EX23.1

ATTACHMENT 2

City of Toronto & TTC

Draft
Executive Summary:
Scarborough Subway Extension Environmental Project Report

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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 aging Line 3 - the Scarborough Rapid Transit (SRT) facility. Most recently, at its meeting in July, 2016, City Council endorsed the option of replacing it 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 north-east, to its new terminus – Scarborough Centre Station.

As shown in Exhibit E1-1, the recommended 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. However, it shifts to west of McCowan Road for a short section north of Lawrence Avenue; it again veers west of McCowan 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 SRT stations.

E.1.2 Background

The critical problem affecting the existing SRT line 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 However, that particular vehicle is obsolete and the newer model that is available is too large for the existing facility and would require physical changes to the infrastructure, for example, the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 the Bloor-Danforth Subway (Line 2) from Kennedy Station into central Scarborough 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 account of recent changes to the transportation plans in the nearby Stouffville GO corridor - firm funding commitments for the GO Regional Express Rail (RER) program as well as plans for the City's SmartTrack program – as well as the announced delay in the implementation of the previously-approved Sheppard East Light Rail Transit (LRT).

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

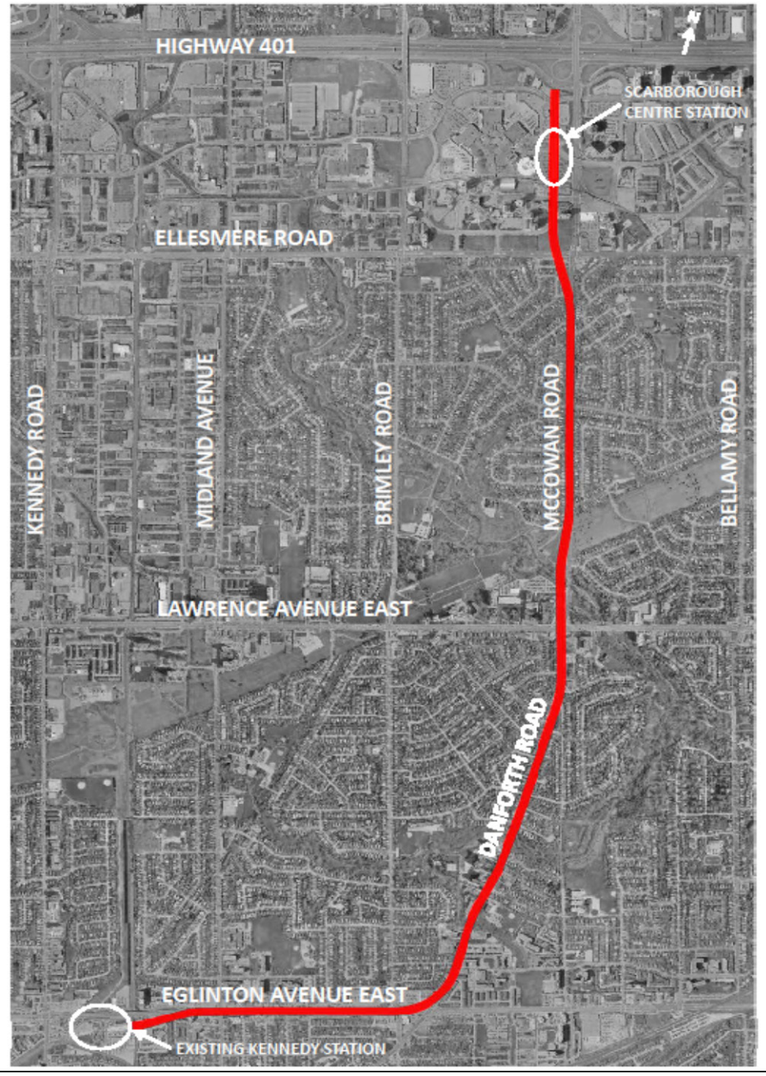
1. Support for the development of Scarborough Centre as a vibrant urban node; and
2. Support for the development of complete communities along the Avenues and improve local accessibility.

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 (Bloor-Danforth Subway) express to Scarborough Centre;
- An extension of Line 5 (Eglinton Crosstown LRT) to the University of Toronto, Scarborough Campus;
- SmartTrack stations at Lawrence Avenue East and Finch Avenue East; and
- A rapid transit solution on the Sheppard East corridor.

At its meeting in July, 2016, City Council endorsed the express subway extension of Line 2. This report deals solely with the express subway 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*. 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 subway extension project, the types of impacts that may be expected from the construction of, and ongoing operation and maintenance related to, this subway extension, and the manner in which those impacts will be mitigated, and monitored.

