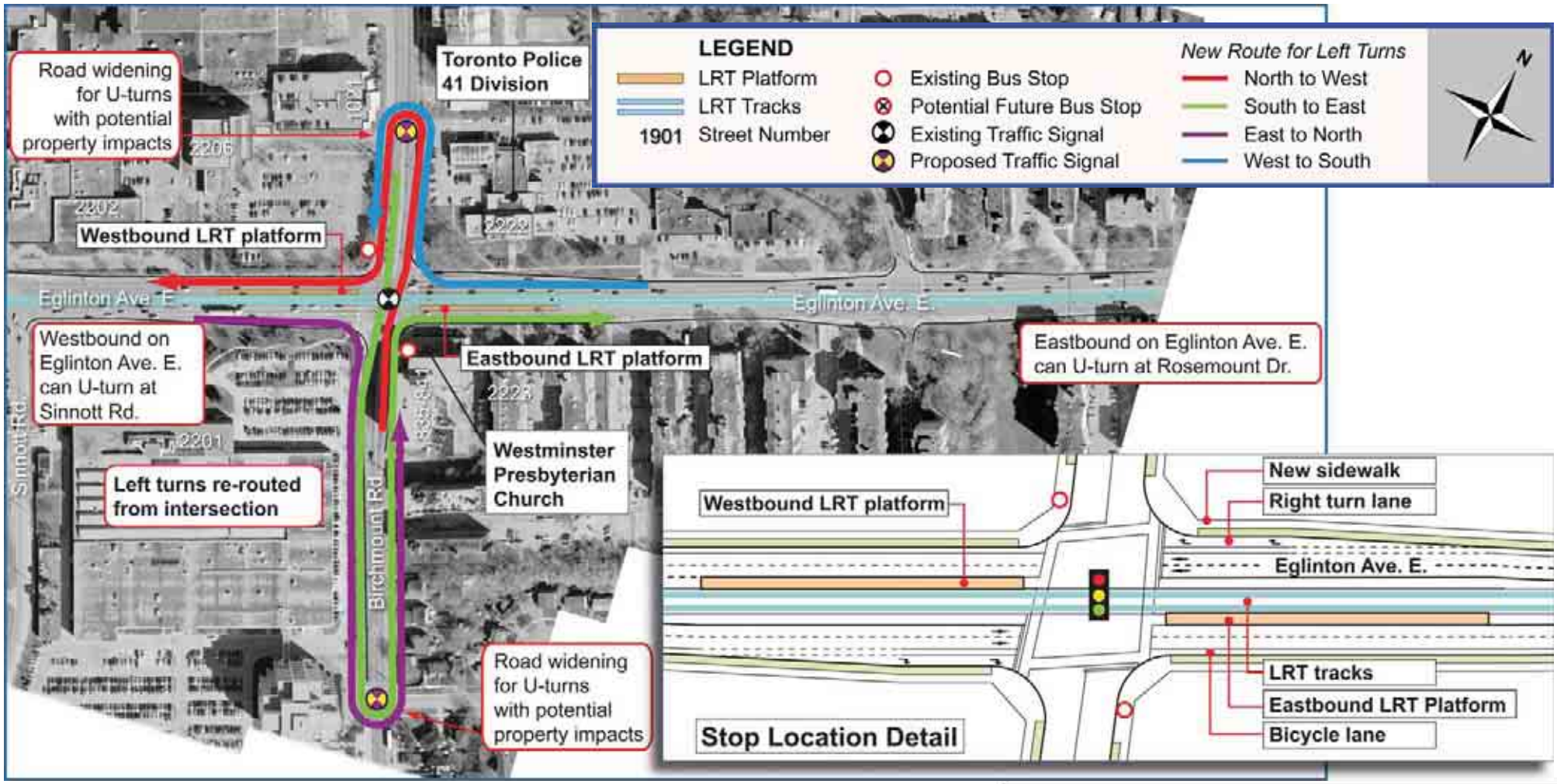
