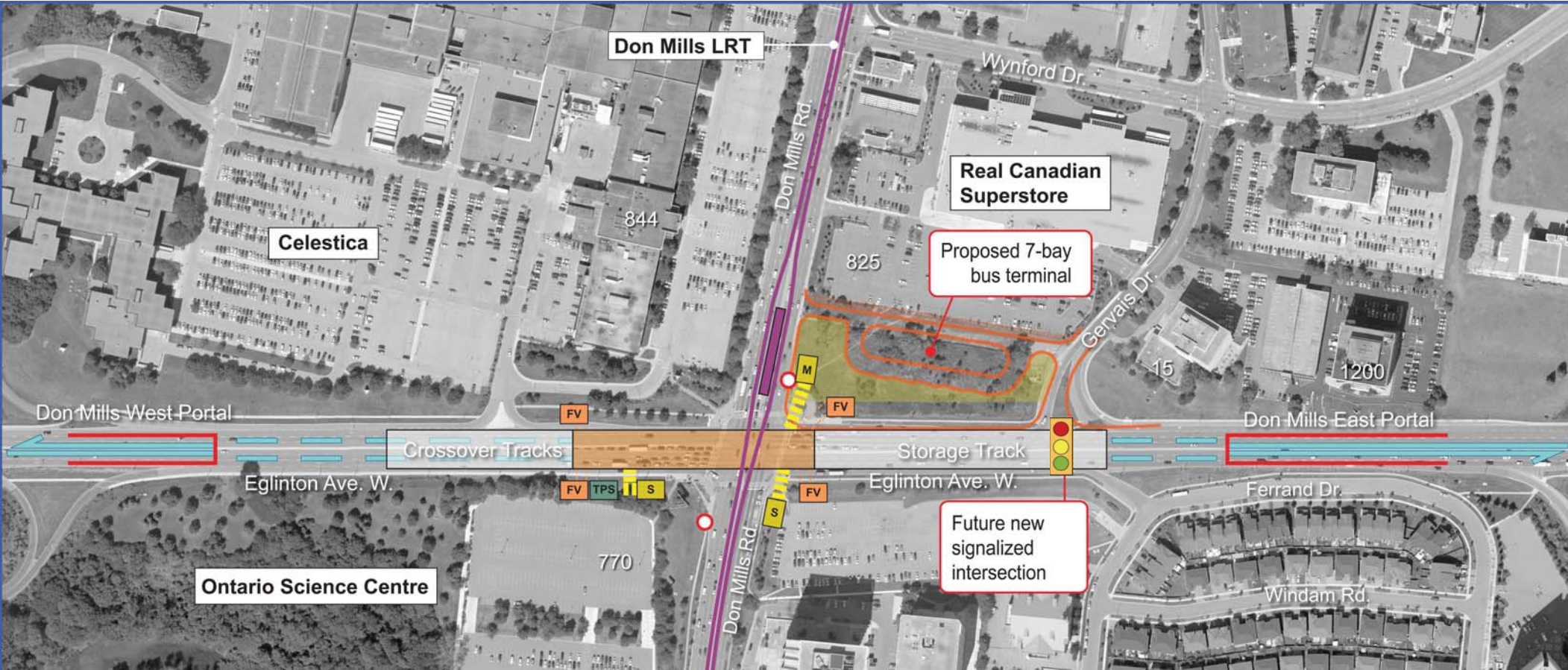



Don Mills Station (Bus Terminal)



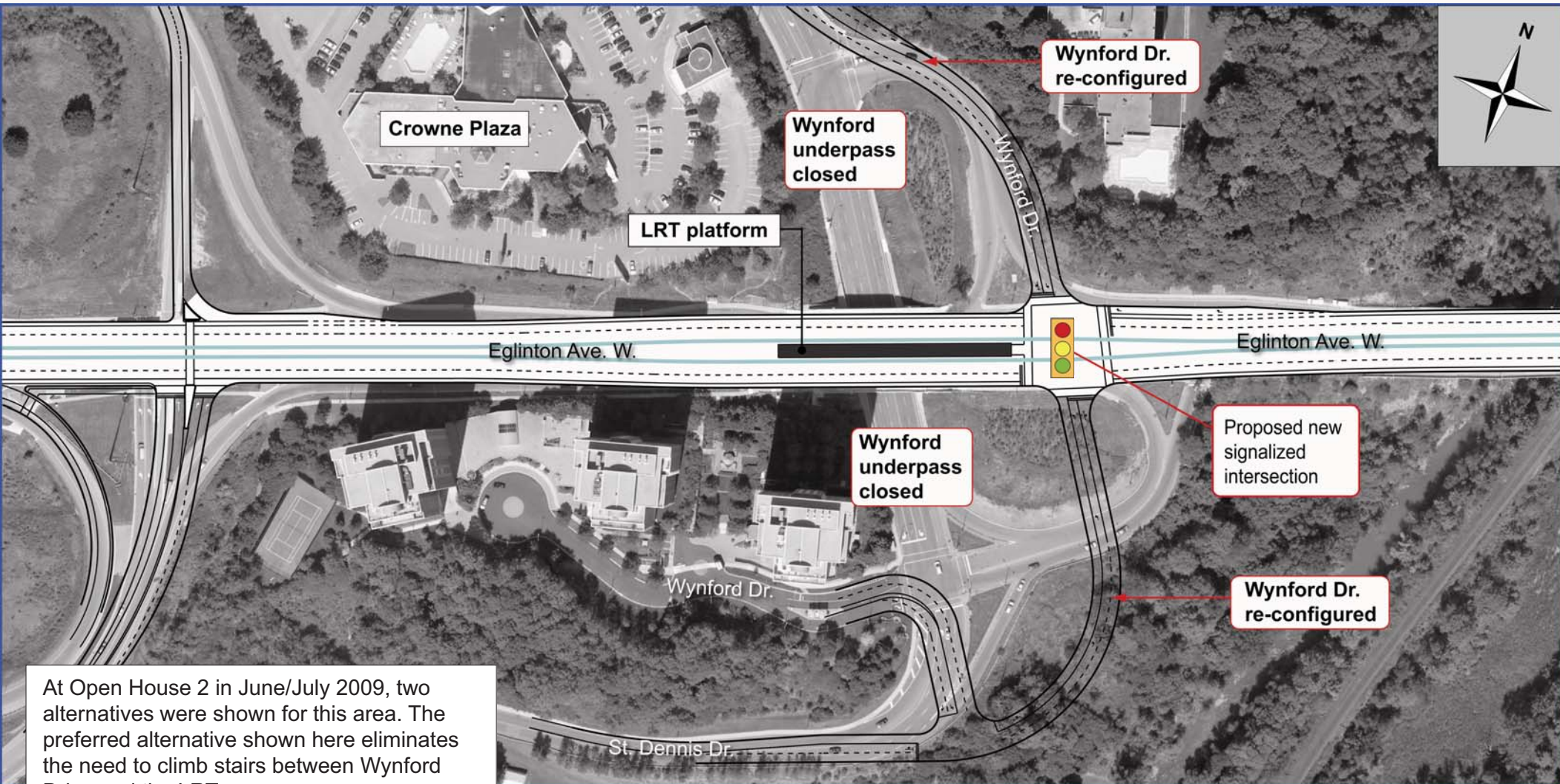
LEGEND

- | | | | |
|--|------------------------|---|---------------------------|
|  | Station platform |  | Main LRT entrance |
|  | EC LRT line |  | Secondary LRT entrance |
|  | Underground walkway |  | Traction power substation |
|  | Don Mills LRT line |  | Fire ventilation shaft |
|  | Don Mills LRT platform |  | Existing bus stop |
| | | 1901 | Street number |



