

TORONTO TRANSIT COMMISSION REPORT NO.

MEETING DATE: NOVEMBER 17, 2009

SUBJECT: REQUEST FOR APPROVAL OF THE
EGLINTON CROSSTOWN LRT
TRANSIT PROJECT ASSESSMENT STUDY

ACTION ITEM

RECOMMENDATION

It is recommended that the Commission:

1. Approve the recommendation, of the joint City/TTC Eglinton Crosstown Light Rail Transit (LRT) Project Assessment Study for a LRT line from Kennedy Station to Pearson Airport including the alignment, stops, stations (and related surface facilities), bus terminals and traffic management, as described in the attached "Eglinton Crosstown Light Rail Transit, Draft Environmental Project Report, Executive Summary";
2. Note that 12 public consultation meetings were held and, in addition, seven more public consultation meetings will be held from November 23, 2009 to December 10, 2009. The Commission will be advised of the results of these meetings;
3. Forward this report to the Toronto City Manager with a request to submit a report to the November 30, 2009/December 1, 2009 Toronto City Council meeting recommending that City Council approve the recommendations of the Eglinton Crosstown LRT Transit Project Assessment Study and authorize staff to submit the Environmental Project Report (EPR) to the Ministry of Environment; and,
4. Forward this report to the Regional Municipality of Peel, the City of Mississauga, the Regional Municipality of York, the Greater Toronto Airports Authority, Metrolinx, and the Ontario Ministry of Transportation, for information.

FUNDING

Funding for the Eglinton Crosstown LRT was included under Transit City Approved Priority Projects shown "below the line" in the TTC 2010-2014 Capital Program, as approved by the Commission on September 24, 2009. Approval of a further \$134.5 million (in addition to existing approval of \$29.9 million) in project expenditures and commitments for 2009 was approved by the Commission on July 9, 2009 and by City of Toronto Council on September 30 and October 1, 2009 bringing the total approved budget to \$164.4 million.

The current City of Toronto Council approved funding for this project is \$9.7 million. The Interim Funding Memorandum of Agreement to provide funding to the end of 2009 is

currently being negotiated with Metrolinx, the City and the TTC for the Eglinton Crosstown LRT and the three other Transit City priority lines. A Performance Agreement for the full funding of the Eglinton Crosstown LRT will be negotiated by TTC and Metrolinx.

BACKGROUND

At its meeting of March 21, 2007, the Commission endorsed the *Toronto Transit City Light Rail Plan* as the basis for rapid transit expansion in the City of Toronto. This plan included the Eglinton Crosstown LRT line as one of seven lines forming a network of fast, reliable, environmentally-sustainable light rail transit throughout the City. Subsequently at its meeting of November 14, 2007, the Commission received the staff report entitled, *Transit City Light Rail Plan – Evaluation and Ranking of Routes*, which assessed all seven of the light rail lines which comprise the Transit City plan, and confirmed the earlier staff conclusion that the Sheppard East, Finch West, and Eglinton Crosstown LRT lines are the priority projects for the start of implementation of the plan.

On June 15, 2007, the Province of Ontario announced the *MoveOntario 2020* rapid transit plan for the Greater Toronto and Hamilton area (GTHA). *MoveOntario 2020* includes the TTC-City of Toronto *Transit Light Rail Plan*, which includes the proposed Eglinton Crosstown LRT line. In the spring of 2009 the Province announced funding of \$4.6 billion for the Eglinton Crosstown LRT project. The Eglinton Crosstown LRT is included as a priority project in the *Metrolinx Big Move Transit Plan* for the GTHA.

In the spring of 2008, the City of Toronto and Toronto Transit Commission initiated preliminary planning for a Transit Project Assessment Study for the Eglinton Crosstown LRT line. The Transit Project Assessment is conducted in accordance with the Transit Projects Regulation of the *Environmental Assessment Act* (EA). Under this Regulation, transit projects, such as the Eglinton Crosstown LRT, are exempt from the requirements under Part II of the *Act*. The new regulation has created a process which allows for an assessment of potential environmental impacts to be completed and approved within six months.

This report provides a summary of the public consultation process, results of the Transit Project Assessment Study and the rationale supporting the various elements of the recommended preferred design for the Eglinton Crosstown LRT line.

DISCUSSION

Purpose of the Eglinton Crosstown LRT Project

The objective of the Eglinton Crosstown LRT is to provide LRT service in the Eglinton Avenue corridor from Kennedy Station to Pearson International Airport that would be a

cost-effective way of providing excellent, reliable, high-capacity, environmentally-sustainable transit service thereby reducing auto dependency and supports other important City objectives related to creating a more liveable, attractive, and sustainable city.

Study Area

The study area for the Eglinton Crosstown LRT line extends from Kennedy Station in the east to Toronto Pearson International Airport in the west.

The Process to Date

The process, to date, has involved a number of study phases to develop a preferred LRT alignment and to assess the impacts of its construction and operation including:

1. A Feasibility Study was completed to assess the implementation of an LRT line within the defined Eglinton Avenue corridor. It identified key issues to be analyzed during the Transit Project Assessment Process.
2. Data collection and analysis on transportation facilities, the natural environment, and the social environment was completed for the full corridor.
3. For those areas where issues had been identified (including interchanges with Don Mills and Jane LRT lines, connection to the proposed Black Creek Drive LRT maintenance and storage facility), alternative solutions were developed and analyzed. The preferred option was incorporated into the preferred project design.
4. Environmental issues were identified and alternative methods were selected for the alignment to minimize and/or mitigate adverse impacts.
5. At the beginning of the process, various agencies and stakeholder groups were canvassed to determine interest in the project. Meetings were held with City of Toronto departments and key stakeholders including the Greater Toronto Airports Authority, Metrolinx, Ministry of Transportation, City of Mississauga, Toronto and Region Conservation Authority.
6. A comprehensive public consultation program was developed to allow the general public to review the proposed project, provide comments and outline any objections. To date twelve public consultation open houses (total attendance of 1,700 persons), have been conducted. Information was posted on the City and TTC websites. Opportunities were provided for the public to comment verbally, by email or by fax. Responses to questions from individuals have been provided. A summary of responses prepared for all concerns and comments will be included in the Environmental Project Report. To date, Open House presentation materials have included stop locations and

preliminary proposals for left-turn restrictions at 10 intersections, underground station locations (including entrances) and preliminary construction methods for both the surface and underground sections of the alignment.

