08, on August 24, 2017, upon completion of the EPR and within 120 days of the Notice of Commencement being issued, a Notice of Completion was issued to inform stakeholders of the SSE, regarding the availability of the EPR for review from August 24 to September 25, 2017. The EPR is being made available at several locations in hard-copy format and electronically on the SSE website (www.scarboroughsubwayextension.ca). These details together with the process for providing comments and provisions for submitting objections under Ontario Regulation 231/08, are also described in the Notice of Completion.

E.7.4 Commitment to Ongoing Engagement

The City of Toronto and TTC are committed to continued engagement with stakeholders beyond the TPAP, through the detailed design and construction phases of the SSE.