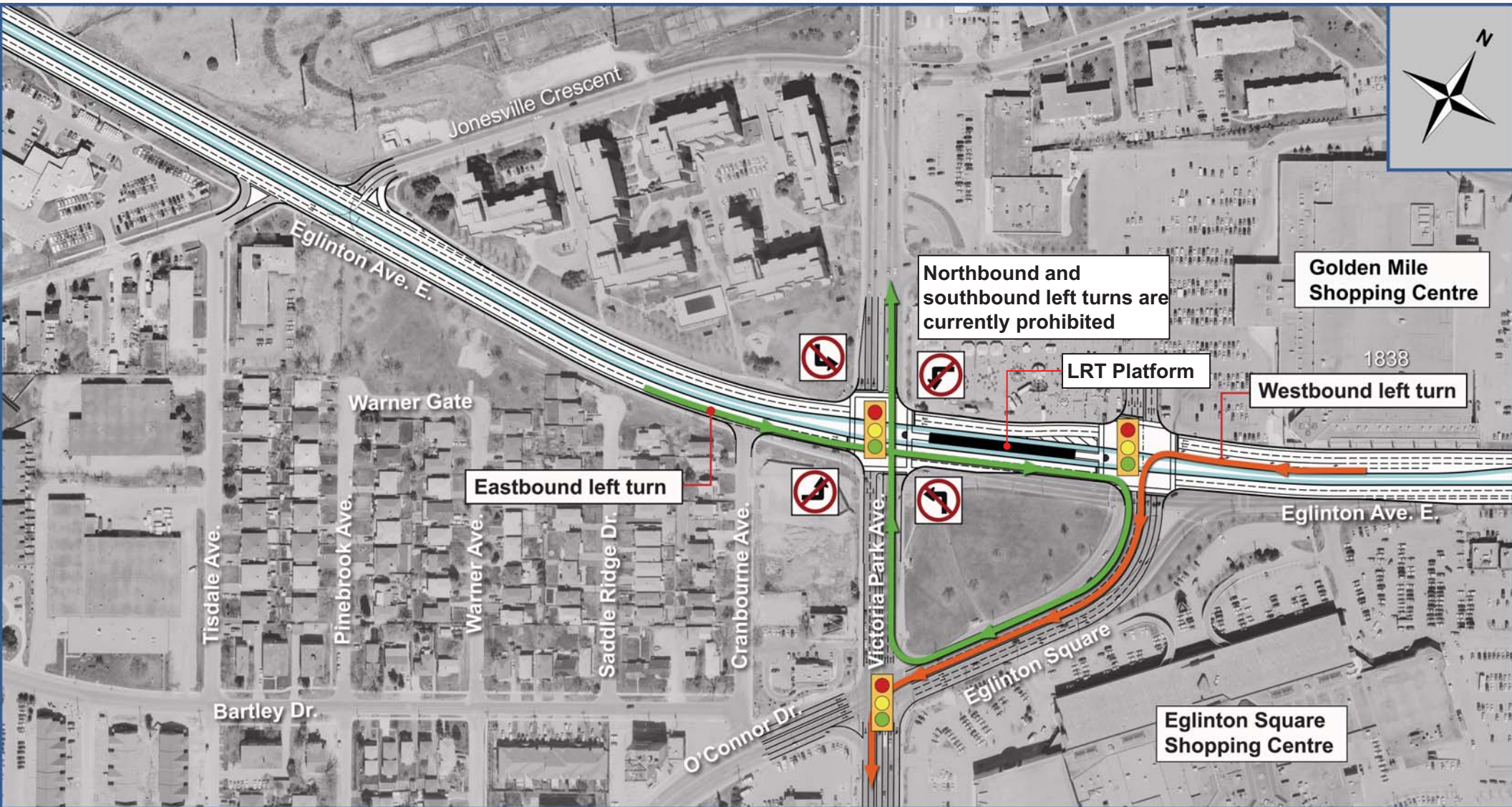
At Open House 2 in June/July 2009, two alternatives were shown for the interchange with the Don Mills LRT. The preferred alternative is for the Don Mills LRT to operate at surface with an underground Eglinton LRT station. This alternative will improve the speed and reliability of the Eglinton Crosstown LRT through this busy intersection and will provide a safer and more convenient transfer between the two LRT lines and the bus terminal.

Wynford Stop



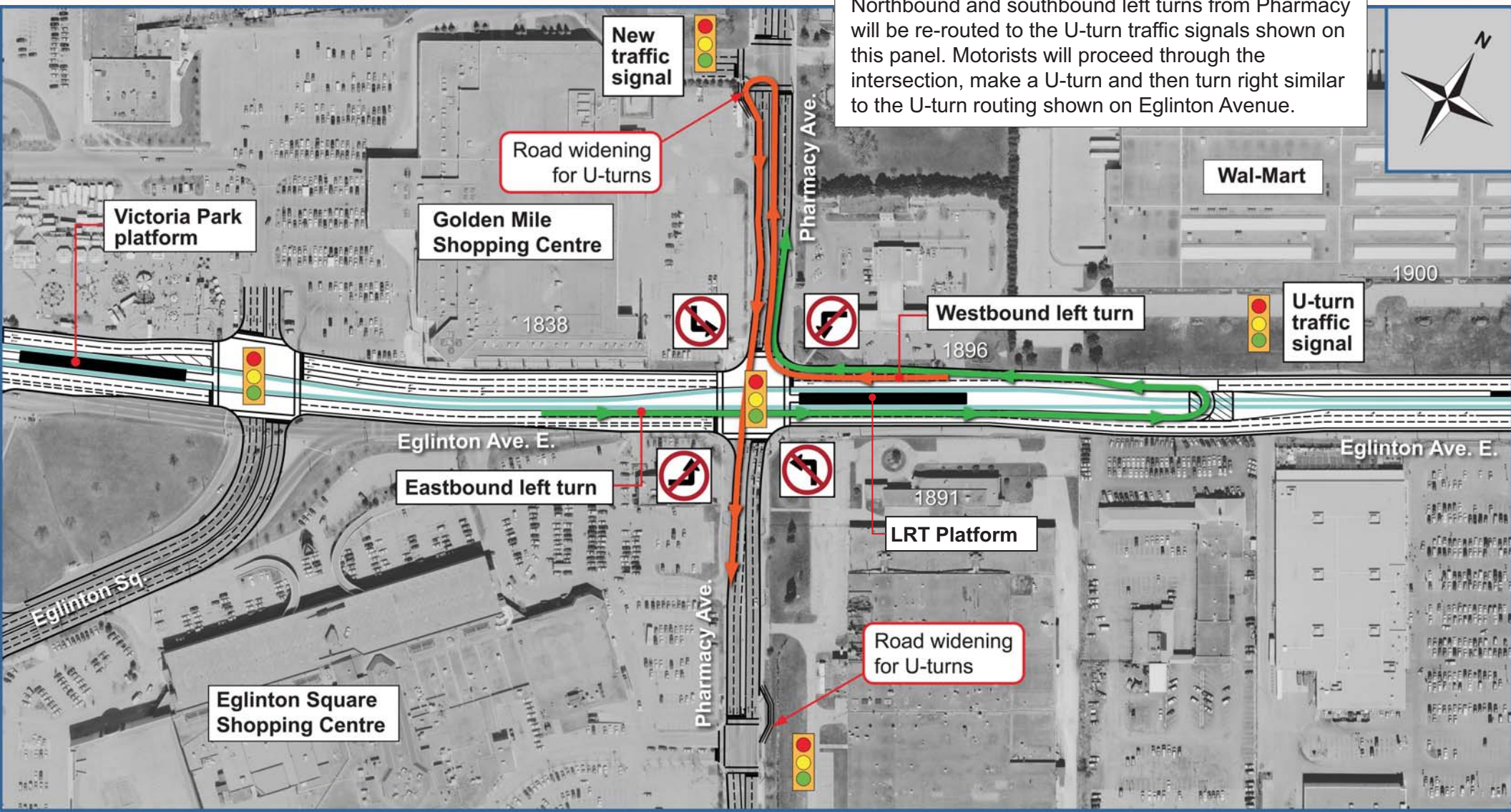
At Open House 2 in June/July 2009, two alternatives were shown for this area. The preferred alternative shown here eliminates the need to climb stairs between Wynford Drive and the LRT.

Victoria Park Stop (Re-routed Left Turn)