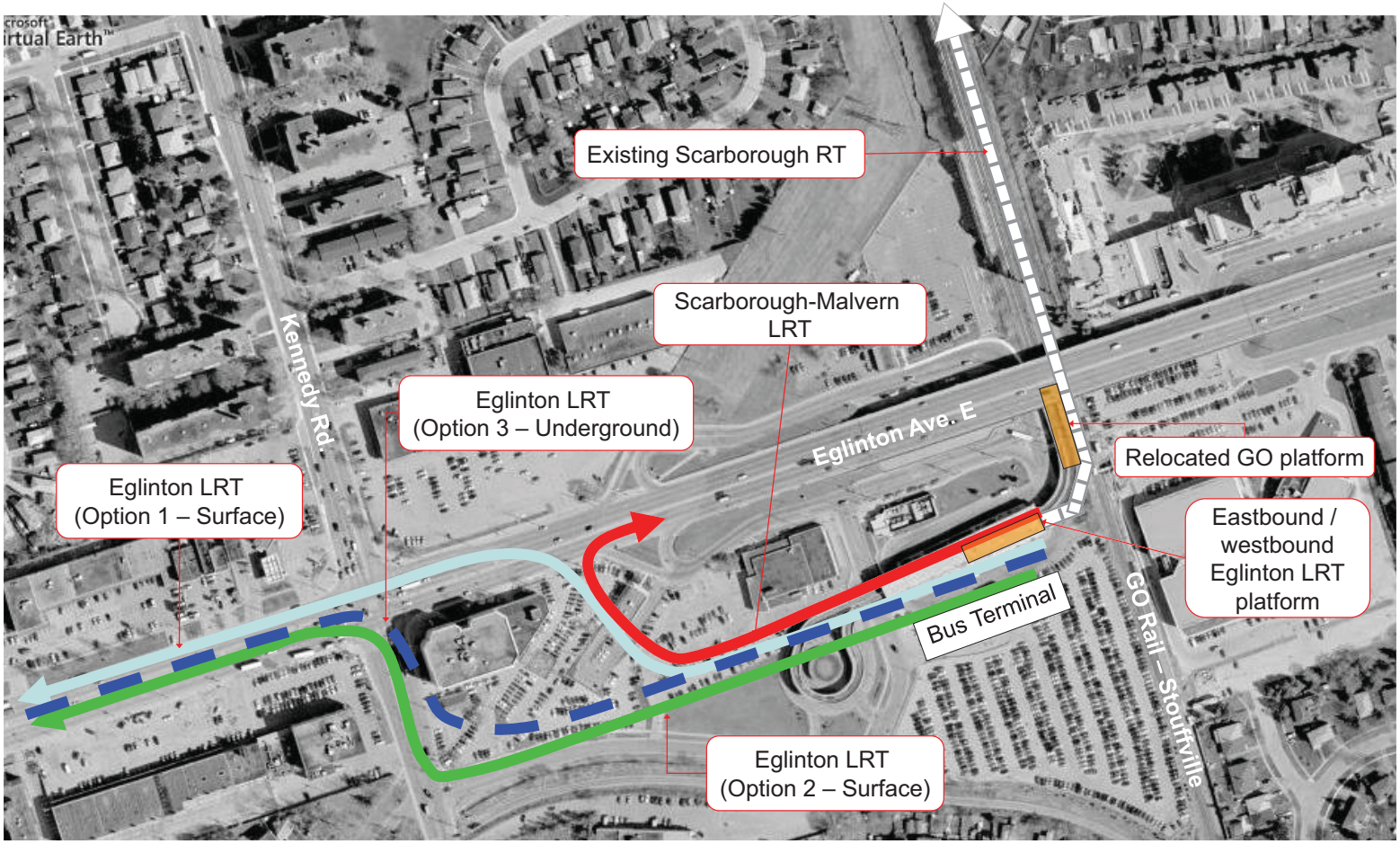
Birchmount Stop



