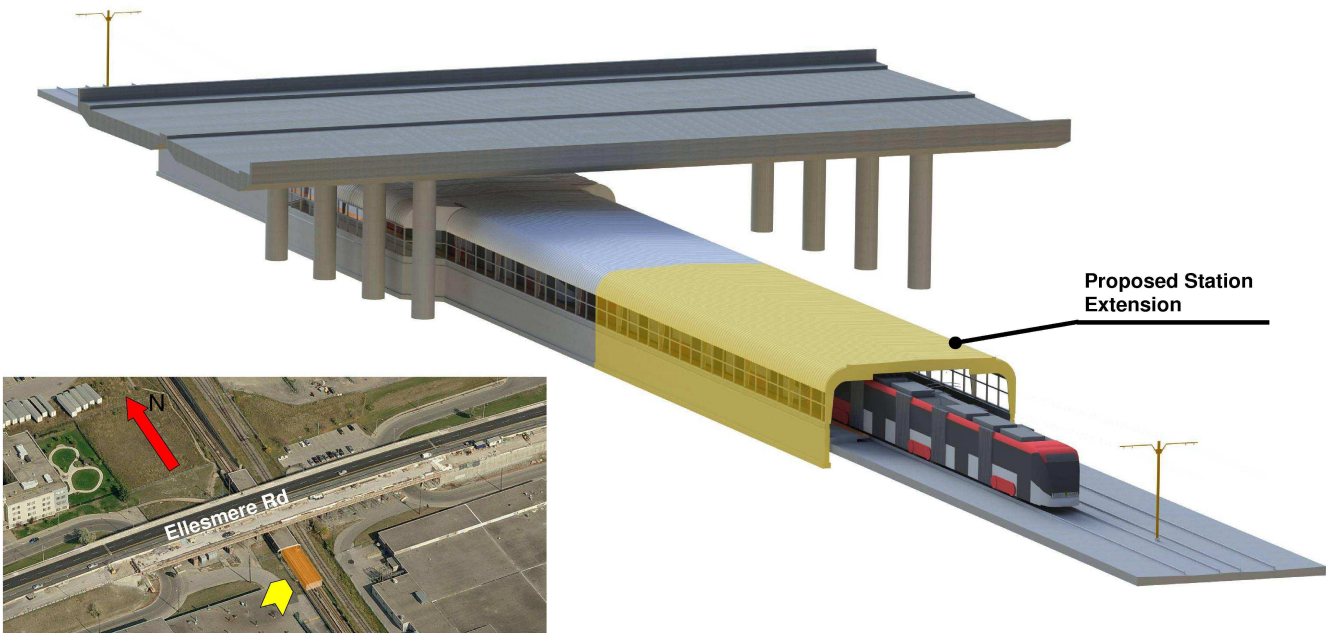


2.4.4 Ellesmere Station

Ellesmere Station is an at-grade station located under Ellesmere Road, east of Kennedy Road and west of Midland Avenue. A transfer is required to connect to surface bus routes. Parking is available at this station. The Preferred Plan is shown schematically, below in Exhibit 2-45. Conceptual design drawings are shown in plate: CON-A-301 to CON-A-304.

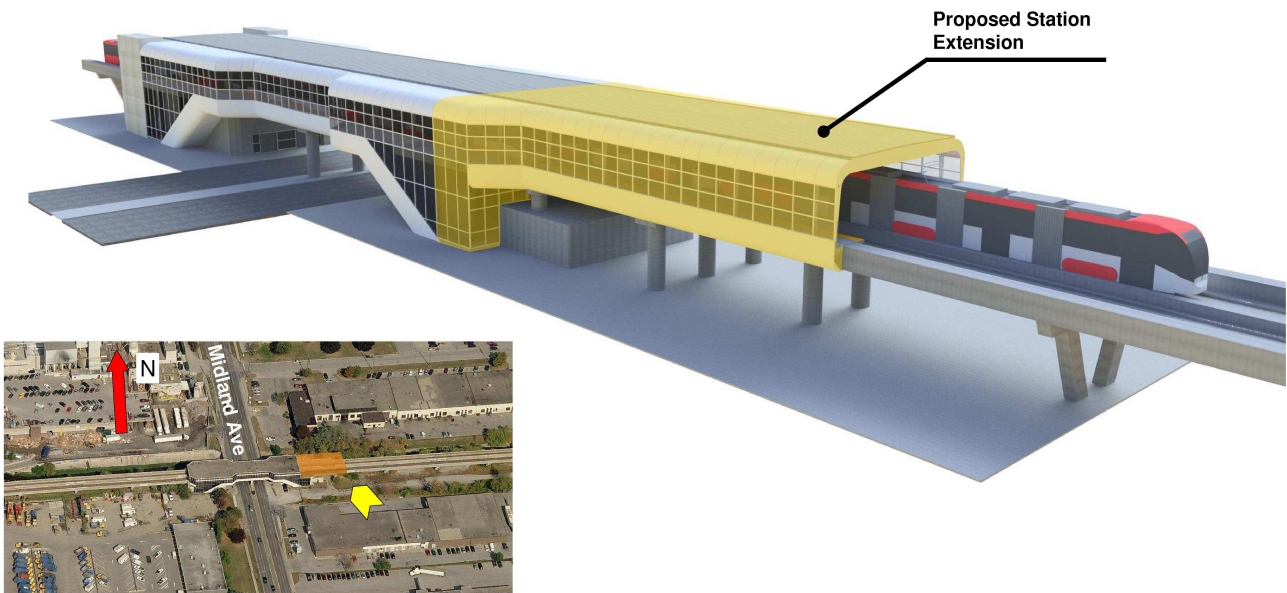
Exhibit 2-45: Ellesmere Station Extension