E.1.4 Study Area

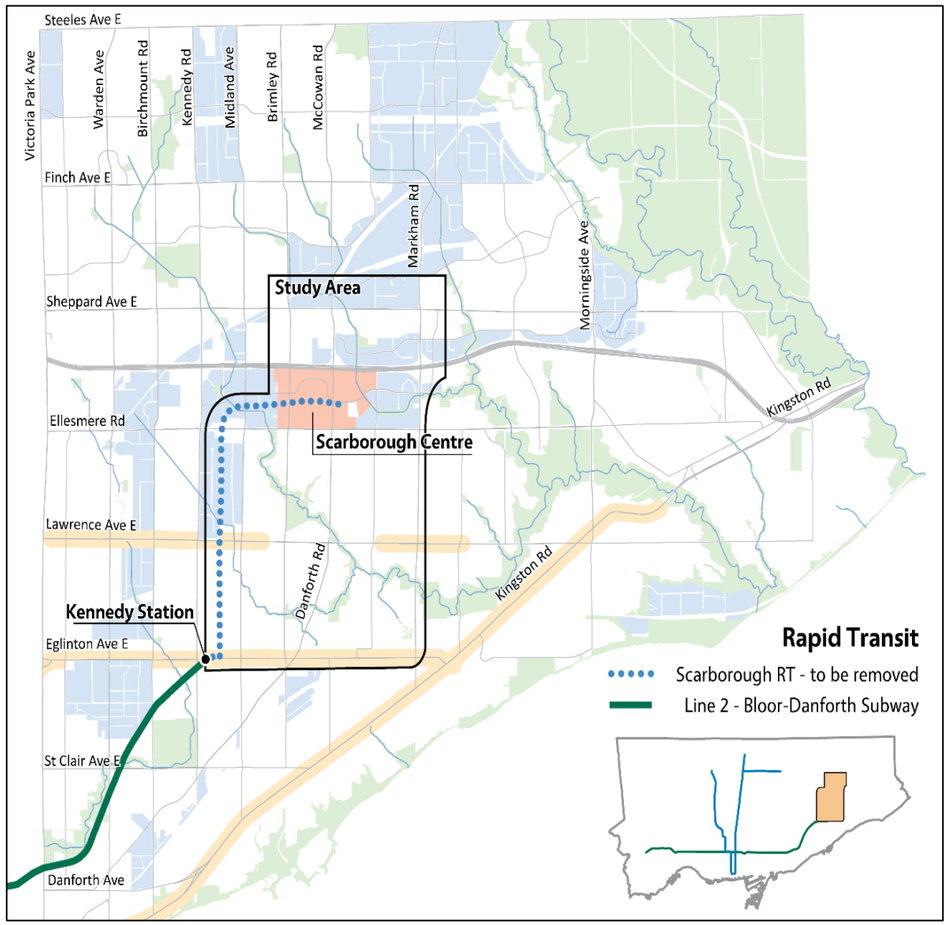
As shown in Exhibit E1-2, the Study Area is roughly bounded on the south by Eglinton Avenue East, Sheppard Avenue East on the north, on the west by the existing SRT line and Brimley Road once north of Ellesmere Avenue, and on the east by Markham Road/Progress Avenue.

E.1.5 Study Process – the Transit Project Assessment Process

The current study adheres to the Transit Project Assessment Process (TPAP), which satisfies Ontario's *Environmental Assessment Act*, 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 (6) 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 construction processes.

Exhibit E1-2: Study Area



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 Growth Plan for the Greater Golden Horseshoe, 2006

The Growth Plan for the Greater Golden Horseshoe (Growth Plan) was first adopted in 2006 and updated in 2016 after a comprehensive review of the policies. The Growth Plan identified a regional strategy for managing growth to ensure continued economic prosperity and a high quality of life in the Toronto region.

Key policies of the Growth Plan are related to the coordination of land use and transportation infrastructure, including the establishment of Urban Growth Centres (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/ha. 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.1.6.2 City of Toronto Official Plan

Providing convenient, high speed rapid transit connection to this urban growth centre is a key tenet of the City's Official Plan, to ensure Scarborough has the same degree of mobility opportunities that exist in other urban centres (such as North York and Yonge – Eglinton) and 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.1.6.3 Scarborough Centre Secondary Plan

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 the Scarborough Rapid Transit (SRT) line, 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 Official Plan strategy. Higher densities of both residential and employment land uses in specific locations within the Centre will increase ridership levels to help sustain the transit services, support future transportation improvements and further the City's goal of accommodating balanced growth at strategic locations within Toronto.

E.2. Existing and Future Environmental Conditions

Existing and future[1] conditions provide a baseline for the generation of alternatives, assessment of impacts and the identification of mitigation measures and monitoring needs. Existing and future conditions for the 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 m 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 km^2 in area, with over 75 km of watercourses. The 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 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 warm water and a migratory cold water 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 cold water thermal regime (based on water temperature) and East Highland Creek supports a warm water thermal regime (based on fish species present). The Dorset Park Branch, Bendale Branch, Markham Branch and Malvern Branch all support warm water 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 PM_{10}) and total suspended particulates (TSP). This is related to the fact that 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. However, at this time, for the worst case predicted scenario, the background contribution of contaminants that exists in this area results in a more significant impact on air quality than does the contribution from roadway traffic.

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 subway alignment. Depending upon the alignment chosen, these sensitive lands 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,

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

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.

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 and Rogers telecommunication lines, Enbridge gas lines, Sanitary Sewers, Storm Sewers, Combined Sewers, Watermains, Toronto Hydro and Hydro One 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 since 1968. The Centre (see the figure below) is the most important growth area for both employment and residential growth in eastern Toronto.

The Scarborough Town Centre (a regional mall surrounded by large format retail uses, restaurants and surface parking) dominates the Commercial Precinct in the middle of Scarborough Centre. 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 the area. 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.