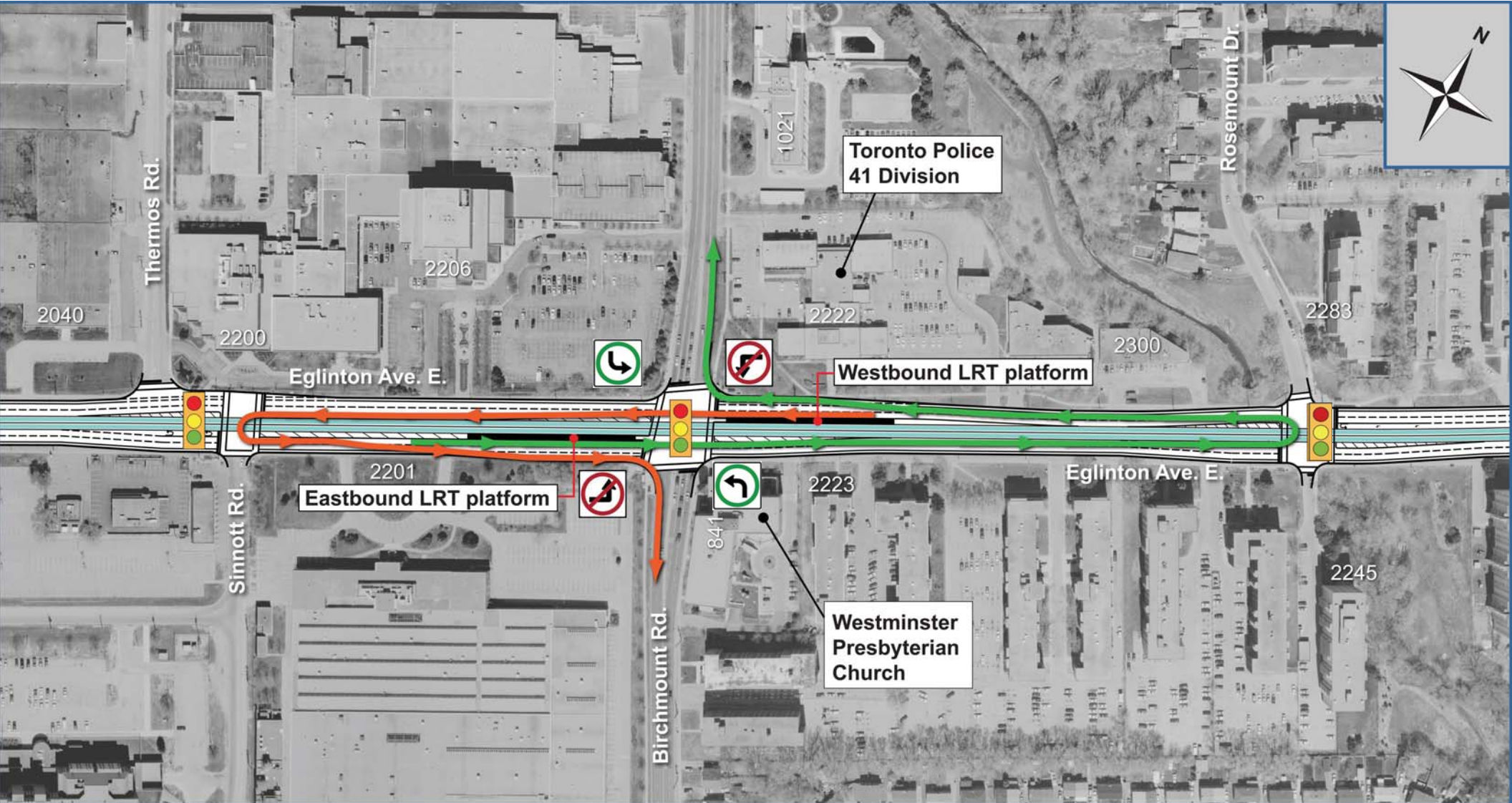


Pharmacy Stop (U-turn)

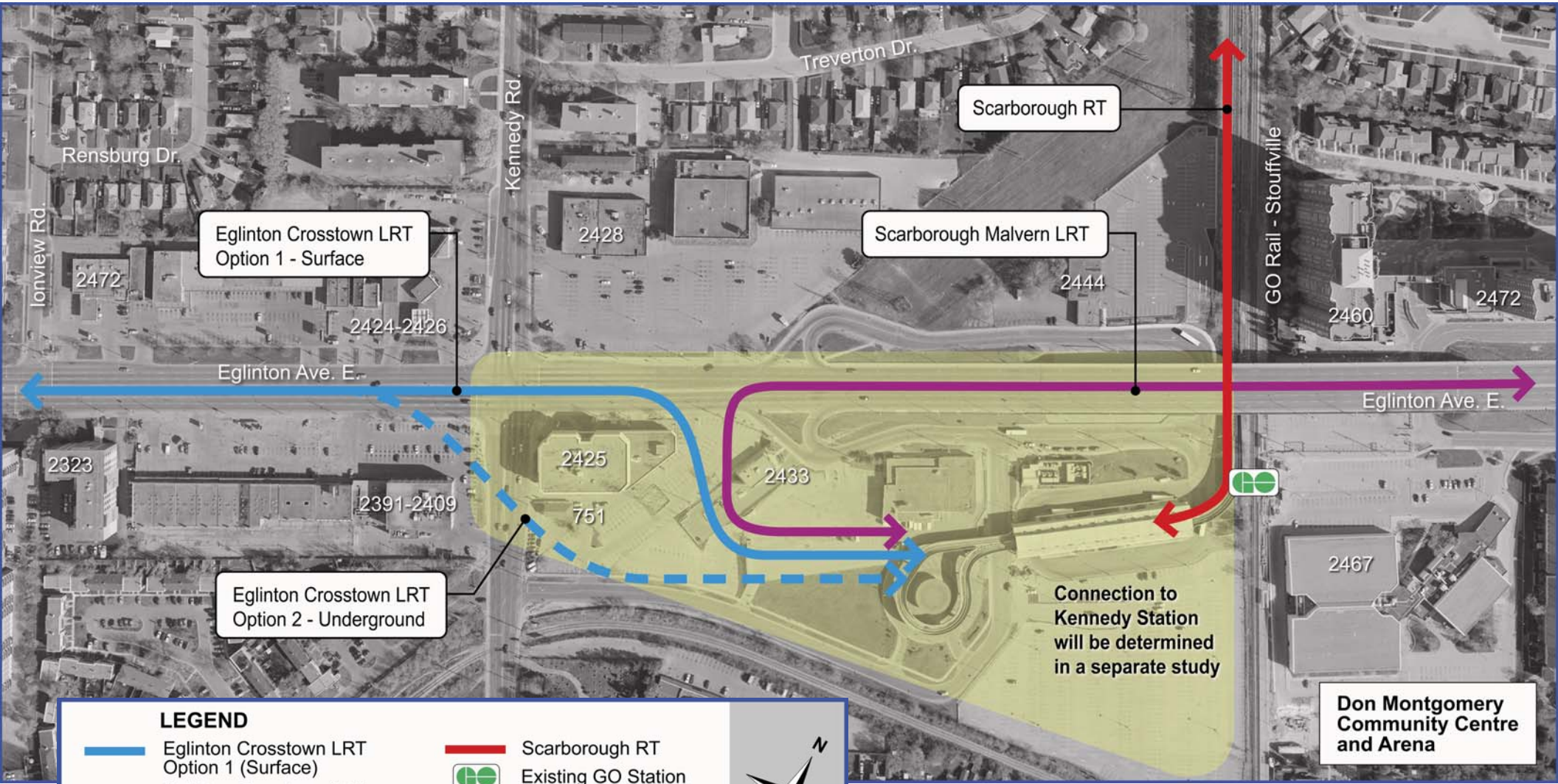
Northbound and southbound left turns from Pharmacy will be re-routed to the U-turn traffic signals shown on this panel. Motorists will proceed through the intersection, make a U-turn and then turn right similar to the U-turn routing shown on Eglinton Avenue.



Birchmount Stop (U-turn)



Kennedy Station



LEGEND

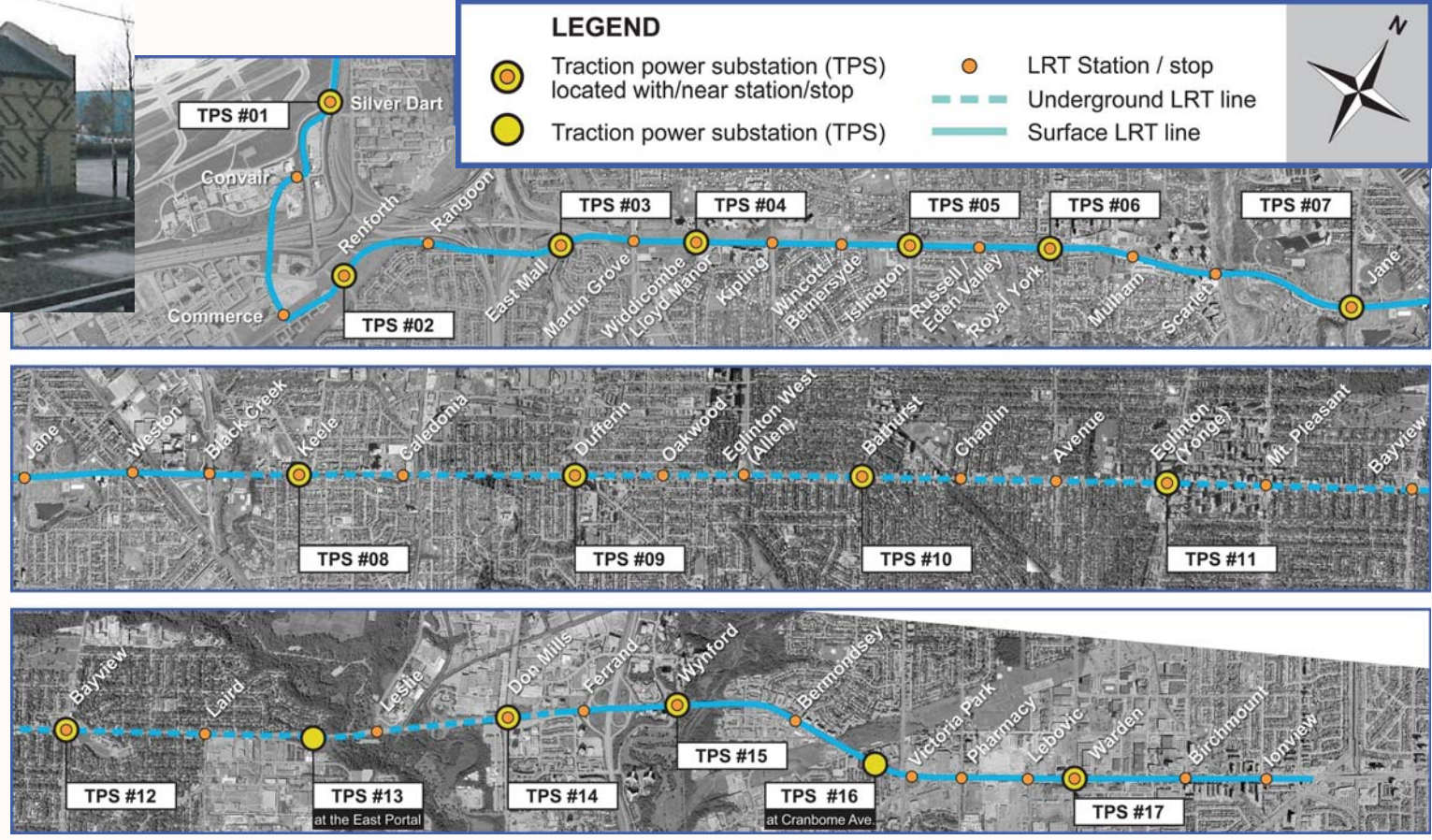
- Eglinton Crosstown LRT Option 1 (Surface)
- - - Eglinton Crosstown LRT Option 2 (Underground)
- Scarborough Malvern LRT
- Scarborough RT
- Existing GO Station
- 1901** Street number