7. To date, this process has resulted in the development of a preferred alignment and associated facilities for the Eglinton Crosstown LRT line to operate from Kennedy Station to Pearson International Airport.

A third series of public consultation open houses will be held between November 23, 2009 and December 10, 2009. During these open houses, the preferred surface stop layouts (including refined left-turning restrictions at 9 locations), underground stations (including refined entrance and vent shaft locations), emergency exit building, and traction power substation locations will be presented along with environmental impacts and mitigation measures arising from the construction and the operation of the Eglinton Crosstown LRT. The Commission will be advised on the results of these consultations.

Preferred Design

The Preferred Design for the 32.6-kilometre Eglinton Crosstown LRT includes:

1. A 14.6-kilometre west surface section from Pearson International Airport to Black Creek Drive, including a new bridge crossing Highway 401, west of Renforth Drive;
2. A 10.5-kilometre central underground section from Black Creek Drive to Brentcliffe Road; and
3. A 7.5-kilometre east surface section from Brentcliffe Road to Kennedy Station (with an underground section for Don Mills Station at Don Mills Road).

As shown in Exhibit 1 (attached) the alignment includes 28 surface stops and 13 underground stations. Typical surface stop spacing will be in the range of 500 to 600 metres, while the underground station spacing will be in the range of 850 metres. Platforms will be 90 metres in length to accommodate three 30 m long LRT vehicles. Special track work areas (for turn back or temporary storage of LRT vehicles) will be provided at twelve locations, as described in the attached "Draft Environmental Project Report – Executive Summary".

Portals (transition from surface to underground LRT) will be provided at four locations:

1. East of Black Creek Drive,
2. East of Brentcliffe Road, and

3. East and west of Don Mills Road to provide an underground station at Don Mills Road.

Surface Sections

The design proposed on the surface sections of the alignment consists of two LRT tracks operating on an approximately 150 mm raised median in the middle of the road. Midblock, there will be two traffic lanes, plus a bicycle lane, on either side of the LRT. Generally, at signalized intersections, the raised right-of-way is lowered and the cross-section will accommodate a left-turn lane and LRT passenger platforms.

A minimum of two lanes of traffic in each direction will be maintained along the LRT corridor:

1. Between Commerce Road and Weston Road, Eglinton Avenue will be widened to allow provision of two through traffic lanes in each direction.
2. Between Weston Road and Black Creek Drive and between Brentcliffe Road and Kennedy Road, two of the existing six traffic lanes will be converted to LRT right-of-way, with four traffic lanes retained – two in each direction.

In order to provide fast and reliable transit service, changes to traffic operations are required. Traffic will be permitted to cross the tracks at signalized intersections only. Unsignalized intersections and driveways will be limited to right-in/right-out operation. U-turns will be permitted from left-turn lanes at signals to assist motorists, who can no longer make left-turns at unsignalized locations, to reach their destination.

In addition, new and innovative left-turn arrangements will be implemented at nine stop locations, in order to provide fast and reliable transit service while still accommodating and, in some instances, making easier, left-turning movements. At the Martin Grove, Kipling, Islington, Royal York, Scarlett, Jane, Victoria Park, Pharmacy and Birchmount intersections, “traditional” left-turns from Eglinton Avenue will be prohibited. These will be replaced by having left-turns rerouted to a new signalized U-turn located beyond the intersection. Motorists will travel to the U-turn, negotiate the U-turn and then turn right to complete the turning movement.

New cycling lanes will be introduced along Eglinton Avenue on the surface sections of the alignment, with the exception of Martin Grove Road Avenue to Scarlett Road, where an adjacent parallel off-road bike path already exists.

The project will include off-street bus facilities at three locations:

1. A 4-bay bus terminal at Keele Station,

2. A bus loop (with one bus bay) at Caledonia Station, and
3. A 7-bay bus terminal at Don Mills Station.

Underground Section

The typical underground station will include one main and two secondary entrances. The entrances will be connected to a station concourse level, which is an underground walkway. To provide a high level of accessibility, elevator, stair and escalator connections will be provided between each level of the station. The typical station layout includes four ventilation shafts.

A total of six emergency exit buildings (for the evacuation of LRT passengers in the event of an emergency) are proposed along the underground segment. Seventeen traction power substations are proposed every 1.5 to 2.0 kilometres. The locations of both the emergency exit buildings and the traction power substations will be subject to further review and refinement during detailed design.

Property Requirements

As of November 5, 2009, the following permanent property requirements have been identified:

1. Full acquisition, (including demolition of buildings and relocation of existing businesses or residences) on 45 private properties;
2. Partial acquisition on 53 other private properties; and
3. Full or partial acquisition on 55 properties under municipal, provincial or federal jurisdiction.

Temporary property requirements for construction of the Eglinton Crosstown LRT will be confirmed during design.

Following approval of the recommendations included in the EPR report by City Council, TTC and the City of Toronto will:

1. Proceed with a Property Protection Study during the early stages of the design;
2. Continue negotiations with the Greater Toronto Airports Authority for property required for the Project;

3. For properties within the City of Toronto (including temporary construction easements) the City of Toronto will acquire property by negotiation or expropriation, as required; and
4. For properties required within the City of Mississauga (west of Renforth Drive) (including temporary construction easements), the City of Toronto will co-ordinate property acquisition activities with the City of Mississauga.

Schedule

The Transit Project Assessment process will be completed in May 2010. Following this process, TTC will proceed with procurement of tunnel boring machines. During Summer 2010, TTC plans to proceed with construction of a section of the surface alignment (location to be determined) and will tender a construction contract for the west portal area (at Black Creek) in Fall 2010.

The Eglinton Crosstown LRT will be implemented in three stages:

1. Stage 1: Commerce Stop to Eglinton West Station – 2016,
2. Stage 2: Eglinton West Station to Kennedy Station – 2018, and
3. Stage 3: Commerce Stop to Pearson International Airport – 2020.

Transit Project Assessment Process

Under the Transit Projects Regulation of the *Environmental Assessment Act* (EA), transit projects, such as the Eglinton Crosstown LRT, are exempt from the requirements under Part II of the *Act*. The new regulation has created a process which allows for an assessment of potential environmental impacts to be completed and the report to gain approval within six months.