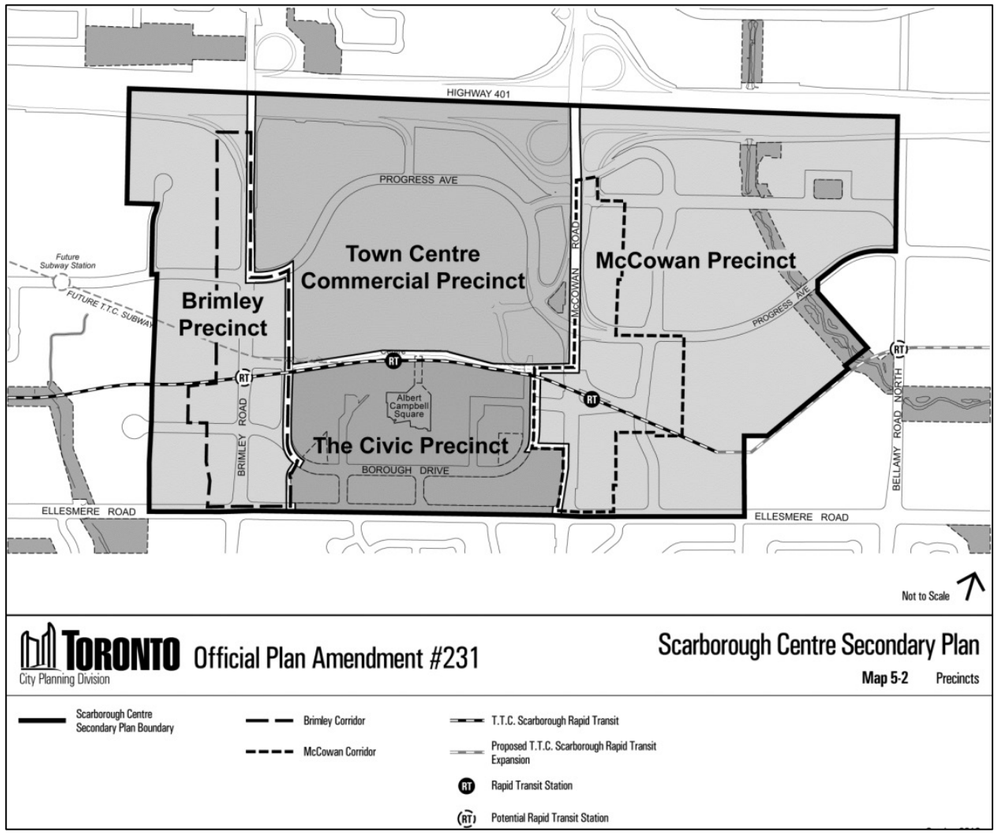
It is expected that the City of Toronto will continue to develop within study area in accordance with the designations within the Toronto Official Plan.

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. Based on available documentation and mapping, there are no designated or listed built heritage resources or cultural heritage landscapes within 100 metres of the recommended station location.

No major changes to the cultural environment are anticipated under future conditions.

Exhibit E2-1: Scarborough Centre – Official Plan



E.2.5 Transportation

A large number of Toronto Transit Commission (TTC) bus routes, the existing SRT, the Bloor-Danforth Subway (Line 2), GO Rail and GO Bus inter-regional services, private intercity bus services and freight rail operations are located within the study area.

In the future, it is expected that an LRT extension from Kennedy Station to the University of Toronto Scarborough Campus, 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 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 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 the existing and planned development within Scarborough Centre, including provisions for future extensions, ii) impacts to existing customers on Line 3 during construction, iii) property impacts and iv) costs

E.3.3 Preferred Subway Extension

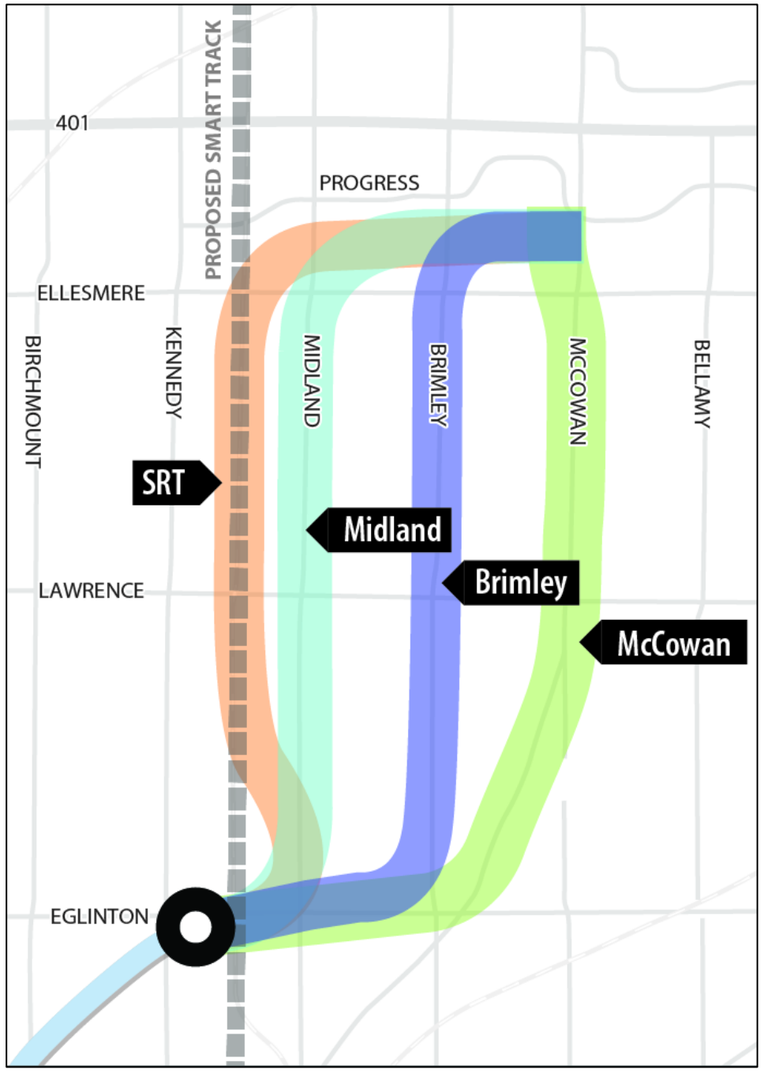
To identify the preferred corridor for the express subway between Kennedy Station and Scarborough Centre Station, the Study Team evaluated the following corridors as per City Council's direction in January 2016 (see Exhibit E3-1):

- SRT – Existing Line 3
- Midland
- Brimley
- 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 the existing SRT line 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 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 still satisfy the study objectives. One option that was carried forward for more detailed review was a modified alignment via Brimley – with the station located north of the SRT line, on an undeveloped site on the western edge of Scarborough Centre, just on the west side of the mall.. This alternative proved to have a lower capital cost than the McCowan option and, with the station removed from the existing SRT line, it would allow the SRT 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 alignment. Refer to Attachment 1, Initial Business Case for further detail.