Kennedy Station



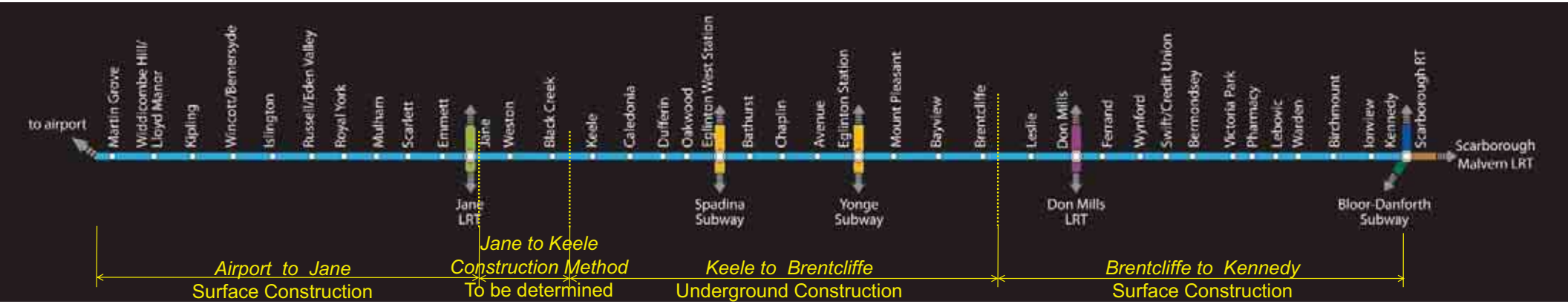
Drawing not to scale.

LEGEND

- LRT Platform
- Eglinton Crosstown LRT (Option 1 – Surface)
- Eglinton Crosstown LRT (Option 2 – Surface)
- Eglinton Crosstown LRT (Option 3 –Underground)
- Scarborough-Malvern LRT
- Existing Scarborough RT

N

Construction Methods - Overview



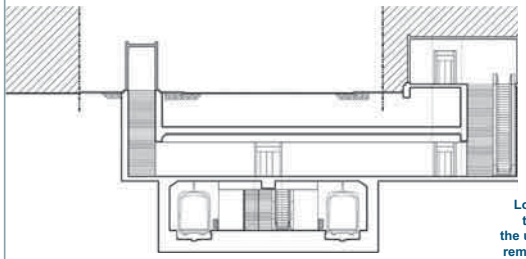
Surface Construction

Surface Section

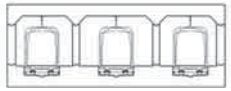
Underground Construction: Tunnel Boring

Tunnel Section

Underground Construction: Cut and Cover



Station Cross Section



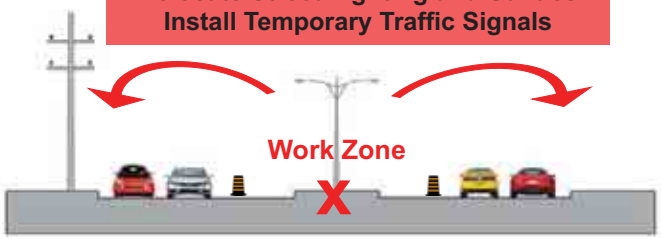
Location of storage and turn back tracks along the underground segment remains to be determined

Storage and Turn Back Tracks Section

Surface Construction

Reduce Lanes of Traffic in Each Direction

Relocate Street Lighting and Utilities
Install Temporary Traffic Signals



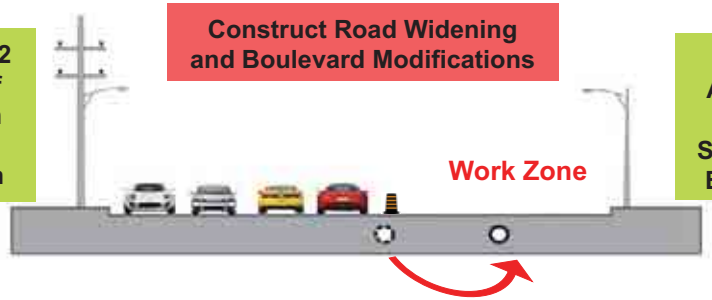
Remove Islands and Install Temporary Pavement