The preliminary planning has been completed for the project and the Transit Project Assessment Process Notice of Commencement was issued November 16, 2009. Public consultation has been included throughout the process. The attached report, entitled "Eglinton Crosstown LRT, Transit Project Assessment, Draft Environmental Project Report Executive Summary" provides additional details on:

1. The process followed to develop the project;
2. The rationale for the design elements selected for the Eglinton Crosstown LRT; and,

3. A summary of the environmental impacts of the project and net effects following proposed mitigation measures.

Complete details on the Eglinton Crosstown LRT line, including plans of the 32.6-kilometre corridor from Kennedy Station to Pearson International Airport, will be contained in the project's Environmental Project Report, which will be finalized in early 2010. The Environmental Project Report will be placed on the public record for the mandatory 30-day review period in spring 2010.

Further Work to be Done

Connection at Kennedy Station

Design investigations for the connection of the Eglinton Crosstown LRT in the Kennedy Station area is part of a separate project. The design is addressing improved integration between the existing Bloor-Danforth subway, the Scarborough RT, the Transit City Eglinton Crosstown and Scarborough Malvern lines, TTC buses, and GO Transit.

Connection to Pearson International Airport

The Eglinton Crosstown LRT route to Pearson International Airport was determined through the course of the study. The preferred route to the boundary of the Pearson Airport site at Silver Dart Drive has been developed in consultation with the City of Mississauga and has been endorsed by the Ministry of Transportation and the Greater Toronto Airports Authority and presented to the public at an Open House held on September 2, 2009.

The alignment from Silver Dart Drive to the Airport terminal lands will be determined following completion of the Airport Precinct Study and the Greater Toronto Airports Authority Transportation Master Plan. Subsequently, TTC and the City will comply with applicable environmental assessment regulations for the finalization of the alignment on the federally-owned Airport terminal lands. This includes preparation and submission of an EA Amendment to the ECLRT EPR if required under the Transit Projects Regulation of the Environmental Assessment Act (EA) and any documentation required under the Regulations of the Canadian Environmental Assessment Act (CEAA) upon determination by TTC, City, GTAA and Metrolinx of the preferred alignment within the Pearson Airport Lands

Options to Increase Speed of the Eglinton Crosstown Line

In support of interest from Metrolinx to increase the speed of operation of the Eglinton Crosstown LRT line, future consideration and study will address the possibility of deferring the construction of certain stops on the west section of the line.

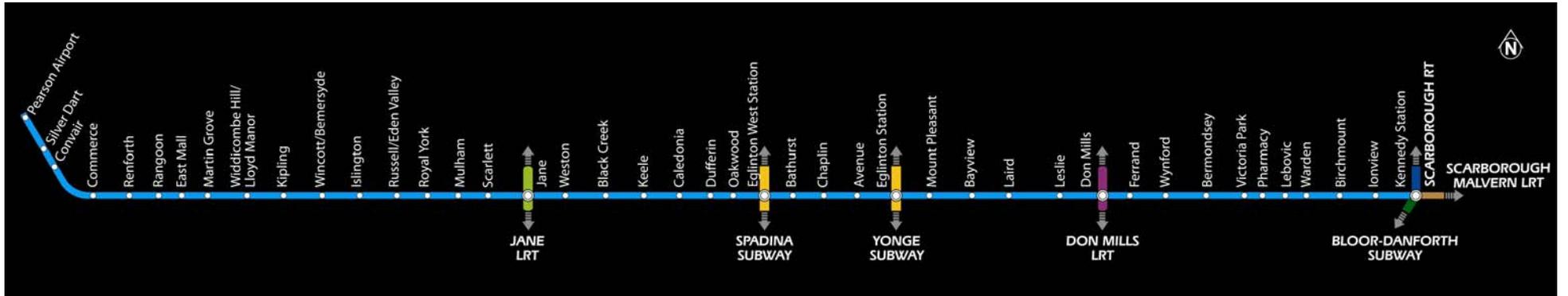
JUSTIFICATION

The Eglinton Crosstown Light Rail project is a component of the *Toronto Transit City Light Rail Plan*, the Province's *MoveOntario 2020* Plan and Metrolinx Regional Transportation Plan. The recommendations of the Eglinton Crosstown LRT Transit Project Assessment Study provide a cost-effective way of providing excellent, reliable, high-capacity, environmentally-sustainable transit service thereby, reducing auto dependency in this corridor and creating a more liveable, attractive, and sustainable city.

November 5, 2009
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Attachments: Exhibit 1
 Draft Environmental Project Report – Executive Summary

Exhibit 1 Key Plan – Eglinton Crosstown LRT



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Toronto Transit Commission/City of Toronto

**EGLINTON CROSSTOWN LIGHT RAIL TRANSIT
DRAFT ENVIRONMENTAL PROJECT REPORT
EXECUTIVE SUMMARY**

NOVEMBER 5, 2009

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1. INTRODUCTION

The Toronto Transit Commission (TTC) and City of Toronto have undertaken a Transit Project Assessment for the 33 kilometre long Eglinton Crosstown Light Rail Transit (Eglinton Crosstown LRT) corridor that would link the Pearson International Airport with the Kennedy Station. The Eglinton Crosstown LRT will connect with the Spadina Subway Line, the Yonge Subway Line, the Scarborough RT and the planned Jane Street LRT, Don Mills Road LRT, Scarborough-Malvern LRT, and Mississauga BRT. This study recommends that bus services along Eglinton Avenue and the Airport Link be replaced by Light Rail Transit (LRT) with electrically powered light rail vehicles operating in a designated right-of-way located primarily in the centre of the street.

This change in transit service along Eglinton Avenue and the Airport Link is recommended as part of the TTC Transit City Plan for a widely-spaced network of electric light-rail lines throughout the city, with seamless interconnections to existing and future transit services. The Eglinton Crosstown LRT is one of seven new lines being planned as part of Transit City to provide a new high quality transit service along several busy existing transit routes.

1.1 Study Area

Two separate study areas were adopted for the Eglinton Crosstown LRT. The first area consists of the section of the Eglinton Crosstown LRT located along Eglinton Avenue, 500 metres to the north and south, just west of Renforth Drive to the west and just east of Kennedy Road to the east. The second area (Airport Link) was developed to investigate the connection to Pearson International Airport, which is bounded by Dixon Road to the north, inside Pearson International Airport lands to the west, Eglinton Avenue to the south and Martin Grove Road to the east. Two major corridors were considered originally for the Airport Link including Highway 27 – Dixon Road and Commerce Boulevard/Renforth Drive – Silver Dart Drive.