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 km extension of the Bloor-Danforth Subway (Line 2) from Kennedy Station to Scarborough Centre, via Eglinton, Danforth and McCowan, 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 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 – while the construction staging plan that 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, the alignment runs west of the road ROW to north of the Highland Creek and 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 tunneling options resulted in the recommendation for use of a single, large diameter tunnel rather than the twin tunnel construction – two separate 6-metre diameter tunnels - traditionally used by the TTC. This results in reduced cost and reduced construction impacts because the special trackwork – crossovers and tail track - can be constructed within the tunnel as opposed to the cut-and-cover construction that would be required with twin tunnel construction. For more information on tunneling, 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 create room for a large centre platform as is the case when both the station and special trackwork 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.

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 inter-city carriers, and the introduction of service from Durham Rapid Transit (DRT).

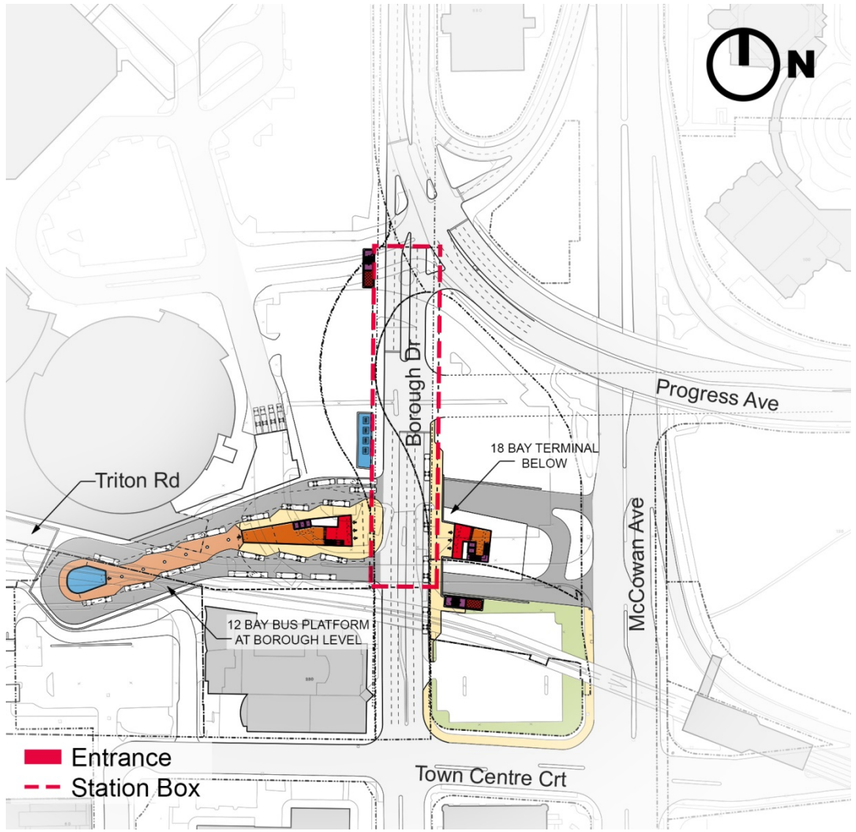
The terminal will require 34 bus bays, 9 of which will accommodate the longer articulated model of buses. This size of terminal provides:

- TTC – 24 bays, with 8 for articulated buses (using TTC Design Manual guidelines)
- GO Transit – 6 bays
- Durham Region Transit – 1 bay, articulated
- Inter-City Private Transit Services – 3 bays

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 the project objectives related to future development and potential improvements to the road network within Scarborough Centre. The base terminal concept is shown in Exhibit E4-1. The terminal concept shown has two levels. The lower level is in a widened Triton Road and would accommodate 18 bus bays at an elevation similar to McCowan Road. An upper level, at the Borough Drive elevation, would accommodate a further 12 bays and the four remaining bays would be provided on the east side of the new extension of Borough Drive. This road extension, already part of the City's plans for road improvements in this area, is required for this bus terminal and will be constructed as part of this project.

The bus terminal concept presented in this report will continue to be refined through the design process to a) reduce impacts to private property, b) reduce other impacts, and c) reduce costs.
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: Triton Road Bus Terminal



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 subway extension – 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.
2. Crossover tracks are included in front of (ie. 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 the 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 project contains a comprehensive fire life safety plan which includes mechanical fire ventilation using fans.

Ventilation shafts are required in the subway 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 at that location. Based on these initial studies, the at-grade footprint is in the order of 1,000 m^2. The at-grade footprint will be refined during detailed design.

Kennedy Station is slated for fire ventilation upgrades. It has been proposed to perform some or all of this work in concert with 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

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. Where feasible, they can also provide for co-location of emergency ventilation and secondary power sources. Each Emergency Exit building requires direct road access to the building by a fire pumper truck and two parking spaces for TTC maintenance purposes. The at-grade footprint of each Emergency Exit Building is approximately 30 m^2.

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

Eight Emergency Exit Buildings are required for the Scarborough Subway Extension, shown in Exhibit E4-2:

- Emergency Exit 1 – Eglinton Avenue East at Winter Avenue
- Emergency Exit 2 – Danforth Road at Eglinton Avenue East
- Emergency Exit 3 – Danforth Road at Savarin Street
- Emergency Exit 4 – Danforth Road at Barrymore Road
- Emergency Exit 5 – McCowan Road at Lawrence Avenue East

- Emergency Exit 6 – McCowan Road at Meldazy Drive
- Emergency Exit 7– McCowan Road at Hurley Crescent
- Emergency Exit 8 – Corporate Drive at Progress Avenue

The ventilation structure that is required midway along the alignment will be co-located with Emergency Exit Building 5.

Exhibit E4-2: Typical Emergency Exit

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 the 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 km apart. Since subway stations require power for lights and equipment, TTC usually locates the electrical substations near subway stations. Because the subway extension is 6.2 km long, this extension will require three substations at the following locations:

- Traction Power Substation 1 – Danforth Road at Eglinton Avenue
- Traction Power Substation 2 – Gatineau Hydro Corridor
- Traction Power Substation 3 – located at Scarborough Centre Station.