Stage 1

Maintain 2 Lanes of Traffic in Each Direction

Construct Road Widening and Boulevard Modifications

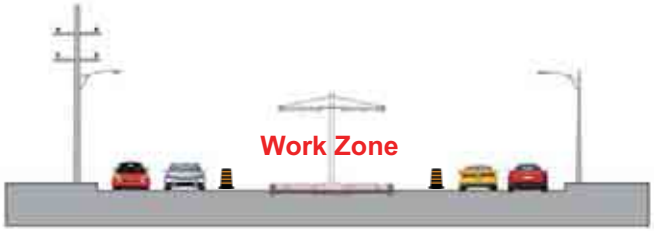
Maintain Access to Side Streets and Entrances



Relocate Utilities from LRT Right-of-Way

Stage 2

Maintain Lanes of Traffic in Each Direction



Construct LRT Right-of-Way

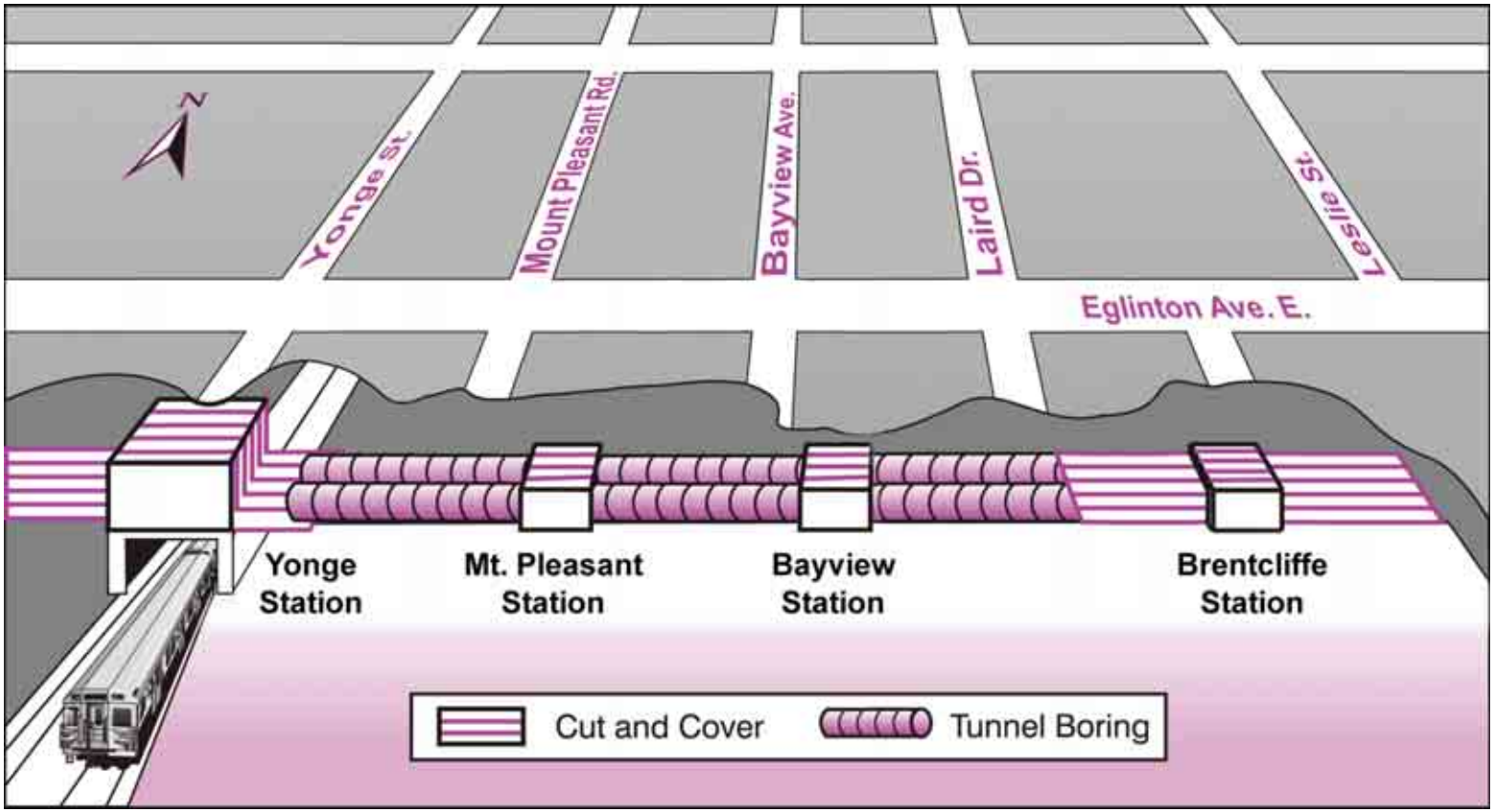
Stage 3

In the west, the LRT is proposed to run on surface from Martin Grove Road to Keele Street, with a further extension to Lester B. Pearson International Airport. In the east, a surface alignment is proposed from Brentcliffe Road to Kennedy Station.

The surface section of the LRT will be constructed in stages to minimize traffic impacts during construction. The examples shown illustrate a typical construction sequence for the staged construction of the LRT in the centre of the existing road.