Don Montgomery
Community Centre
and Arena

Traction Power Substations

Traction power substations (TPS) provide system power to light rail vehicles and are planned with an average spacing of 1.5 kilometres along the surface sections and 2.0 kilometres along the underground sections.

The specific locations of the traction power substations are shown in the roll-out drawing.



Emergency Exit Buildings



LEGEND

- Emergency exit building (EEB)
- Station platform
- Underground LRT line
- Surface LRT line




An emergency exit building (EEB) is part of an emergency egress system that also includes a common stairwell vestibule between the twin tunnels, leading up to the surface level. At the surface level, EEB's are planned along side streets immediately north or south of Eglinton Avenue.

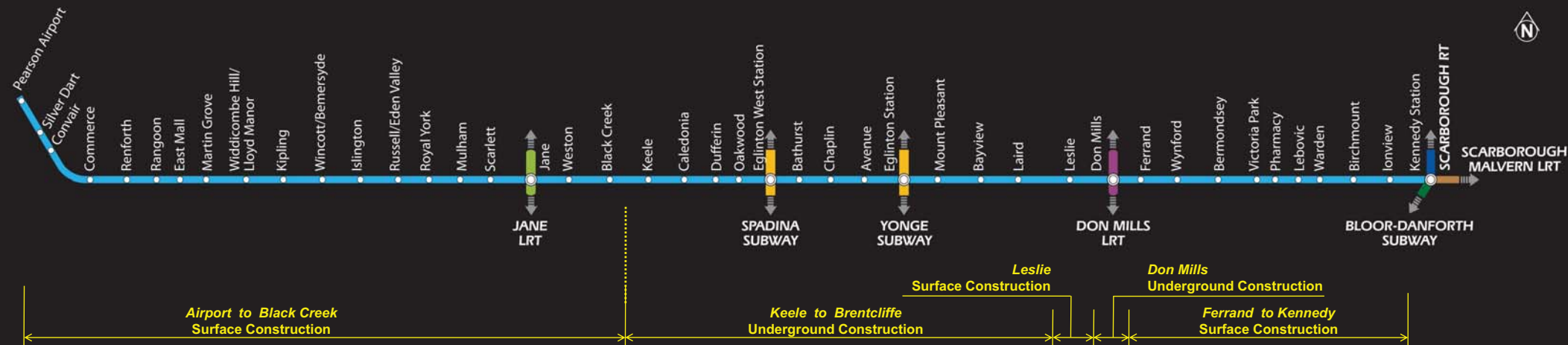
In accordance with fire protection regulations, emergency exit buildings have been provided along the underground segment where station platforms are more than 762m apart. Additionally, the distance to an exit cannot exceed 381m.

The specific locations of the emergency exit buildings are shown in the roll-out drawings.



Emergency exit building on Bessarion Rd. Sheppard Subway

Construction Methods – Overview



Surface Construction



Surface Section

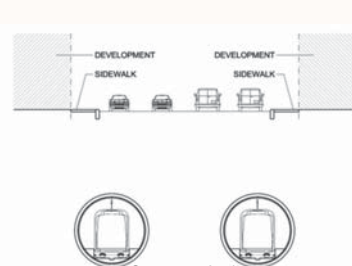


See panel 50

Underground Construction: Tunnelling



Tunnel Section

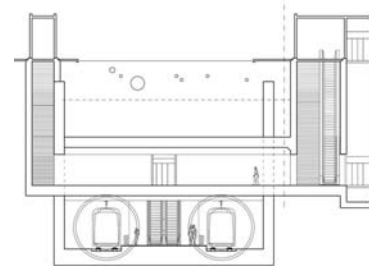


See panel 51

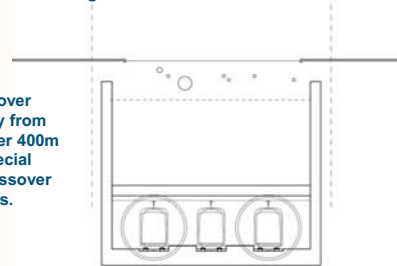
Underground Construction: Cut and Cover



Station Cross Section



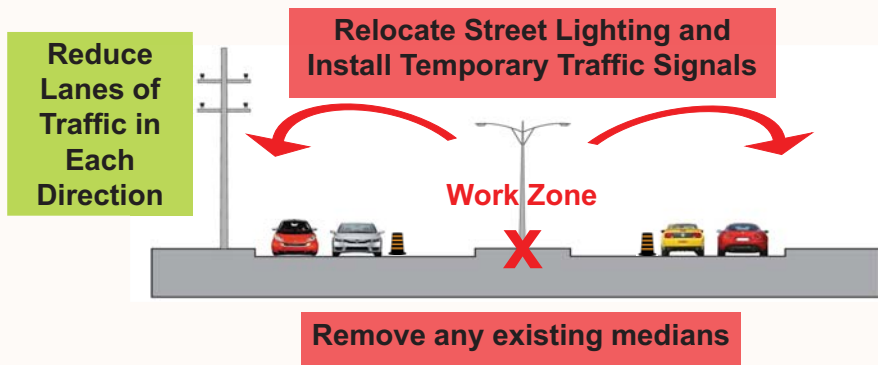
Storage and Cross-over Tracks Section



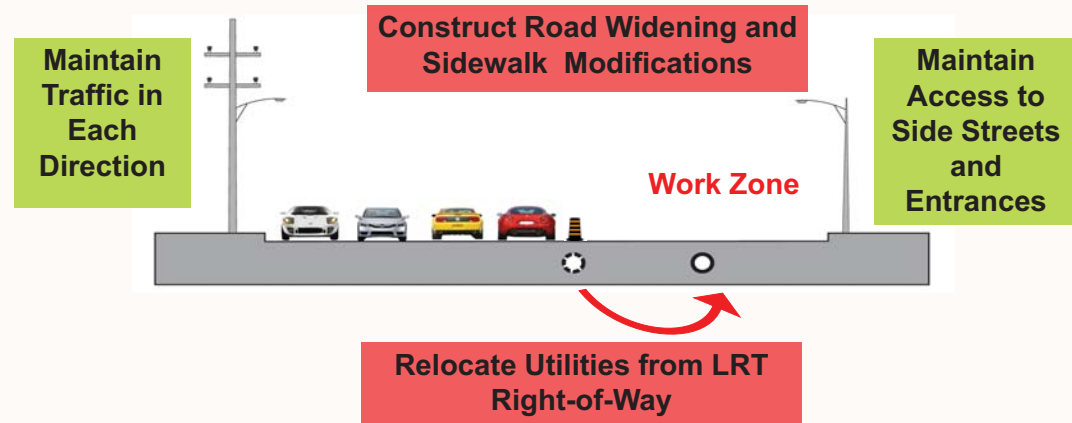
Length of cut and cover construction may vary from 150m for stations to over 400m for stations with special trackwork such as crossover and storage tracks.