2.4.5 Midland Station

Midland Station is an elevated station located above Midland Avenue, south of Progress Avenue and north of Ellesmere Road. The Preferred Plan is shown schematically below in Exhibit 2-46. Conceptual design drawings are shown in plate: CON-A-501 to CON-A-503.

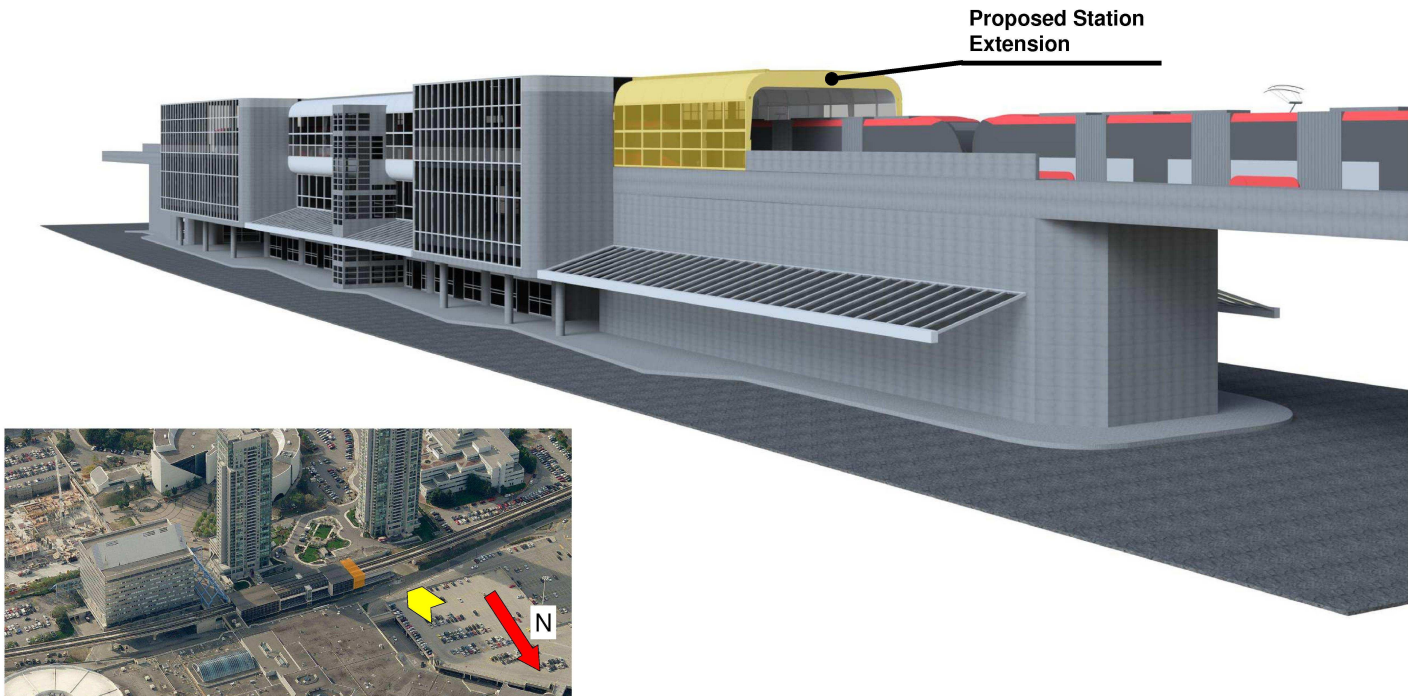
Exhibit 2-46: Midland Station



2.4.6 Scarborough Centre Station

Scarborough Centre Station is an elevated station located at Scarborough Town Centre. It provides a connection to GO Transit buses and has TTC bus facilities. The Preferred Plan is shown schematically below in Exhibit 2-47. Conceptual design drawings are shown in plate: CON-A-601 to CON-A-604.