Further staging may be required to relocate existing services and utilities out of the LRT Right of Way wherever impacted by construction.

Underground Construction – Overview

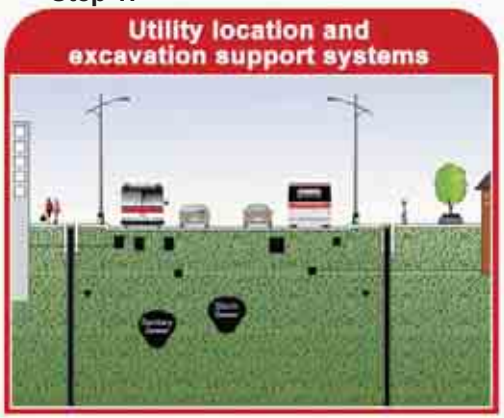


An underground alignment is proposed between Keele Street and Brentcliffe Road, primarily due to right-of-way width constraints. This segment has a 20-25m right-of-way which will not permit development of an LRT route at the surface while maintaining two lanes of traffic in each direction.

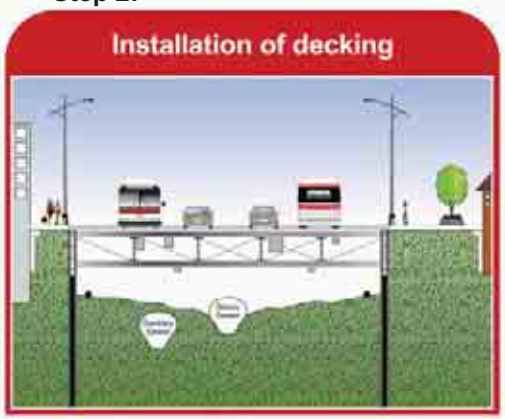
A twin tunnel alignment is being considered for most of the underground section. The example to the left is of a typical underground segment showing how different construction methods will be used. The twin tunnels will be constructed using a tunnel boring machine. Stations, portals, storage and turn back tracks (in select locations) will be constructed by cut and cover method.