See panels 52-55

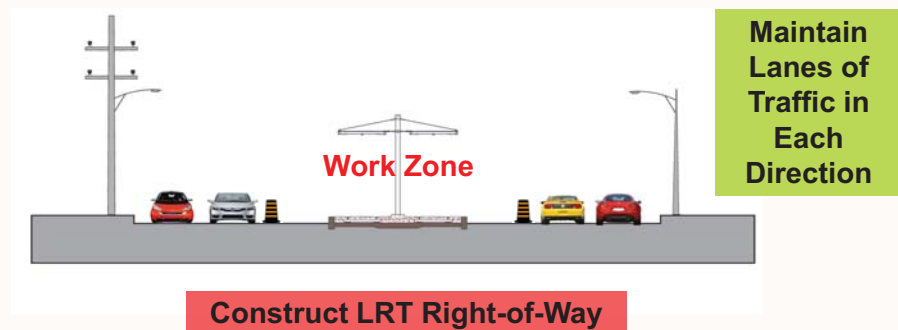
Surface Construction



Step 1



Step 2



Step 3

The examples shown illustrate a typical construction sequence for the portion of the Eglinton LRT that will operate at the surface at the centre of the existing road.

The objective is to execute a concise period of construction. To accomplish this, the stages of construction will take place in sequence along the surface route. (For locations of surface construction, please see previous panel.)

Surface work will include:

- Road widening
- Relocation of street lighting
- Sidewalk modifications
- Some relocation of utilities
- Trackwork installation
- Landscaping/urban improvements

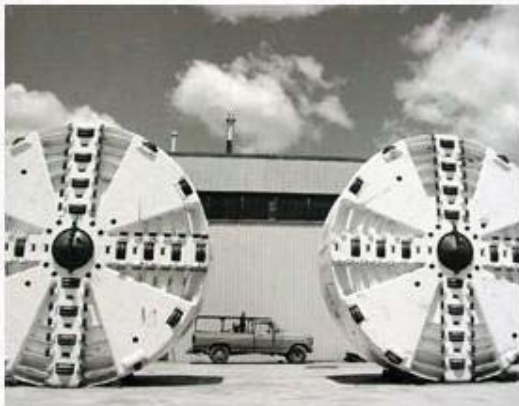
Standard practice during this stage of construction:

- Traffic in each direction will be maintained, though not all current lanes will be available
- Pedestrian access to storefront entrances will be maintained
- Detailed traffic management plans will be developed during detailed design
- Parking will be restricted and will not be available in some areas

Underground Construction – Tunnelling

Twin Tunnels (Recommended)

- The majority of the underground segment of the line will consist of side –by-side, or twin, tunnels. Each tunnel will be 6 metres in diameter and will be constructed using powerful circular cutting machines that drill deep below street level.
- Traffic and business activities experience less disruption with this method
- Excavated material is removed by truck.



Single Bore Tunnel (Not Recommended)

As presented at Open House 2 in June/July 2009, a single large diameter tunnel was considered. Analysis has concluded that this alternative is less desirable for the following reasons:

- The deeper station platform of the single bore tunnel scheme would have been less desirable for passengers moving between the surface and platform levels.
- The single bore tunnel would have been in excess of 13m in diameter and would have been without precedent as the largest bore ever attempted in North America.
- Existing geological strata would have resulted in higher risk of ground impacts at the surface and to adjacent buildings during the boring operations.



Cut and Cover Construction - Overview

In addition to tunnelling (described in the previous panel), construction at stations, portals and stations with special trackwork such as crossover and storage tracks use a second method called cut and cover. This construction method has a more visible effect at street level.

Standard practice at cut and cover locations include:

- Traffic in each direction will be maintained, though not all current lanes will be available
- Pedestrian access will be maintained
- Due to space constraints, no on-street parking will be available

The cut and cover method will be used at all 13 underground stations and will take place along Eglinton Avenue for an average length of 150 metres at each location. Cross over tracks and storage tracks will be included in the design of the underground section, which will extend the cut and cover lengths to 440 metres at Keele, Eglinton West (Allen); Eglinton (Yonge); Laird and Don Mills stations.

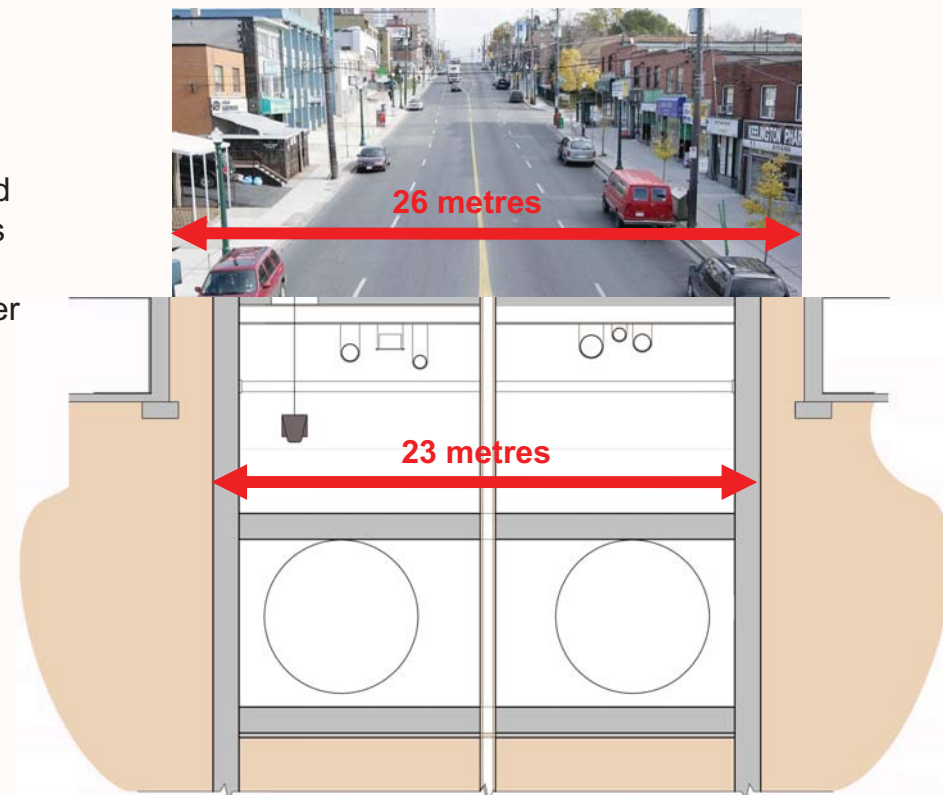
The following panels show the conceptual process. Detailed traffic management plans will be developed during the detailed design stage.

Next steps

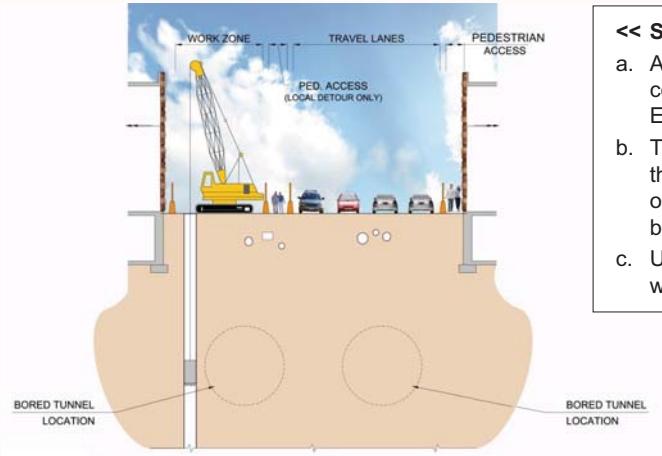
- Minimize width of station box construction during the detailed design stage
- Develop comprehensive pedestrian, parking and traffic management plans

The width of Eglinton Ave is limited at the following locations:

- Keele
- Dufferin
- Oakwood
- Bathurst
- Bayview
- Chaplin
- Avenue
- Yonge
- Mt. Pleasant

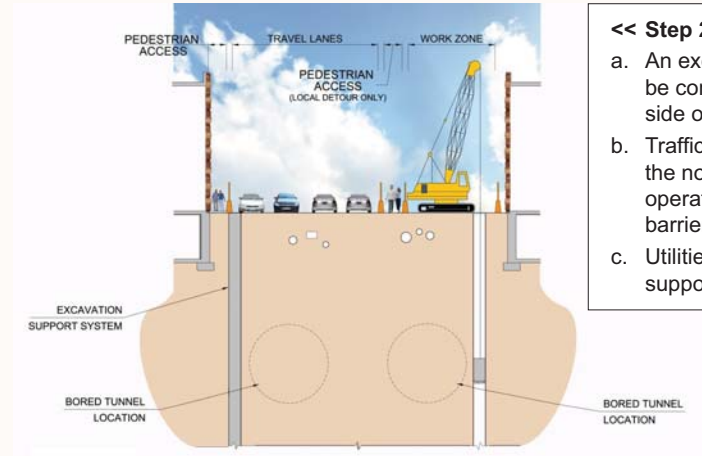


Cut and Cover Construction – Excavation Support Installation



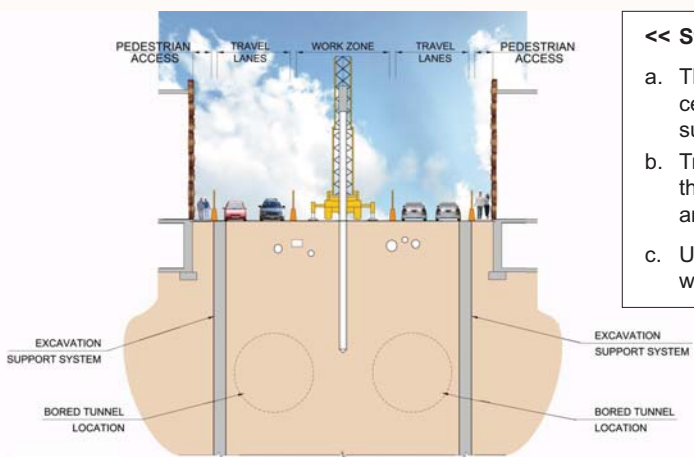
<< Step 1 Construct North Wall

- An excavation support wall will be constructed along the north side of Eglinton.
- Traffic lanes will be realigned to the south side of Eglinton and operate between protective barriers.
- Utilities in the path of the support wall will be relocated.