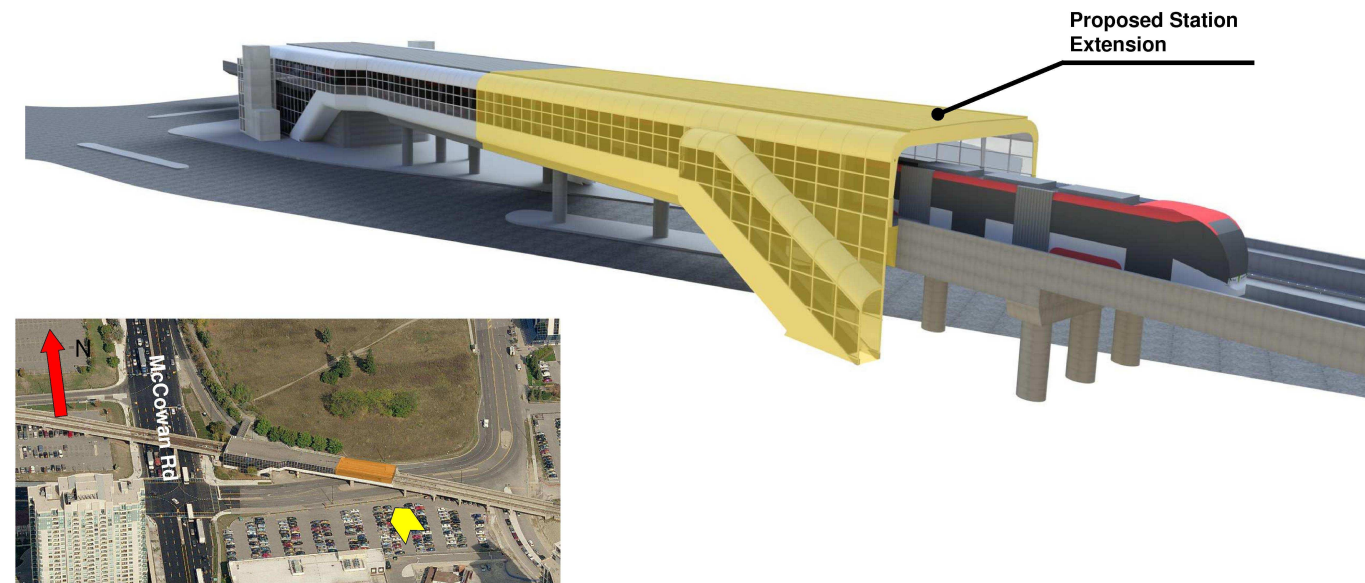
Exhibit 2-47: Scarborough Centre Station



2.4.7 McCowan Station

McCowan Station is an elevated station located east of McCowan Road, north of Ellesmere Road. The Preferred Plan is shown schematically below in Exhibit 2-48. Conceptual design drawings are shown in plate: CON-A-701 to CON-A-704.

Exhibit 2-48: McCowan Station





**2.4.8 Centennial College Station**

Centennial College Station is located on Progress Avenue, between Highway 401 and Markham Road, across from Centennial College. Drawings of Centennial College Station can be found in Drawing Numbers EXT-A-201 to EXT-A-203) and it is illustrated in Exhibit 2-49.

**Exhibit 2-49: Centennial College Station**



The proposed SRT station is located east and north of the Markham Road and Progress Avenue intersection, along the west side of Progress Avenue. Centennial College Campus is bisected by Progress Avenue; the teaching facilities on the east side and the residences on the west side. The College is currently undertaking a Master Plan study in order to determine how and where expansion on this site should occur in the future. TTC will continue to work with Centennial College through their planning exercise and TTC’s SRT design exercise.