Underground Construction – Cut and Cover

Step 1:

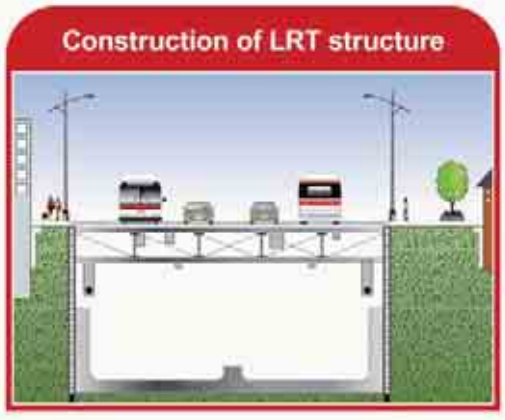


Step 2:



Step 3:

Step 4:



Step 5:

This method will be used for all stations and storage / turn back tracks.
Resulting station platforms are shallower and easier to access from the street.

Step 1: Excavation support systems are installed at this time to shore the excavation site. Underground utilities that are in conflict are either relocated or temporarily suspended. Street lighting and utility poles are relocated. Once half of the street has been excavated to the desired depth, the process is then conducted on the other half of the street.

Step 2: As soon as sufficient excavation has been made, decking, either of wood or steel, is installed so surface activities such as roads can be temporarily reinstalled. Utilities that were not relocated are suspended from the decking.

Steps3 & 4: Excavation and new construction are completed under the decking. Surface activities continue to operate on the decking.

Step 5: The tunnel box is constructed, and the area above the tunnel is backfilled. When the finished construction is close to the surface, the temporary decking is removed and all surface amenities (e.g. roads and sidewalks) are reinstated.

EGLINTON CROSSTOWN LRT

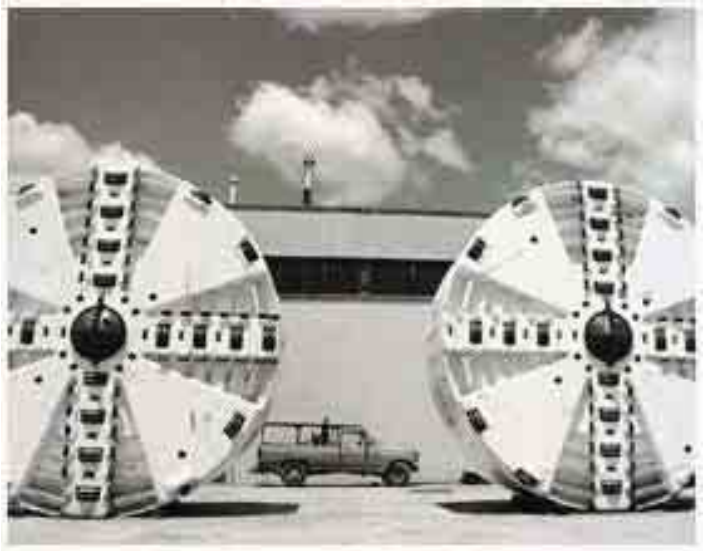
Underground Construction – Twin Tunnels

Twin 6 metre diameter tunnels have been considered as a base method for construction of the underground segment proposed between Keele Street and Brentcliffe Road.
The majority of the underground segment (with the exception of stations, portals, storage and turn back tracks) will be built using this method.

Powerful circular cutting machines drill deep below the surface with minimal disruption to traffic and business activities.

Excavated material is removed by truck.