<< Step 2 Construct South Wall

- An excavation support wall will be constructed along the south side of Eglinton.
- Traffic lanes will be realigned to the north side of Eglinton and operate between protective barriers.
- Utilities in the path of the support wall will be relocated.



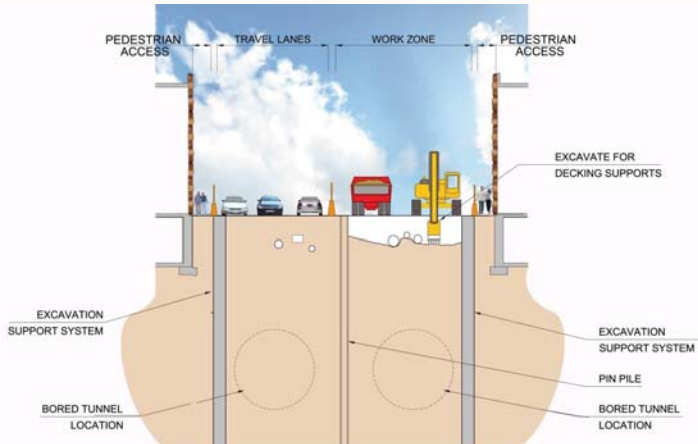
<< Step 3 Construct Centre Wall

- The work zone moves to the centre of the street where centre supports are constructed.
- Traffic is split along either side of the centre work zone and barriers are erected.
- Utilities in the path of the support wall will be relocated.

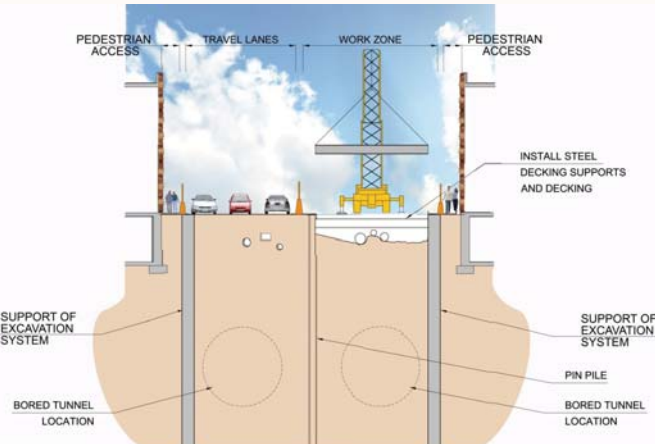
Standard practice during this stage of construction:

- Pedestrian access maintained
- No on-street parking
- 4 traffic lanes (depending on location)

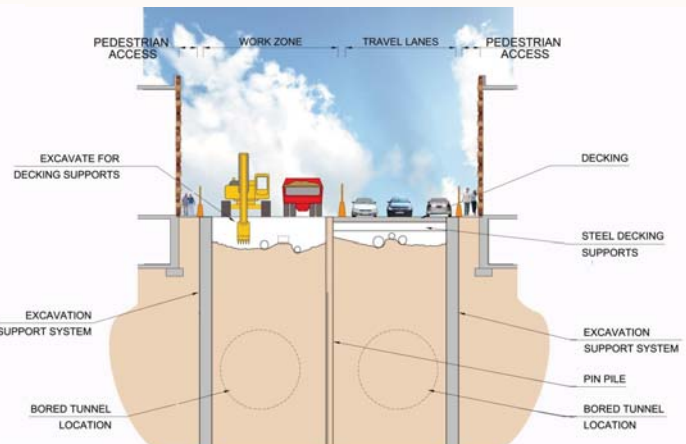
Cut and Cover Construction – Decking Installation



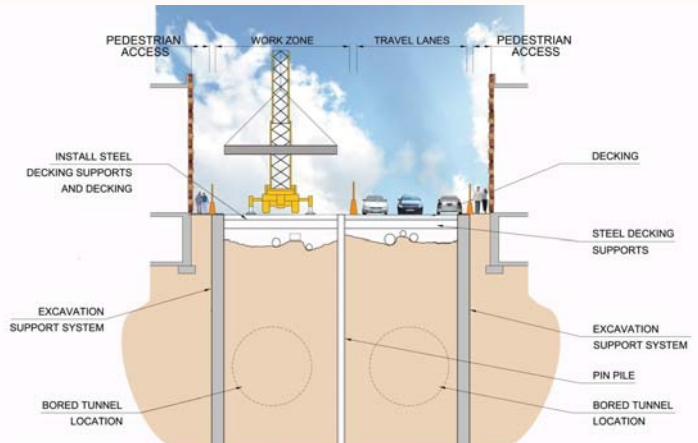
- << Step 4 Excavate South Side for Decking Support**
- Shallow excavation to prepare for erecting decking supports begins on the south side.
 - Traffic is again realigned to the north side of Eglinton.
 - Utilities in the path of decking supports will be relocated.



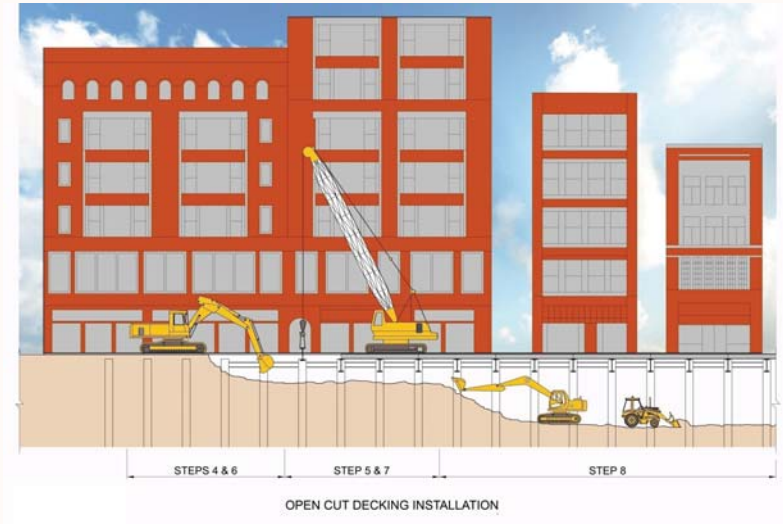
- << Step 5 Install Decking-South Side**
- Steel supports are installed on south side.
 - Surface decking is installed on south side.



- << Step 6 Excavate North Side for Decking Support**
- Shallow excavation to prepare for erecting decking support begins on the north side.
 - Traffic is again realigned to the south side of Eglinton.
 - Utilities in the path of decking supports will be relocated.

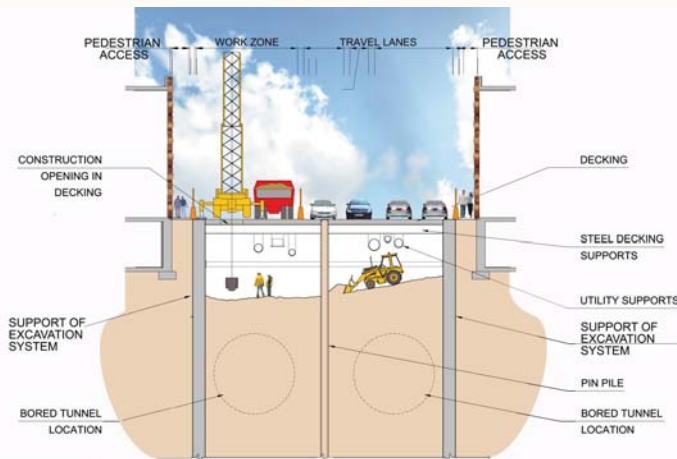


- << Step 7 Install Decking North Side**
- Steel supports are installed on the north side.
 - Surface decking is installed on the north side.