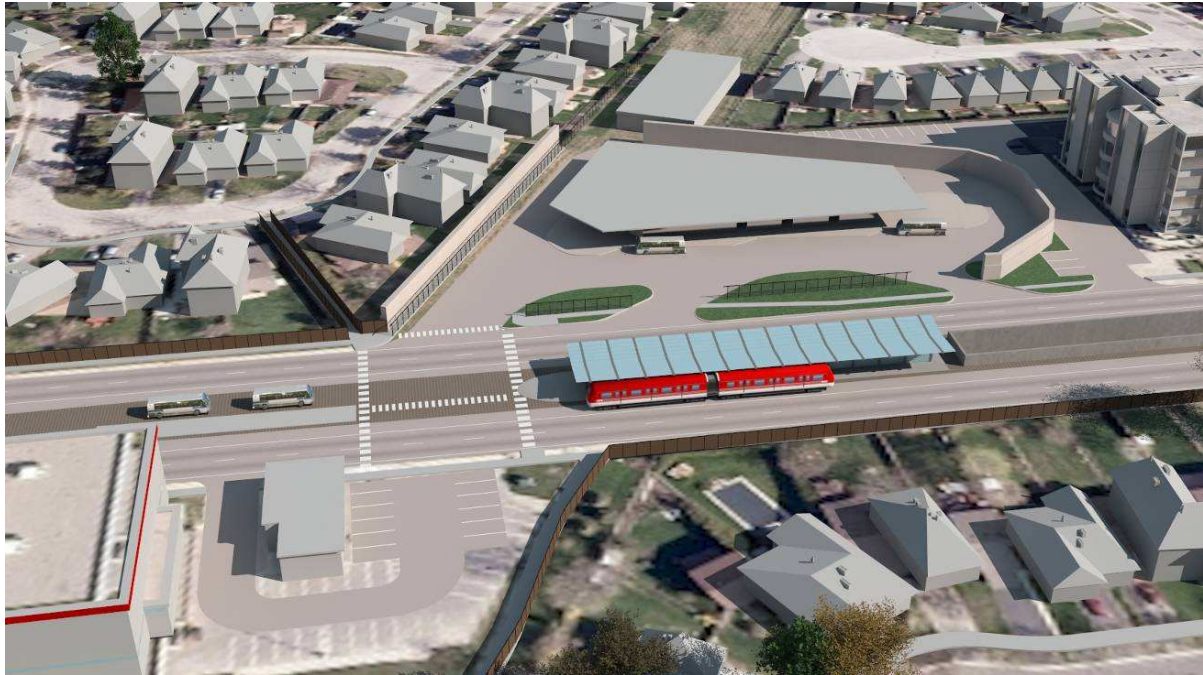
The preferred SRT alignment dictates that the proposed SRT platform be located on the west side of Progress Avenue. The majority of the students / pedestrians would cross Progress at grade using the existing signalized intersection at the campus main entrance.

Additional bus bays would be added to Progress Avenue as TTC will redirect buses from the immediate area onto Progress Avenue, in order to give transit riders an opportunity to transfer to/from the SRT. The locations of the bus bays are illustrated on plate EXT-A-201. Passengers transferring to/from buses would enter/exit the Centennial College Station through the main entrance at the south limit of the station.

**2.4.9 Sheppard East Station**

Sheppard East Station is underground across Sheppard Avenue, between Progress Avenue and Gateforth Drive. Drawings of Sheppard Station can be found in plates: EXT-A-301 to EXT-A-304 and it is illustrated below.

**Exhibit 2-50: Sheppard East Station**



Pedestrian access to the station would be via an entrance on the south side of the street, or via the Sheppard East LRT platform, located in the middle of Sheppard Avenue. Stairs, escalators and elevators will provide access to/from platform. An electrical substation would be located north of the station, adjacent to the bus terminal. Fare collection would occur on the concourse level.



2.4.10 Phase 2 - Malvern Town Centre Station

Malvern Town Centre is located between Neilson Road, Tapscott Road and McLevin Road. Drawings of Malvern Town Centre Station can be found in plates: EXT-A-401 to EXT-A-403, and it is illustrated below.

Exhibit 2-51: Malvern Station Concept



The station would be situated at the intersection of McLevin Road and Tapscott Road to allow for a tail track and a future SRT extension to the north and east. The SRT primary entrance would be located at the east end of the platform. An 11-bay bus terminal is proposed south of the station. The bus terminal elevation would be about 2m below the sidewalk elevation, thus defining it as a fare paid area by grade change. This grading strategy for the bus terminal is intended to minimize visual and noise impact to the townhouses across from the bus terminal on the north side of McLevin Avenue, allow for adequate headroom for the concourse level and to provide passive enforcement of the fare paid nature of the bus terminal. At the east end, the concourse level would facilitate passenger access from the primary entrance to the bus terminal and at the west end the concourse level would facilitate passenger access to the bus terminal. A Passenger Pick-up and Drop-Off facility for 20 cars is proposed north of the primary entrance.