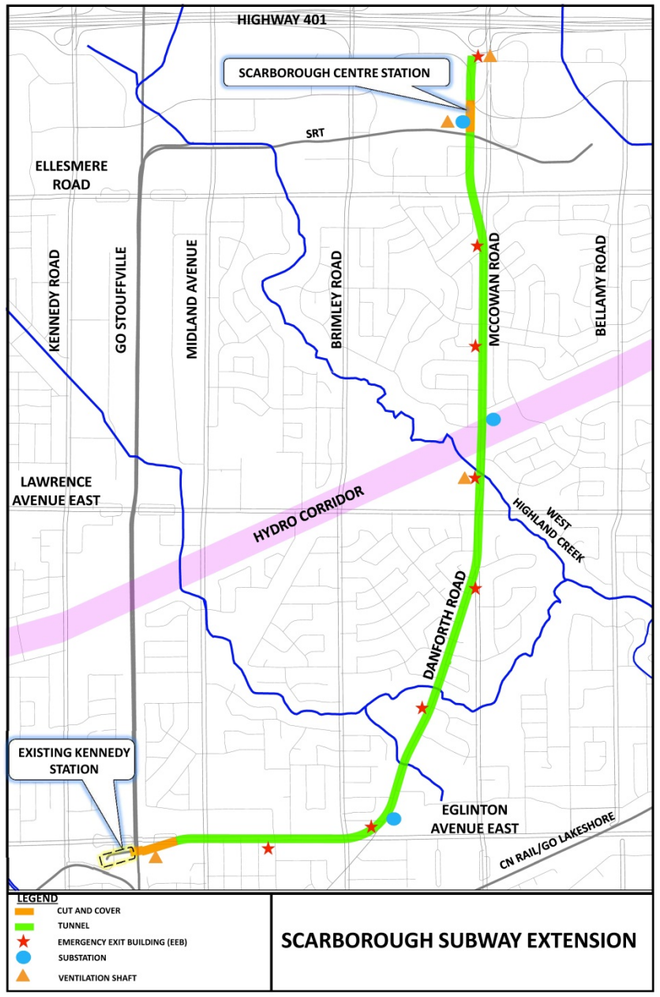
In addition to traction power equipment, the mid-tunnel Traction Power Substations will also house communications and subway signaling equipment rooms.

The order-of-magnitude surface footprint of Traction Power Stations 1 and 2 are 1,000 m^2.

Exhibit E4-3: Traction Power Substation
Don Mills Station

Exhibit E4-4: Traction Power Substation
Aerial View

Exhibit E4-5: Alignment showing locations of Emergency Exits and Ventilation structures



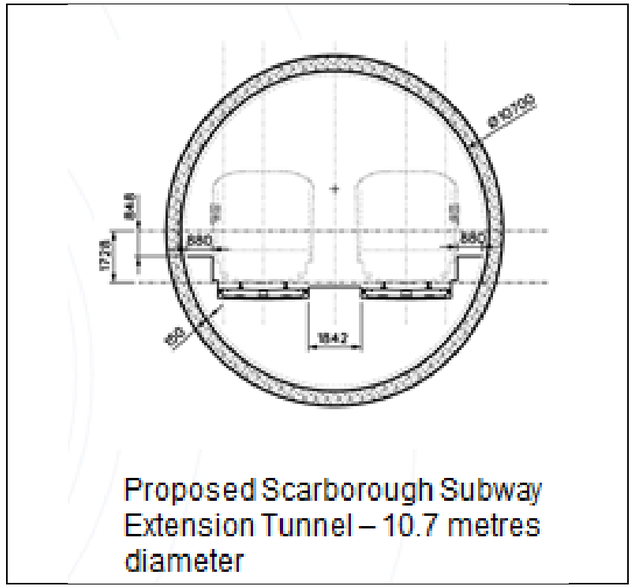
E.4.5 Construction Approach

E.4.5.1 Tunnelled Sections

Tunnelling is the method of construction for the majority of the recommended subway extension. Tunnelling uses a Tunnel Boring Machine (TBM) to excavate a tunnel, 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, tunnelling techniques in Toronto 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 set of tracks within a single tunnel. This approach also 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 – a significant reduction in construction impact. The single tunnel would also be less costly to construct.

Exhibit E4-6: Single Large Diameter Tunnel

Vancouver Evergreen Line, Tunnel Boring Machine "Alice" – 10 metres diameter



The tunnel boring machine would be 'launched' in the area shown in Exhibit E4-7. This requires a very large excavation, roughly 90 metres in length and 20 metres in width. The tunnel boring machine would proceed south, past the station location; the primary tunnel work site would be established immediately south of the station box and existing SRT 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 m^2 (1 ha) and will be in operation for the majority of the duration of the construction.

The tunnel boring machine launch site must act as a temporary work site until the tunnel boring machine reaches the primary work site, south of the 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 tunnel boring machine via a shaft on the south side of Eglinton Avenue, in the vicinity of Town Haven Place. The tunnel boring machine 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.4.5.2 Cut-and-Cover Construction

For some site-specific sections 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) a sufficient depth to construct the subway tunnel structure. The sides of the excavation are usually supported by vertical temporary walls to minimize the volume of material excavated and to protect adjacent areas. 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 the 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.