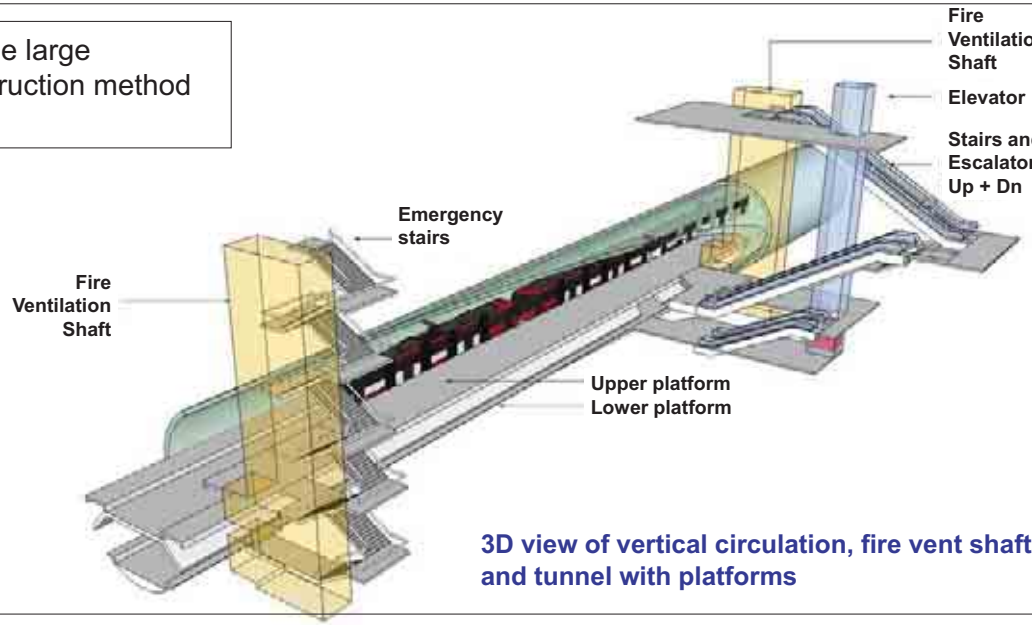
Twin tunnels will have potentially disruptive construction at the surface in the vicinity of major intersections where stations will require cut and cover construction.



Underground Construction – Alternate Method – Single Bore Tunnel

An alternative construction method is currently being studied using a single large diameter tunnel for the underground section including stations. This construction method is potentially less disruptive at the surface in the vicinity of intersections.

Typical Station Section



3D view of vertical circulation, fire vent shafts and tunnel with platforms

A single tunnel station consists of 1 horizontal component (the tunnel) and 2 vertical components (circulation and ventilation structures). The single bore tunnel diameter is approximately 13 metres compared to 6 metres for the twin tunnels.

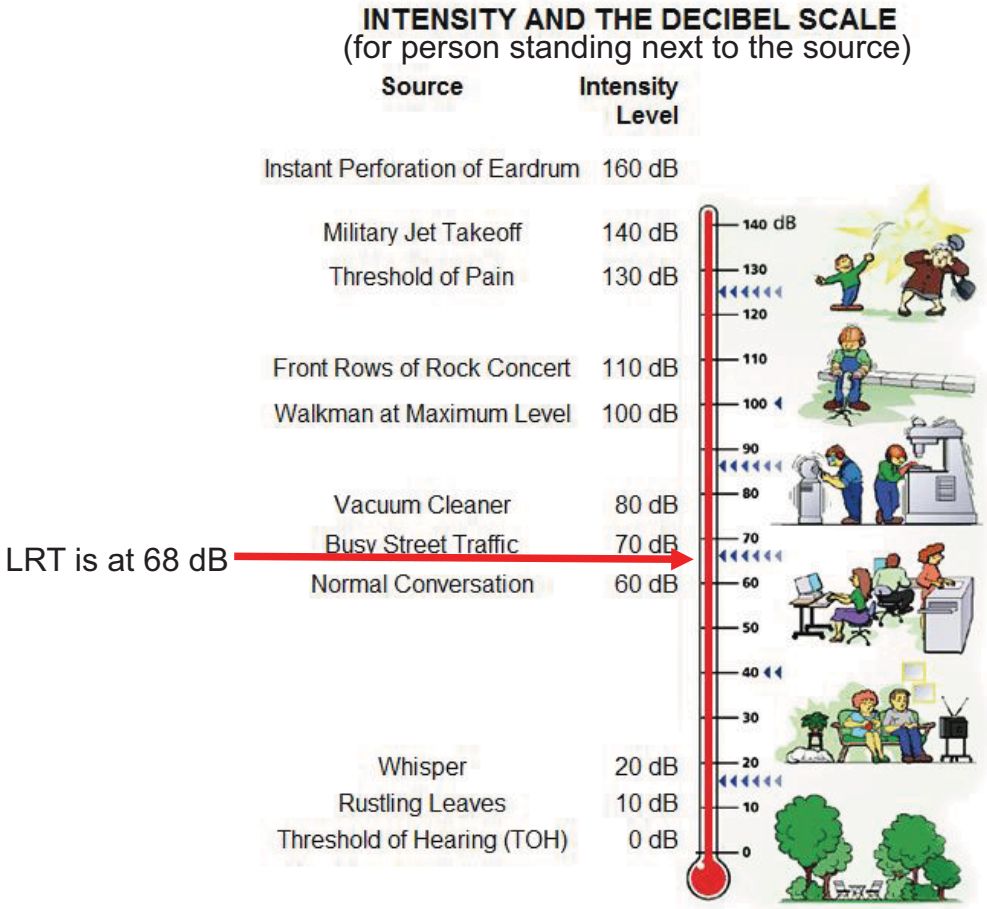
The platforms are located within the tunnel and stacked, one above the other.