Several related studies are being carried out concurrent with this Eglinton Crosstown LRT Transit Project Assessment to investigate:

- the alignment of the Eglinton Crosstown LRT within Pearson International Airport lands (TTC, Metrolinx and Greater Toronto Airports Authority, to be initiated);
- the proposed Mississauga/ GO Transit BRT terminal at Commerce Boulevard (City of Mississauga);
- the proposed Mississauga/ GO Transit BRT extension from Commerce Boulevard to O'Kipling Station (via Eglinton Avenue and Highway 427) (Metrolinx, to be initiated);
- the proposed TTC Maintenance and Storage Facility located north of Eglinton Avenue west of Black Creek Drive (TTC);
- the Jane Street LRT, the Don Mills Road LRT and the Scarborough-Malvern LRT (TTC);
- improvements to the Highway 427/Highway 401 interchange (MTO);
- Georgetown Corridor Rail Expansion (Metrolinx); and,

- the connection of the Eglinton Crosstown LRT to Kennedy Station east of Kennedy Road (TTC).

The connection of the Eglinton Crosstown LRT with the Kennedy Station is being investigated as part of a separate Scarborough Rapid Transit (SRT) Project. The design is addressing improved integration between the existing subway, the SRT, the Eglinton Crosstown LRT and Scarborough-Malvern LRT lines and buses. The connection of the Eglinton Crosstown LRT to Kennedy Station will be the subject of an EA amendment.

The connection of the Eglinton Crosstown LRT with the Airport Terminal lands will be determined following completion of Metrolinx's Airport Precinct Study and the Greater Toronto Airports Authority Transportation Master Plan. Subsequently, TTC and the City will comply with applicable environmental assessment regulations for the finalization of the alignment on the federally-owned airport lands.

The preferred connection of the Eglinton Crosstown LRT with the TTC Maintenance and Storage Facility at Black Creek Drive is reflected in this Transit Project Assessment, although the TTC Maintenance and Storage Facility itself is undergoing a separate environmental assessment.

1.2 Study Process – Transit Project Assessment (TPA)

This study was conducted following Ontario's Transit Project Assessment process (TPA) in accordance with Ontario Regulation 231/08 for Transit Projects and Greater Toronto Transportation Authority Undertakings (Transit Projects Regulation). The Transit Projects Regulation exempts proponents of all public transit projects from the requirements under Part II of the *Environmental Assessment Act* and creates a process that certain projects must follow in order to be exempt. The TPA process is a proponent-driven, self-assessment of potential impacts of a transit project on the environment that provides framework for an accelerated consultation process. While the Ministry of the Environment does not approve the project, the Minister does provide a notice to proceed and can request additional consideration if the Minister deems that the project has negative impacts on matters of provincial importance.

1.3 Policies

1.3.1 Toronto Official Plan

The Toronto Official Plan (OP) presents a vision for a more liveable City and directs growth to specific areas within the City. Generally, potential growth areas are well served by transit, the existing road network and existing infrastructure. The areas that have the most potential to accommodate growth and redevelopment are the Downtown and Central Waterfront, the Centres, the Avenues, and the Employment Districts.

Avenues are important corridors along major streets where redevelopment and growth is encouraged. Reurbanization and growth on the Avenues is intended to create new housing and job opportunities as well as improvements to the pedestrian environment, making the

area attractive to residents, workers, and visitors alike. Growth and redevelopment of the Avenues should be supported by high quality transit services combined with urban design and traffic engineering practices that promote a street that is safe, comfortable and attractive. The east and west portions of Eglinton Avenue are identified as Avenues in the OP.

1.3.2 Toronto Transit City Light Rail Transit Plan

In 2007, the TTC developed a plan that built upon the transit concepts in several studies, including the Toronto Official Plan, the TTC Ridership Growth Strategy, Building a Transit City and the Mayor's "Transit City" Platform (2006), and recommended a network of electric light-rail lines throughout the City, each with its own right-of-way. There are seven new lines proposed, with a total length of 120 kilometres, all connecting with the City's existing and planned rapid transit routes. By 2031, it is estimated that the new lines would carry 175 million riders per year.

2. EVALUATION OF MAJOR FUNCTIONAL DESIGN ALTERNATIVES

2.1 Airport Link

Two corridors and eight alternative routes were identified and evaluated for the Airport Link. The major constraints for each of the alternatives included highway crossings, geometric and right-of-way constraints, and connections with inter-regional transit. The final recommended route travels along Eglinton Avenue to Commerce Drive, across Highway 401, to Convair Drive, and north on Silver Dart Drive. This route was recommended based on two major factors:

- it offers the best benefit in terms of connection and transfer convenience to Mississauga/GO BRT and Pearson International Airport; and,
- it has the least technical constraints including shortest guideway span across Highway 401 and with no impacts to existing on/off ramps.

2.2 Black Creek Maintenance and Storage Facility Connection

The segment between Weston Road and Black Creek Drive is important as it is the proposed location for the TTC Maintenance and Storage Facility, which is planned to serve three LRT lines. A study for this area was conducted to recommend an Eglinton Crosstown LRT alignment that provides a high quality transit service and flexible connection to the Maintenance and Storage Facility while maintaining the opportunities for development and growth consistent with the City of Toronto's Official Plan. Key technical constraints included bridge structures, area topography, traffic conditions, railroads, and the Black Creek Valley. As stated in Section 1.1. of this document, the proposed Maintenance and Storage Facility was not within the scope of this study.

Six alternatives were identified and evaluated. The recommended alignment is a surface alternative, which incurs the lowest cost, and allows for a secondary (emergency)

connection to the proposed Maintenance and Storage Facility. In addition, the traffic analyses performed for the surface alternative demonstrated that a high quality connection can be provided to the proposed Maintenance and Storage Facility (including sufficient LRV loading and unloading capacity).

2.3 Don Mills LRT Interface

A separate study for Eglinton Avenue and Don Mills Road intersection was conducted. This intersection is proposed to be the point of interface for two LRT lines, the Eglinton Crosstown LRT and the Don Mills LRT. The objective of this study was to develop and evaluate transportation alternatives, conduct traffic analyses for the alternatives and make recommendations for the area surrounding the intersection.