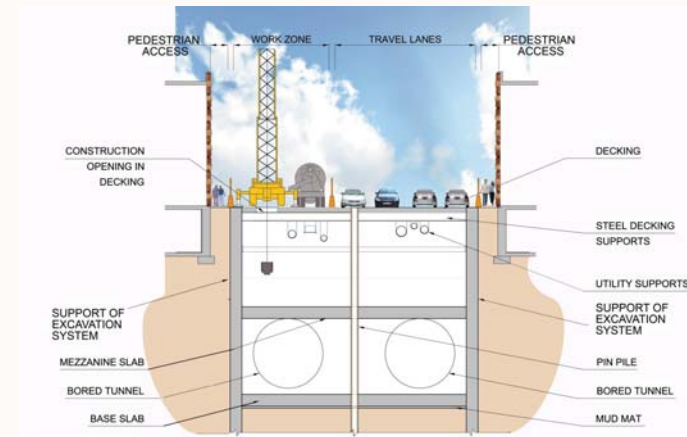
- Standard practice during this stage of construction:**
- Pedestrian access maintained
 - No on-street parking
 - 3 traffic lanes (depending on location)

Cut and Cover Construction – Deep Excavation and Station Construction



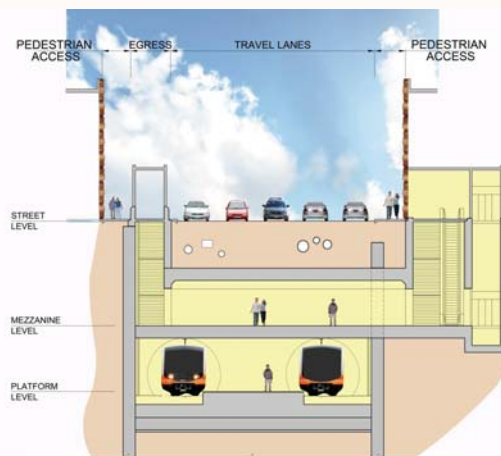
<< Step 8 Decking Complete – Excavate Below

- With all decking installed, deep excavation can begin
- The work zone becomes more narrow and more traffic can be accommodated
- Utilities are held in place with supports
- As excavation deepens, temporary struts are installed for additional support



<< Step 9 Station Construction

- Construction of the final station structure can begin
- Twin tunnel construction is co-ordinated with station construction



<< Step 10 Completion

- As the surface roadway is restored, traffic lanes will shift similar to the early stages of construction
- Decking and steel supports are removed
- Hanging utilities are back-filled
- Station entrances are constructed as well as passages, vent shafts etc

Standard practice during this stage of construction:

- Pedestrian access maintained
- No on-street parking
- 4 traffic lanes (depending on location)

Environmental Effects

The environmental effects for the Eglinton Crosstown LRT are classified as follows:

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

These effects and proposed measures to mitigate any negative effects are summarized in the following panels.



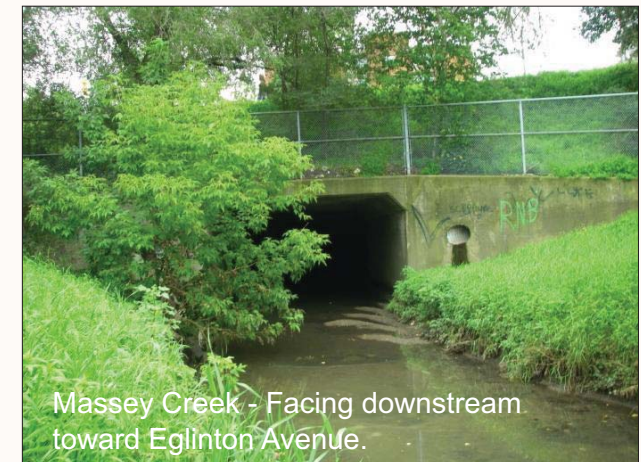
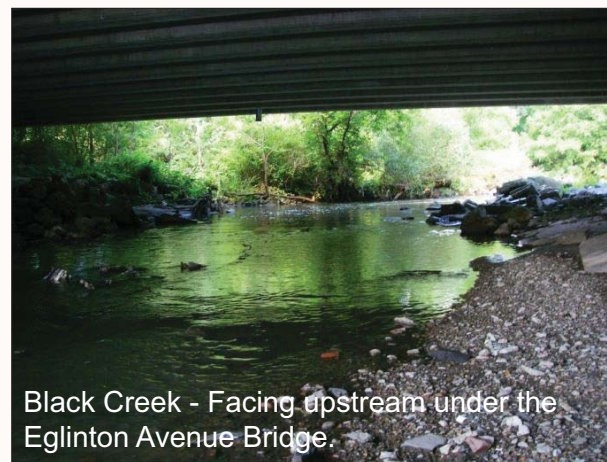
Displacement of Existing Features by LRT Facilities

- **PROPERTY:** Full acquisition, (including demolition of buildings and relocation of existing businesses or residences) is required for 44 private properties and partial acquisition on 46 other private properties. Temporary property requirements for construction of the Eglinton Crosstown LRT will be confirmed during design.
- **PARKS/PARKETTES:** Five parks/parkettes will be affected by LRT facilities (i.e. fire ventilation shafts, station entrances, emergency exit buildings or traction power substations): St. Hilda's parkette, Ben Nobleman Park, Chaplin parkette, North Toronto Community Centre (located within Eglinton Park) and Howard Talbot Park. The preferred location, configuration and design of these LRT facilities will be determined in consultation with the City of Toronto.
- **VEGETATION:** Approximately 1.7 hectares of vegetation communities will be displaced by road and bridge improvements. The impacts on vegetation will be mitigated to the extent possible through avoidance, minimizing the extent of vegetation removals, protecting vegetation to remain and restoring vegetation that is removed. Impacts and mitigation measures will be reviewed with City of Toronto Parks, Forestry and Recreation and the Toronto and Region Conservation Authority (TRCA).
- **CULTURAL HERITAGE:** Built heritage features (including buildings over 40 years of age) and cultural landscapes will be displaced or altered at Keele Street, Oakwood Avenue, Yonge Street, Mt. Pleasant Road and Bayview Avenue. Alterations to buildings and landscapes will be designed with consideration to the local context. Any features to be displaced or altered will be documented prior to construction in consultation with City of Toronto Heritage Preservation Services.



Displacement of Existing Features by LRT Facilities

- **WATERWAYS:** Bridge widening will be required at Mimico Creek, Black Creek, West Don River, East Don River, and Wilson Brook. All facilities will be designed and located, where feasible, to minimize negative effects. No harmful alteration of fish habitat is anticipated for this project.
- **CONTAMINATED SOILS & GROUNDWATER:** Contaminated soils and groundwater will be managed in accordance with provincial legislation and regulations.
- **UTILITIES:** Utilities and pipelines will be relocated and/or supported prior to construction, where necessary.



Construction Impacts

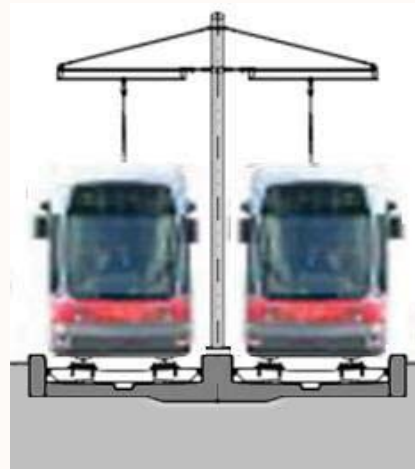
Measures will be implemented during construction to avoid, minimize or mitigate adverse environmental impacts including:

- Erosion and sedimentation control
- Best management practices to minimize release of dust and other airborne pollutants and mud and litter
- Reinstatement of temporary work sites following construction
- Development and implementation of traffic management plans will be implemented to maintain vehicle, bicycle and pedestrian access
- Installation of decking at cut-and-cover excavations
- Restriction of truck haul of construction materials, equipment and tunnelling spoils to major arterial roads
- Noise and vibration control
- Construction staging and sequencing to mitigate the potential impacts on businesses to the extent possible
- Ongoing management and monitoring of construction activities.

Operations and Maintenance Impacts

Measures will be implemented during operations and maintenance to avoid, minimize or mitigate adverse effects including:

- Stormwater run-off from will be treated in accordance with applicable City of Toronto / City of Mississauga, Toronto and Region Conservation Authority (TRCA) and Ministry of the Environment (MOE) requirements.
- Noise generated by LRT vehicles and by bus terminal operations will be attenuated, if required, to meet MOE standards (see panel 61).
- Vibration generated by LRT vehicles and by bus terminal operations will be attenuated, if required, to meet MOE standards (see panel 62).
- Air emissions generated by bus terminal operations will be attenuated, if required, to meet MOE standards.
- The potential for traction power stray current will be controlled using isolated and insulated power supplies.