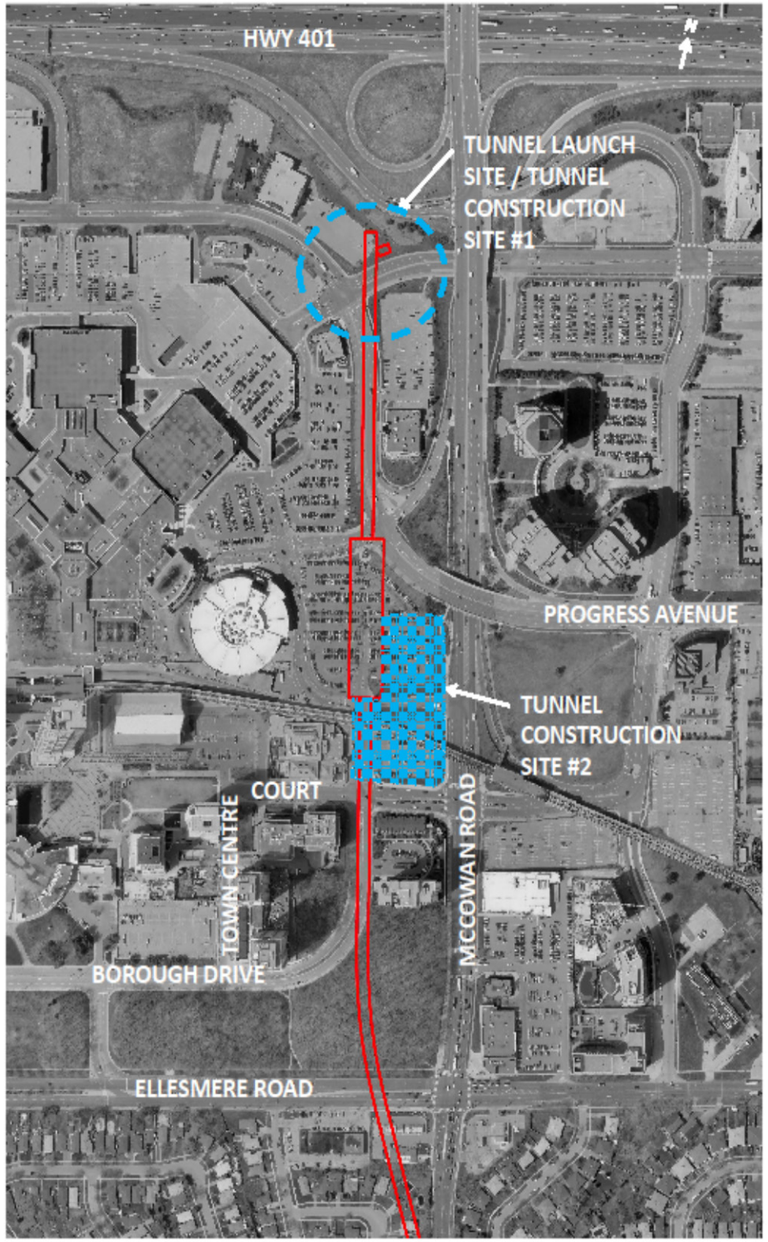
With reference to Exhibit E4-5, the conditions where cut-and cover construction is necessary in this project are:

- Station – The large spans (station platform widths), relatively short lengths and complicated spatial arrangements normally preclude economical tunnelling.
- Emergency Exits and vent structures
- The shallow section immediately east of Kennedy Station.

E.4.5.3 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 the station to occur at the same time as the majority of the tunnel construction is taking place.

Exhibit E4-7: Proposed Tunnel Work Sites at Scarborough Town Centre



E.4.5.4 Staged Construction of the Bus Terminal

The existing SRT structure is an impediment to the completion of the new 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 SRT 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 SRT bus terminal will have to be rerouted to the Triton Road access at the Brimley Road side of the mall.

Phase 2: ... Once the subway is opened, the SRT and existing SRT bus terminal will be closed and buses will be able to use that 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 subway 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.

The SRT, including the existing SRT 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 Project are categorized as follows:

- **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 in the subsequent detailed design phase.
- **Drainage and Hydrology** – 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 the proposed subway 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-six private properties are permanently impacted, which includes the full acquisition of one entire commercial property and thirty-five partial private property interests. Six properties in public ownership are also impacted and property interests will be required. In addition, temporary property requirements are necessary to facilitate construction. These requirements will be confirmed during the detail design phase. The City of Toronto will negotiate with the affected property owners for TTC and provide compensation through either a negotiated agreement, or in the event that expropriation is required, in accordance with the *Ontario Expropriations Act*.
- **Aesthetics** – 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 detail design phase to minimize impact on residential or commercial areas.

E.5.2 Construction Impacts

The running structure through underground sections will be constructed by tunnelling methods. The Station and special track work areas will be constructed by cut-and-cover method, for example, emergency exit buildings, ventilation shafts, and traction power substations 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 tunnelling boring machine 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 emergency exit building at the north end of the Scarborough 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 detail design 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 the proposed station, bus terminal and ancillary facilities associated with the tunnel.
- **Terrestrial Ecosystems** – Displacement and disturbance to vegetation may occur during construction. A tree inventory will be undertaken during the detail design phase to document the impacts to trees within the cut and cover construction area. A Tree Preservation Plan will also be developed 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 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, Progress Avenue).

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 more 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 effect 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.
- **Air Emissions** – Although no special consideration for air emissions generated by bus terminal operations is required, standard TTC operating policies and procedures with regard to idling buses will be applied to this Project.
- **Noise and Vibration** – Noise and vibrations are expected from subway movement and ancillary facilities such as traction power substations, emergency exit buildings and ventilation shafts. The initial impact assessment concluded that, in applying appropriate mitigation measures at appropriate places, there will be no location predicted where the proposed subway extension would create an unacceptable level of noise or vibration. 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 design, further detailed noise and vibration studies will be conducted for the Scarborough and Rouge Hospital and the houses on Stanwell Drive.

E.6. Future Commitments

During pre-planning work, the City of Toronto and 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 since the design of the 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 detail design, construction and operations and maintenance. The category column below corresponds with the associated impact that the future commitment was identified under.