Sixteen alternatives were identified and evaluated. The recommended alternative places the Eglinton Crosstown LRT underground and Don Mills LRT at surface with a bus terminal on the northeast quadrant of Eglinton Avenue/Don Mills Road intersection. This alternative provides the highest quality of Eglinton Crosstown LRT performance incurring little delay at the Eglinton Avenue and Don Mills Road intersection since it will operate underground without any type of signal delay due to general traffic and the Don Mills LRT. It allows for safer passenger transfers as passengers will transfer directly from Don Mills LRT platform down the stairs to the Eglinton Crosstown LRT platform and vice-versa without conflict with the general traffic. Also, passenger transfers between the Eglinton Crosstown LRT and the bus terminal will be underground with no conflict with the general traffic. In addition, there is less potential for delay to feeder buses entering the bus terminal located in the northeast quadrant of the intersection.

3. PROJECT DESCRIPTION

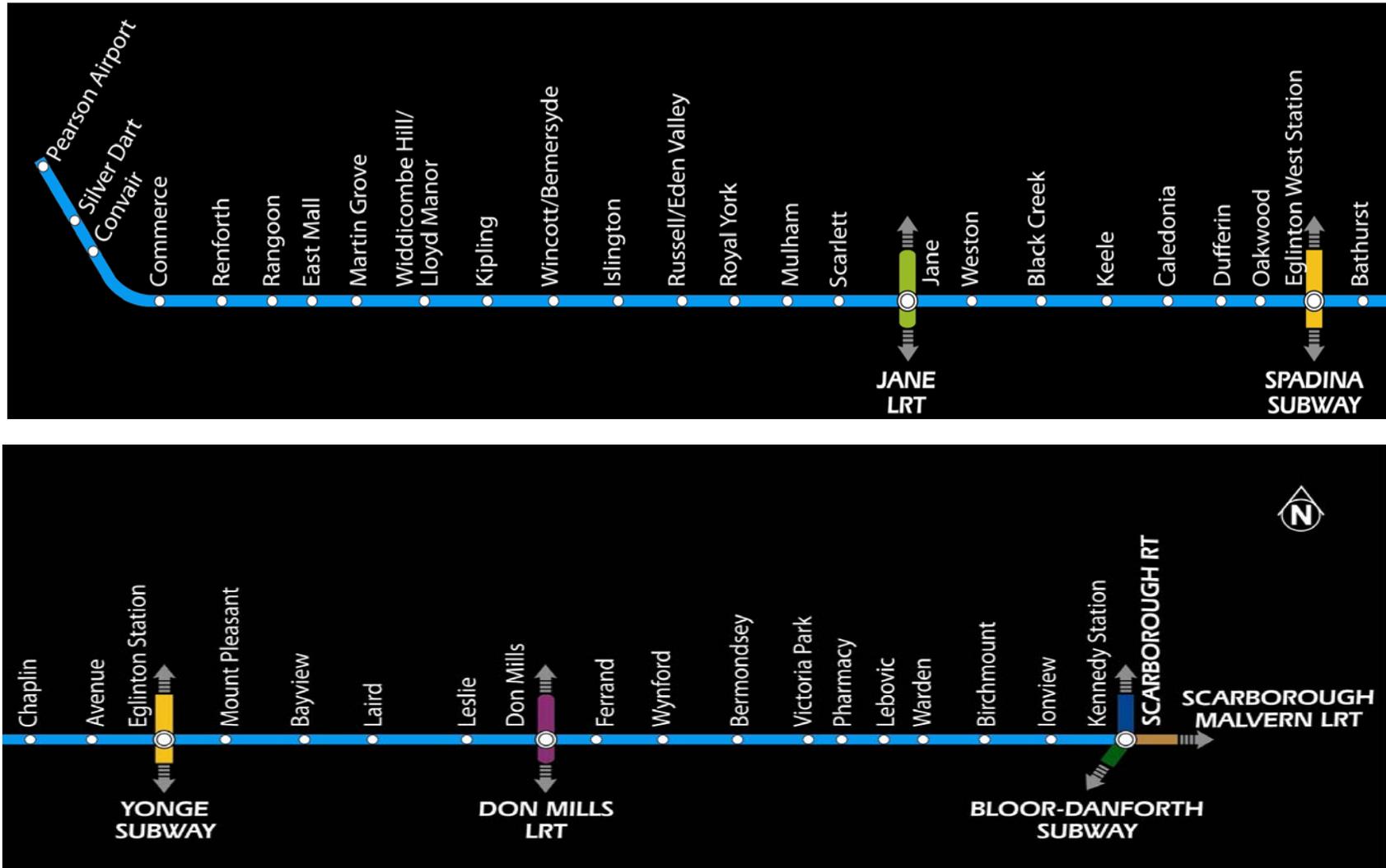
The Eglinton Crosstown LRT includes the following key design components:

- LRT at surface from Pearson International Airport to east of Black Creek Drive, underground from east of Black Creek Drive to east of Brentcliffe Road, then at surface from east of Brentcliffe Road to Kennedy Road including a short underground section at Don Mills Road;
- 28 surface stops and 13 underground stations;
- left turn prohibitions crossing the surface LRT right-of-way, except for signalized intersections;
- left turn prohibitions from Eglinton Avenue to Martin Grove Road, Kipling Avenue, Islington Avenue, Royal York Road, Scarlett Road, Jane Street, Victoria Park Avenue, Pharmacy Avenue and Birchmount Road.
- left turn prohibitions from Jane Street and Pharmacy Avenue to Eglinton Avenue.
- new bridge over Highway 401 to connect Convair Drive to Commerce Boulevard;
- widening of several bridges associated with Mimico Creek, , West Don River, and East Don River, and a culvert extension at Wilson Brook;
- traction power substations;

- provision of special track work, emergency exit buildings and ventilation shafts in underground sections; and,
- landscaping, streetscaping and associated amenities.

Exhibit 1 presents a key plan of the Eglinton Crosstown LRT.

Exhibit 1 Eglinton Crosstown LRT Key Plan



3.1 Runningway

The Eglinton Crosstown LRT runningway includes dedicated light rail tracks travelling in both directions along the centerline of Eglinton Avenue, Commerce Boulevard, Convair Drive and Silver Dart Drive between Pearson International Airport and Kennedy Road. The runningway will be located at surface from Pearson International Airport to Keele Street and from Brentcliffe Road to Kennedy Road, except at Don Mills Road where it will be underground. The runningway will be underground from Keele Street to Brentcliffe Road.

Typically, the LRT alignment will be located at the centre of the roadway on a raised median to separate the LRT traffic and the general traffic between traffic signals. At intersections, the tracks will be constructed at the same level as the road.