Noise Assessment – Overview

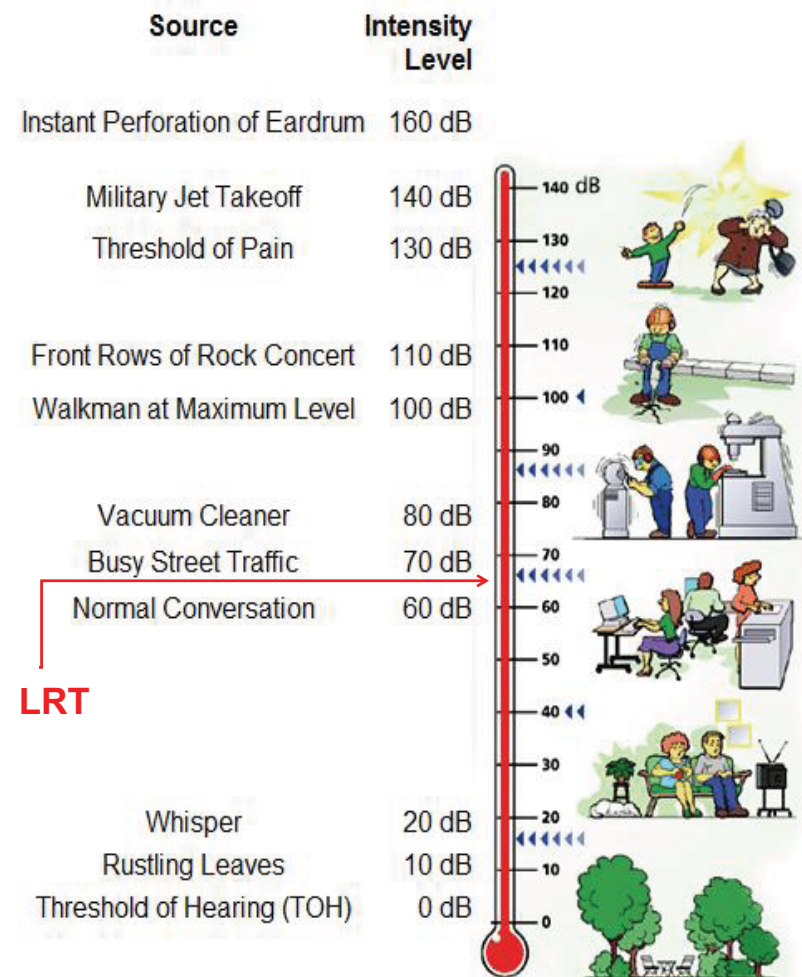
Existing Conditions

The Eglinton Avenue corridor currently has significant traffic volumes and high ambient noise levels.

New LRT Technology for Transit City

- Minimal noise impacts are expected due to:
 - Advances in vehicle and track technology over existing TTC streetcar infrastructure.
 - Track construction that includes continuously welded rail to minimize the number of rail joints, and the use of rubber sleeves that isolates the rail from the concrete.

INTENSITY AND THE DECIBEL SCALE



Noise Assessment – LRT Vehicles

A noise analysis was carried out in accordance with the established Ministry of Environment (MOE) / TTC Protocol. The future noise levels were predicted for identified sensitive areas along the corridor. The results for the **surface section** are shown in the table below. In the **underground section**, it is **not expected** that there will be increased noise levels compared to existing conditions.

Surface LRT Section	Sound Level Change Along Corridor (Decibels) (dBA)		Increment Requiring Mitigation (Decibels) (dBA)	Mitigation Required According to MOE/ TTC Protocol (Yes/ No)
	Day	Night		
Martin Grove to Kipling	0 to 2	0 to 3	5	No
Kipling to Islington	0 to 2	0 to 3	5	No
Islington to Royal York	1 to 3	2 to 3	5	No
Royal York to Scarlett	0 to 2	2 to 3	5	No
Scarlett to Jane	1	2	5	No
Jane to Weston	1	2 to 3	5	No
Brentcliffe to Don Mills	1	1	5	No
Don Mills to Don Valley Parkway	1	1	5	No
Don Valley Parkway to Victoria Park	1	1 to 2	5	No
Birchmount to Kennedy	0	1	5	No

Noise Assessment – Other LRT Facilities

Assessment Results

Bus Loop and Bus Terminals – Special analyses were conducted for Keele Station bus terminal, Caledonia Station bus loop and Don Mills Station bus terminal. Bus operations at the Caledonia bus loop and Don Mills bus terminal are expected to meet established MOE guidelines. Bus operations at Keele Station bus terminal are predicted to exceed the MOE guidelines by 4 decibels.

Traction Power Substations and Station Ventilation Shafts – Detailed design work is required to determine the noise impacts of the traction power substations and station ventilation systems and any necessary mitigation measures.

Recommendations

Bus Loop and Bus Terminals – No mitigation measures are required for Caledonia Station bus loop and the Don Mills bus terminal. A noise barrier wall will be provided at the Keele Station bus terminal.

Traction Power Substations and Station Ventilation Shafts – Noise impacts and mitigation measures to comply with the MOE/ TTC protocol will be developed for the traction power substations and station ventilation shafts during detailed design. This includes replacement of acoustical shielding where buildings are removed and silencing of power transformers and ventilation shafts.

Vibration Assessment – LRT Operations

- The LRT vehicles and trackwork to be specified for the Transit City program will use state of the art technology which is expected to produce reduced levels of vibration compared to the existing streetcar system.
- A vibration study has been completed for the Eglinton Crosstown LRT. The results indicate that vibration resulting from the proposed LRT vehicles is not expected to exceed Ministry of the Environment (MOE) / TTC Protocol criteria value limit of 0.1 mm/second at distances greater than 20 metres from the general running track areas.
- In some areas, where special track is required for turn back or storage of vehicles or where building setbacks are minimal, vibration levels are expected to be higher. In these areas, mitigation measures will be further considered for potential use of isolated track slabs during the design of the Project.

Commitments to Future Work

- **Consultations:** Consult with the public, property owners and stakeholder agencies during the design of the LRT alignment, stops/ stations, bus terminals and ancillary facilities.
- **Property Acquisition:** Proceed with a property protection plan during the early stages of design and acquire property by negotiation or expropriation, as required.
- **Planning Initiatives:**
 - Incorporate City of Toronto and City of Mississauga urban design criteria into the design of the LRT facilities.
 - Work with the Greater Toronto Airports Authority to select a preferred alignment and stop(s) at Pearson International Airport.
 - Complete a study to determine the LRT alignment from the intersection of Kennedy Road into Kennedy Station.
- **Construction Issues:** Conduct further research and analysis and develop plans including :
 - Noise, vibration and air emissions monitoring and mitigation
 - Traffic, transit and pedestrian management strategies
 - Consideration of measures to minimize impacts associated with cut and cover construction
 - Utility and municipal services relocation plans
 - Emergency response plans (Fire, Police and Emergency Medical Services)
 - Vegetation restoration, edge management and streetscape plans
 - Soil and groundwater management strategy
 - Erosion and sedimentation control plan
- **Permits and Approvals:** Secure necessary permits and approvals from the applicable regulatory authorities, including a determination under the Canadian Environmental Assessment Act.
- **Noise and Vibration Protocols:** Conduct a noise and vibration study, in accordance with protocols established with the Ministry of the Environment.

Next Steps

This Open House is the third of three open houses planned for the Eglinton Crosstown LRT. The Transit Project Assessment Notice of Commencement was issued November 13, 2009.

The key recommendations included in tonight's presentation panels were approved by the Toronto Transit Commission at its meeting of November 17, 2009. The approved Commission Report was forwarded to City of Toronto Council for consideration at its November 30/December 1, 2009 meeting.

This set of Open Houses (November/December 2009) is being held as part of the Transit Project Assessment. Following these Open Houses, we will review your input and proceed with finalizing our Environmental Project Report. Under the Commission's November 17, 2009 approval and subject to City Council approval, and following these public consultations, we will issue a Notice of Completion for the Transit Project Assessment in March 2010. Upon issuance of the Notice of Completion, the Ministry of the Environment will administer a 30-day posting for public comment on the MOE website (www.ene.gov.on.ca).

Once the Transit Project Assessment process is completed, we will proceed with detailed design and construction. During Summer 2010, we plan to proceed with construction of a section of the surface alignment (location to be determined) and we will tender a construction contract for the west portal area (at Black Creek Drive) in Fall 2010. Public consultation will continue throughout the design and construction of the Eglinton Crosstown LRT.



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: 416-338-0251
 - By Mail: Stephanie Rice – Project Manager
Toronto Transit Commission
Transit City Department
5160 Yonge Street, 13th Floor
Toronto, ON M2N 6L9
- Comments would be appreciated by December 15th, 2009.



Thank you for your participation.