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 communications plans and a public consultation 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 respond to enquiries.	**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 Centre that is open to the public. TTC Community Liaison Officers will be on-hand during the week to speak to visitors and share information about the project. The Project Information Centre 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 Transit and inter-regional bus carriers during construction.	**C**
6.	**Consultation**	Conduct further consultations with emergency service providers on Scarborough Subway Extension facility design details (e.g., Fire routes to stations).	**O**
7.	**Terrain and Soils**	Prepare and implement a Soil and Groundwater Management Strategy, including: –Water treatment methods, which results in discharge water quality complying with prevailing Toronto Regional Conservation Authority (TRCA) and City of Toronto water guidelines and requirements; and, –Procedures for management and disposal of excavated materials, including excess soils and contaminated soils, in accordance with applicable environmental legislation, regulations and guidelines.	**C**
8.	**Terrain and Soils**	Conduct Phase 1 and 2 Environmental Site Assessments, as applicable, prior to property acquisition.	**C**
9.	**Groundwater**	Obtain Permit to Take Water from Ministry of the Environment and Climate Change Ontario, (MOECC) for locations where dewatering exceeds 50,000 litres per day.	**C**
10.	**Groundwater**	Obtain Discharge Permit or Discharge Agreement with the City of Toronto for dewatering during construction.	**C**
11.	**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**
12.	**Drainage and Hydrology**	Conduct Hydraulic Analysis and Modelling to define the level of impacts 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 assessment. The Stormwater Management Strategy will be designed to meet the TRCA Stormwater Management Criteria (2012).	**D**
13.	**Drainage and Hydrology**	Co-ordinate with the City of Toronto for ongoing City Projects within the Bendale Branch of Highland Creek.	**C**
14.	**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 Highland Creek).	**C**
15.	**Drainage and Hydrology**	Prepare an Environmental Management Plan for the construction of Emergency Exit #5 to assess and address impacts such as nearby terrestrial features from construction, any dewatering concerns that could relate to dewatering impacts to surface features such as fish and fish habitat.	**C**
16.	**Drainage and**	Prepare an Erosion and Sedimentation Control Plan, which	**C**

Table E6-1: Future Commitments / Permits and Approvals

	Feature	Future Commitments / Permits and Approvals	Category *D – Displacement* *C – Construction* *O – Operations & Maintenance*
	Hydrology	complies with prevailing TRCA and City of Toronto guidelines and requirements.	
17.	**Fish and Fish Habitat**	Prepare and submit a Request for Review by Fisheries and Oceans Canada (Note: project is not exempt from review under Fisheries and Oceans Canada self-assessment criteria) for the following locations where the subway alignment crosses below: – Tributary of Dorset Park Branch of West Highland Creek – Dorset Park Branch of West Highland Creek – Bendale Branch of West Highland Creek	**D**
18.	**Terrestrial Ecosystems**	Obtain the following permits from the City of Toronto in accordance with the Tree Protection By-law: – Permit to Remove Healthy City-owned tree – Permit to Injure or Destroy Trees on Private Property	**D**
19.	**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 Emergency Exit 5.	**D**
20.	**Terrestrial Ecosystems**	If vegetation clearing is required during the nesting season (as defined under the *Migratory Birds Convention Act*), 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**
21.	**Air Quality**	Obtain Certificate of Approval for Air Quality, in accordance with the Environmental Protection Act (through MOECC), as required, for the Scarborough Centre Station bus terminal and ventilation structures.	**O**
22.	**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 schedule critical construction activities.	**C**
23.	**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).	**C**
24.	**Noise and Vibration**	Obtain MOECC Environmental Compliance Approvals for all relevant stationary noise sources such as HVAC equipment, ventilation shafts and transformers.	**O**
25.	**Noise and Vibration**	Conduct additional detailed noise and vibration studies verifying the impact of the subway, as required, in order to ensure that MOECC/ TTC protocols are achieved. This involves site specific	**O**

Table E6-1: Future Commitments / Permits and Approvals

	Feature	Future Commitments / Permits and Approvals	Category *D – Displacement* *C – Construction* *O – Operations & Maintenance*
		vibration measurements near the Scarborough and Rouge Hospital and Stanwell Drive that will validate analysis assumptions made in the noise and vibration impact assessment.	
26.	**Noise and Vibration**	Undertake additional noise and vibration analysis during detailed design for the traction power substations to determine impacts and the associated mitigation measures, if required.	**O**
27.	**Utilities**	Develop utility and municipal servicing relocation plans with service providers. Contact utility companies (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 design to confirm plant location and discuss relocation strategies / cost sharing.	**C**
28.	**Utilities**	Obtain the following permits and approvals from the City of Toronto or 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	**C**
29.	**Buildings and Property**	Conduct further discussions with Hydro One to confirm the technical criteria for locating a traction power substation in the Gatineau Hydro Corridor.	**D**
30.	**Buildings and Property**	Assist in an Infrastructure Ontario Class Environmental Assessment for the Gatineau Hydro Corridor lands.	**D**
31.	**Buildings and Property**	Obtain permits from the Ministry of Transportation (MTO), as applicable, –Encroachment Permit for Subway tailtrack 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 Signs Permits for any temporary or permanent signs (including traffic control) within 400 metres of Highway 401.	**D**
32.	**Buildings and**	Obtain Permission to Enter Agreements with private and public	**D**

Table E6-1: Future Commitments / Permits and Approvals

	Feature	Future Commitments / Permits and Approvals	Category *D – Displacement* *C – Construction* *O – Operations & Maintenance*
	Property	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 Hydro One Lands (Gatineau Hydro Corridor) – Notice of Entry Permit for access to Hydro One lands (Gatineau Hydro Corridor) – Encroachment Permit for access to Ministry of Transportation (MTO) lands	
33.	**Buildings and Property**	Obtain demolition permits from the City of Toronto for demolition of buildings and structures.	**D**
34.	**Buildings and Property**	Conduct pre- and post-construction surveys for all utilities, buildings and structures within the zone of influence of subway construction, and monitor as appropriate during construction.	**C**
35.	**Buildings and Property**	Conduct Settlement Impacts Assessment for the tunnelling and Scarborough Centre Station 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 Tower 41 (Gatineau Hydro Corridor) – Tunnelling under existing buildings and structures – Cut and cover construction for Scarborough Centre Station and the tunnel construction shaft in the vicinity of the Scarborough RT	**C**
36.	**Buildings and Property**	Obtain Building Permits and other related permits (e.g., Designated Structures Permit, Sign Permit/ Sign Variance Permit, Site Services Permit, Heating, Ventilation, Air Conditioning (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**
37.	**Buildings and Property**	Undertake Designated Substances Surveys for any buildings or structures which require demolition.	**C**
38.	**Buildings and Property**	Refine design of Scarborough Centre Station and the associated bus terminal to minimize impact to private property, impact to local streets envisioned by existing planning policies and capital costs.	**C**
39.	**Buildings and Property**	Work with the City of Toronto to ensure that the design and disposition of the various functional elements of the Scarborough Centre Subway Station including, but not limited to, the station	**D**