To provide operational flexibility and allow LRVs to change travel directions from one track to another, crossover and storage tracks will be provided at a number of locations.

3.2 Stops

Stops are located at surface and at major intersections. A total of 28 stops are proposed including 25 stops along Eglinton Avenue, and one stop each along Commerce Boulevard, Convair Drive and Silver Dart Road. Average stop spacing is approximately 400 to 500 metres.

Most intersections will usually have farside platforms for the LRT with vehicular left turn lanes opposite to minimize space requirements. Some intersections will have nearside, parallel (platforms directly across from one another) or centre platforms, and with or without vehicular left turn lanes. Surface stop platforms are 90 metres long. Exhibit 2 presents a typical cross section and Exhibit 3 presents a typical plan of a surface stop.

3.3 Stations

A total of 13 underground stations are proposed at major intersections. The average station spacing is approximately 850 metres.

The typical underground station will generally include one main and two secondary entrances. The entrances will be connected to a station concourse level, which is an underground walkway. Stairs, elevator and escalator connections will be provided between each level of the station. Generally, four fire ventilation shafts will be incorporated into stations. Exhibit 4 presents a typical cross section of the station layout and Exhibit 5 presents a typical station plan.

Exhibit 2 Typical Surface Stop - Cross Section

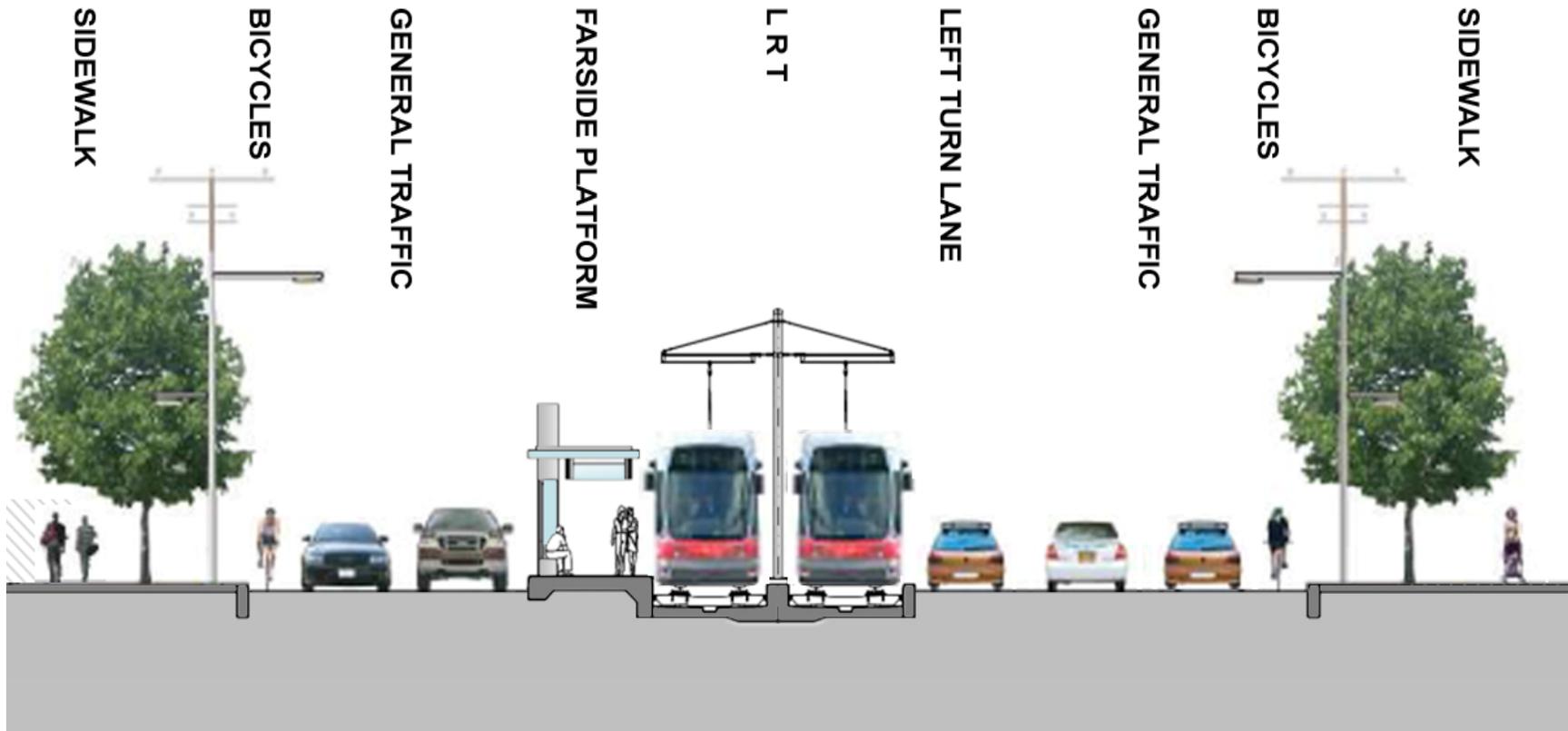


Exhibit 3 Typical Surface Stop - Plan

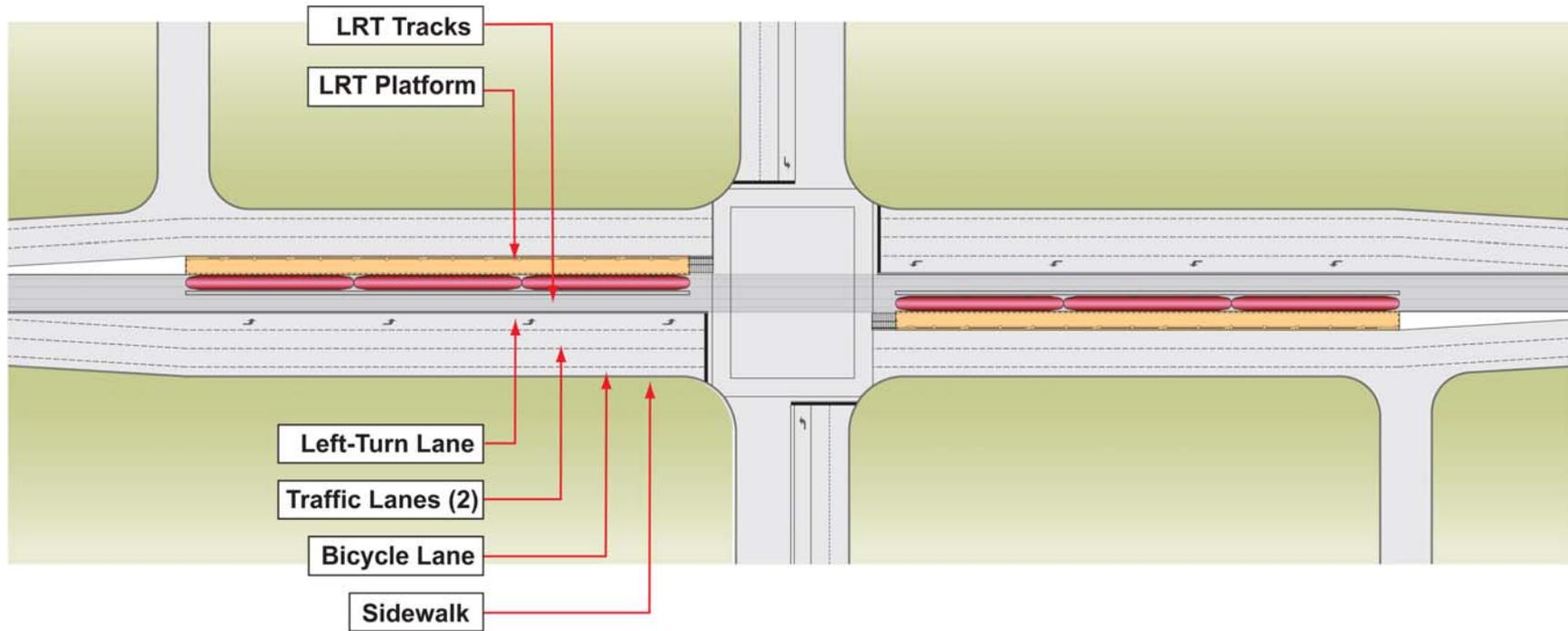


Exhibit 4 Typical Underground Station - Cross Section

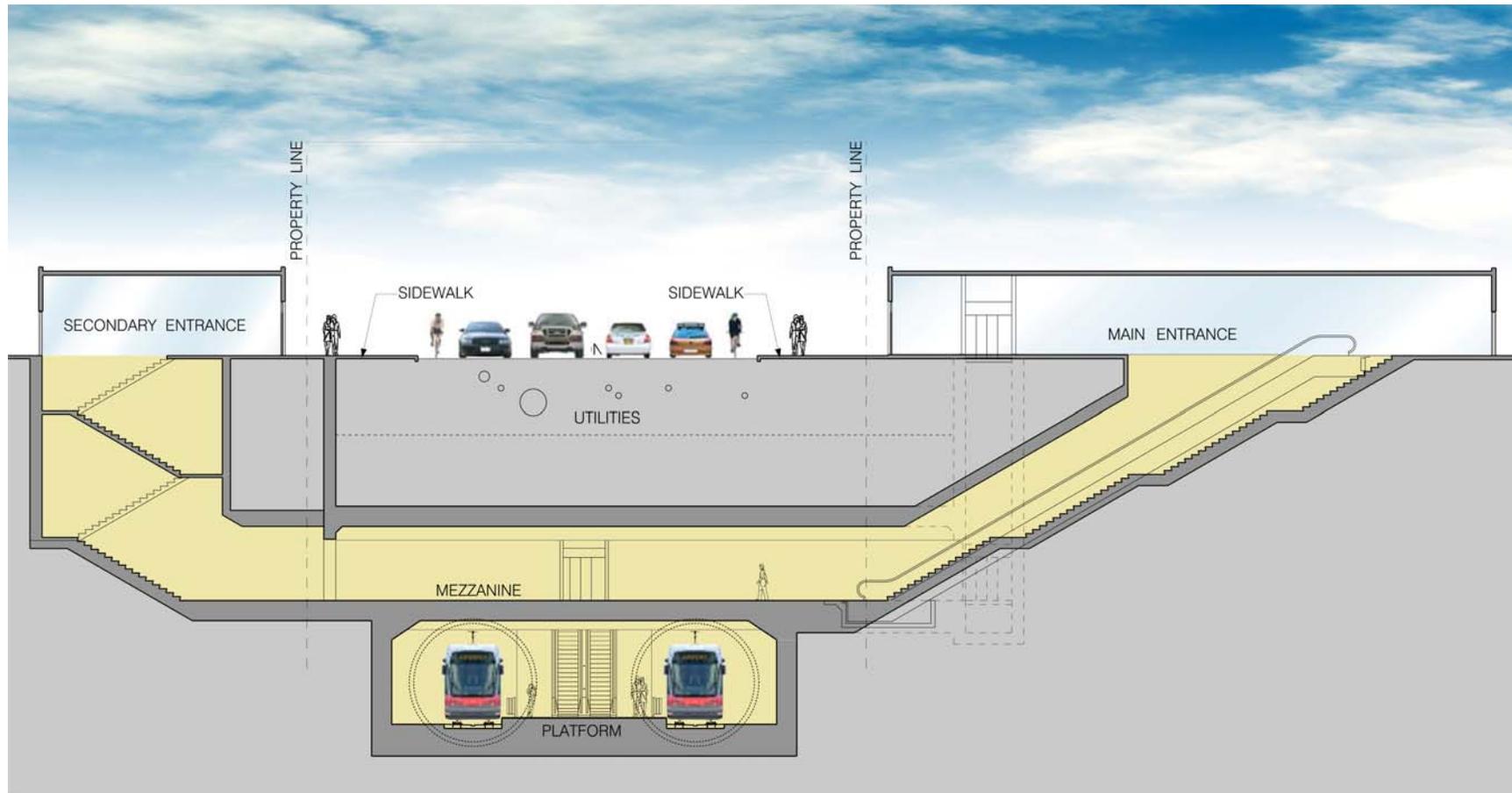
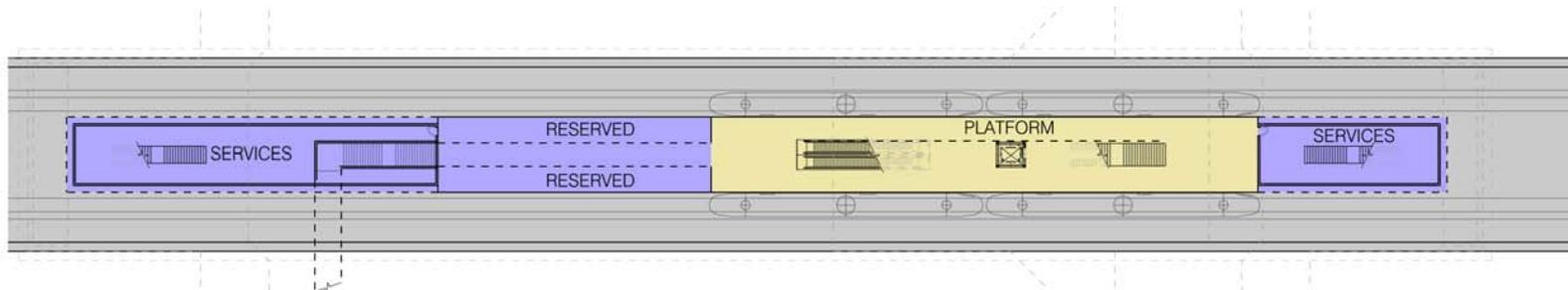
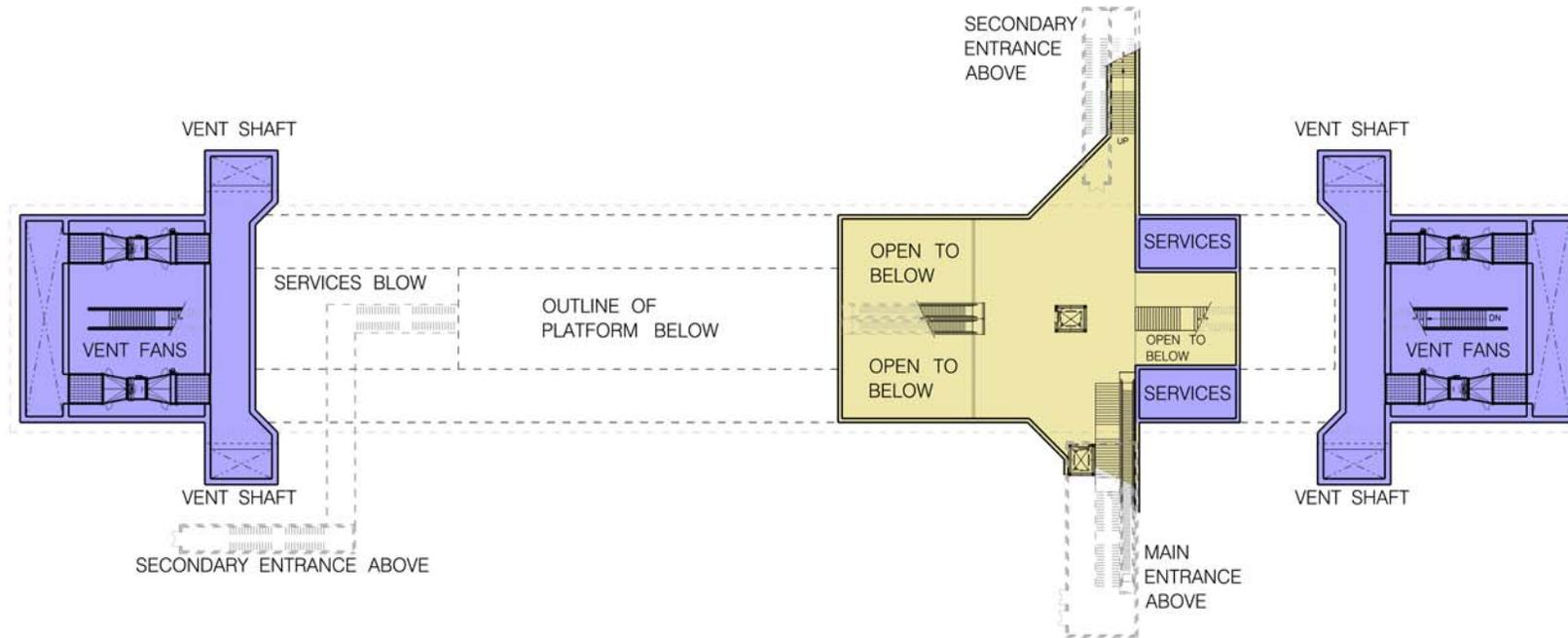