The lowest side platform is 24 metres deep compared to 15 metres for the centre platform in a twin tunnel station constructed by cut-and-cover method.

The main circulation structure would include an elevator, stairs and 2 sets of escalators. An underground connection can be made from this main circulation structure to secondary entrances on opposite sides of the street.

Noise and Vibration

- Between this Open House and Open House 3, TTC will undertake noise and vibration studies in accordance with established Ministry of Environment (MOE) and TTC protocols at areas sensitive to noise and vibration, such as residential areas.
- Measures to mitigate potential noise and vibration will also be presented at Open House 3.



Next Steps

- This Open House is the second of three open houses planned for the Eglinton Crosstown LRT. In the next few months we plan to:
  - Review and respond to input received during the second round of consultation
  - Present information about potential environmental impacts and present recommended mitigation measures
  - Identify preferred route between Martin Grove Road and Lester B. Pearson International Airport, and select preferred solutions at Jane Street, Black Creek Drive, Don Mills Road and Kennedy Station
  - Provide more information about construction methods;
  - Provide more details about surface facilities (substations, vent shafts and emergency exits)
- **Please watch for notices of Open House 3 throughout the coming months.**

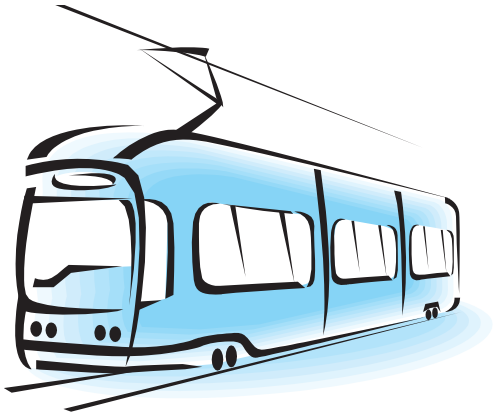
Freedom Of Information & Protection Of Privacy Act

Requirements

- Comments and information regarding this study are being collected to meet the requirements of the Environmental Assessment (EA) Act. This material will be maintained on file for use during the study and may be included in project documentation.
- Information collected will be used in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record.
- You are encouraged to contact the TTC if you have any questions or concerns regarding the above information.

Contact Information

- **There are five (5) ways to submit your comments:**
  - *Please hand in your comment form before you leave*
  - *E-mail:* ***eglintontransit@toronto.ca***
    Web: ***www.toronto.ca/transitcity***
  - *Phone:* *416-392-6900 (24/7 Comment Line) TTY: 416-397-0831*
  - *Fax:* *416-392-2974*
  - *By Mail:* *Eglinton Crosstown LRT Public Consultation*
    Metro Hall, 19th Floor
    55 John Street,
    Toronto, Ontario, M5V 3C6
- ***Comments would be appreciated by July 10, 2009.***



Thank you for your participation.