Table E6-1: Future Commitments / Permits and Approvals

	Feature	Future Commitments / Permits and Approvals	Category *D – Displacement* *C – Construction* *O – Operations & Maintenance*
		entrances, bus terminal, emergency exit buildings, ventilation structures, power substations, and other at-grade building services installations on the station site and/or along the subway alignment comply with current City of Toronto planning and urban design policies and guidelines and the Transportation Services current City standards applicable to streetscape elements within the public right-of-way i.e. pedestrian and cycling facilities and street furniture. A Design Brief outlining the Scarborough Subway Extension alignment and station site context is to be provided to clarify and guide the building and site design and development expectations. A context responsive system-wide building and site design and development approach is to be provided for individual and/or consolidated emergency exit, ventilation and power substation buildings anticipated to be located at intervals along the subway alignment between the Kennedy and Scarborough Centre stations.	
40.	**Buildings and Property**	Comply with and obtain development approvals, permits and/or licenses through the City of Toronto standard Site Plan Application process as applicable for all station sites; to include but not limited to minor variances and zoning by-law amendments as identified through the design development and preliminary and formal Site Plan Application submission.	**D**
41.	**Archaeology**	Conduct Stage II Archaeological Assessment and secure Ministry of Tourism and Culture Sign-off in areas where ground disturbance will occur during construction and which will have archaeological potential.	**D**
42.	**Built Heritage Resources and Cultural Heritage Landscapes**	Conduct a Heritage Impact Assessment for Scott House (520 Progress Avenue) and implement findings and recommendations during construction (in the vicinity of 520 Progress Avenue).	**C**
43.	**Automobile Traffic and Transit Services**	Secure an Official Plan Amendment to modify Map 4 to designate the recommended Scarborough Subway Extension corridor as “Transit Corridor” in the City of Toronto Official Plan.	**D**
44.	**Automobile Traffic and Transit Services**	Obtain Highway Alteration By-Law approval from the City of Toronto, as applicable, for permanent alterations to municipal roads.	**D**
45.	**Automobile Traffic and Transit Services**	Conduct a separate study for the decommissioning of the Scarborough RT – from Kennedy Station to the McCowan	**D**

Table E6-1: Future Commitments / Permits and Approvals

	Feature	Future Commitments / Permits and Approvals	Category *D – Displacement* *C – Construction* *O – Operations & Maintenance*
		Maintenance and Storage Facility, in accordance with the requirements of the Ontario Environmental Assessment Act.	
46.	**Automobile Traffic and Transit Services**	Work with Metrolinx to refine the concept and future alignment of the Eglinton East LRT extension east of Kennedy Station in order to inform the detail design of the SSE tunnel between Kennedy Station and Danforth Road.	**D**
47.	**Automobile Traffic and Transit Services**	Obtain the following permits City of Toronto for construction within the existing City of Toronto road allowances. –Road Cut Permit – Major Construction (Civil Works and Utility Relocations) Street Occupation Permit	**C**
48.	**Automobile Traffic and Transit Services**	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 Transit service reliability.	**C**
49.	**Automobile Traffic and Transit Services**	Co-ordinate with the Ministry of Transportation (MTO) for any MTO projects on Highway 401 in the vicinity of McCowan Road.	**C**
50.	**Automobile Traffic and Transit Services**	Conduct a traffic, bus operations, and parking impact study for the new Scarborough Centre Station.	**O**
51.	**Rail**	Conduct further discussions with Metrolinx to confirm approvals and monitoring requirement for construction adjacent to the GO Rail Stouffville corridor. Secure Metrolinx approvals (e.g., Metrolinx Work Permit) in accordance with these discussions.	**C**
52.	**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:

The TTC will prepare an addendum to the Environmental Project Report if significant changes to the project occur after the Notice of Completion is issued. This will be done in accordance with Section 15 of the Ontario Regulation 231/08. Steps to complete the Addendum will include:

1. Preparation of an Addendum to the Environmental Project Report
2. Preparation of a Notice of Addendum to the Environmental Project Report; and
3. Distribution of the Notice of Addendum to relevant stakeholders, the public and the MOECC.

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 the preliminary planning and one under the 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 four 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 matter most convenient to them.

E.7.2.2 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 LRT to the plans, many expressed strong concerns about the removal of the Lawrence Station (and access to Scarborough General 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 subway 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 to allow them a better understanding of why the McCowan corridor was chosen as the preferred alignment.

E.7.2.3 Technical Advisory Committee (TAC)

The TAC was established in the early stages of the preliminary planning phase in order to facilitate communication and consult on key recommendations between the Study Team and key stakeholders throughout the study. A total of seven 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 TTC, Metrolinx, Toronto Hydro, and the Toronto Region Conservation Authority.

E.7.2.4 Government Review Team (GRT)

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

E.7.2.5 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.
- Kawartha Nishnawbe First Nation
- Mississauga's of Scugog Island
- Williams Treaties First Nation

No comments or concerns have been received on this matter

E.7.2.6 Stakeholder Advisory Group (SAG)

A 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.

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

E.7.3 [Placeholder for TPAP Consultation]

[The results of the consultation that will take place during TPAP will be summarised here]