2.4.11 Future Development Driven Stations

In order to support the City of Toronto's long term plan to intensify the Scarborough City Centre, special provisions are to be made in the running structure that would allow stations to be added at a later date, when funding becomes available and transit supportive development is identified for the area. These stations are:

- Bellamy Station: Bellamy Station is located above Bellamy Road, between Progress Avenue and Ellesmere Road. The conceptual design drawings are shown in plates: EXT-A-102 to EXT-A-103.
- Brimley Station: Brimley Station is located above Brimley Road in the area of the existing guideway between Midland Station and Scarborough Centre Station. Conceptual design drawings are shown in plates: CON-A-401 to CON-A-402.

2.4.12 Ancillary Features

Other buildings and features that are not related to passenger service but are vital to the operations of the line would also be required as part of this project.

2.4.12.1 Special Trackwork

Special trackwork is required at six locations along the line to allow a change in direction of SRT vehicles or storage of an SRT vehicle. The special trackwork is located at:

- Kennedy Station,
- McCowan Station,
- Bellamy Road,
- Sheppard Avenue,
- Non-Revenue service connection at Sheppard, and
- Malvern Town Centre.

All but the service connection special trackwork comprise a series of switches within the right-of-way that allows trains to reverse direction, either at the end of the line or for short turning activities.

2.4.12.2 Service Connection

A non-revenue service connection is required to transfer SRT vehicles between the Sheppard East Maintenance and Storage Facility and the SRT. All vehicles would move via Sheppard Avenue which would not require any changes to the alignment or running structure in comparison to what was approved as part of the Sheppard East LRT Class EA.

The service connection will consist of a single track in a dedicated right-of-way that connects from the centre of Sheppard Avenue to the tail tracks north of the Sheppard East station. As part of Phase 2 a



connection to the south will be added. To access the Sheppard East Maintenance and Storage Facility, SRT vehicles will operate on Sheppard East LRT tracks between Gateforth Avenue and Conlins Road.

The service connection will include a portal in between the mainline tracks for the Sheppard East LRT. Due to geometric constraints, the portal will be situated within the Sheppard / Gateforth intersection. As a result, the Gateforth intersection signals will be removed and operations will be limited to right-in / right-out.

The service connection is used periodically in the following manner:

- From approximately 4:45am to 6:15am up to 17 trains will enter the portal to access the mainline tracks for the SRT (underground);
- During the day, a small number of trains will enter and leave the service connection as trains are taken in and out of service around rush hours; and
- From approximately 1:45am to 2:45am up to 11 trains remaining on the line will reverse the process of the morning.

The timing of the operation of the non-revenue service connection may be subject to change.

***2.4.12.3 Tunnel Pumping Stations***

As the proposed tunnel is lower than any available sewer, pumping stations would be required to drain the lowest point within the tunnels at Sheppard East and Kennedy Stations. Based on the current design, these would be located at the East Highland Creek crossing (near Mammoth Hall Trail), the west end of the SRT loop at Kennedy Station, and near Kennedy Road above the EC LRT alignment. The pumping stations would comprise a small building at the surface that would house the mechanical and electrical equipment for the pumping system.

***2.4.12.4 Emergency Exit Buildings***

Emergency Exit Buildings (EEBs) extend from the underground tunnel to grade and are designed to provide an emergency exit for passengers and an emergency access for firefighting crews. An underground station, such as what is proposed at Sheppard Avenue, can serve as a means of underground egress. At-grade, the structures are approximately 3 metres in height and 10 square metres in area, as illustrated in Exhibit 2-52.

**Exhibit 2-52: Typical Emergency Exit Building – Sheppard Subway**



The SRT alignment includes an underground section of approximately 1.6 km (for Phases 1 and 2 combined). Based on the current preliminary design, the distance from the south portal to the south limit of the Sheppard Station is approximately 630 metres and therefore an EEB will not be required.

The preliminary distance from the north limit of Sheppard Station to the north portal (Phase 2) is approximately 820 metres. Because this distance exceeds the maximum allowable distance between emergency exits, potential locations for an EEB were explored. The possible location is in the corridor at Greenspire Road or in the corridor at Mammoth Hall Trail.

Given the need for a pumping station in the vicinity of Mammoth Hall Trail, the pumping station and EEB could be combined into a single building.

The final need will be determined during the design phase. TTC will include reporting of the recommended location and design to the public at an upcoming commission meeting during the design phase as part of the Site Plan approval process.

***2.4.12.5 Traction Power Substations***

Electrical power is required to operate lights, equipment and safety systems associated with the stations. Electrical power is also required to power the trains themselves (referred to as traction power). The connections between TTC's traction power system and Toronto Hydro's power distribution grid occur in facilities that are referred to as electrical substations. These substations contain transformers, switches and