Exhibit 5 Typical Underground Station – Plan



Station Platform



Station Concourse

3.4 Portals

Portals are the approach entrances where the LRT surface section transitions into the underground section. The west portal is currently planned west of Keele Street and the east portal is currently planned east of Brentcliffe Road. Additional portals are also located east and west of Don Mills Road to provide a grade separation with the Don Mills LRT and the Eglinton/Don Mills intersection.

3.5 Bus Terminals

Off-street bus facilities are proposed at Keele Station (4-bay bus terminal), Caledonia Station (bus loop) and Don Mills Station (7-bay bus terminal). Exhibits 6 and 7 present the layout of the two bus terminals.

3.6 Special Track Work, Emergency Exit Buildings, and Traction Power Sub-Stations

3.6.1 Special Track Work

Proposed locations for operational crossover tracks are: between Commerce Boulevard and Renforth Drive; east of Martin Grove Stop; west of Wincott/Bemersyde Stop; between CNR/CPR rail line and TTC Maintenance and Storage yard; between TTC Maintenance and Storage yard and Black Creek Stop; east of Keele Station; east of Eglinton West Station; east of Eglinton Station; west of Laird Station; and east of Pharmacy Stop. Proposed locations for tail tracks or storage tracks are: north of Silver Dart Stop, north of Commerce Boulevard, west of Islington Stop; east of Jane Stop; west of Keele Station; west of Eglinton West Station; west of Eglinton Station; east of Laird Station; and west of Don Mills Station.

3.6.2 Emergency Exit Buildings

A total of six Emergency Exit Buildings (EEBs) are proposed along the underground segment. Exhibit 8 presents the location of the EEBs. The EEBs are located between the following roads:

- Caledonia Road and Dufferin Street (EEB 1 at Little Boulevard);
- Allen Road and Bathurst Street (EEB 2 at Glen Cedar Road);
- Avenue Road and Yonge Street (EEB 3 at Eglinton Park/North Toronto Community Memorial Centre);
- Yonge Street and Mount Pleasant Road (EEB 4 at Dunfield Avenue);
- Mount Pleasant Road and Bayview Avenue (EEB 5 at Banff Road); and,
- Bayview Avenue and Laird Drive (EEB 6 at Rumsey Road).

Exhibit 6 Don Mills Bus Terminal

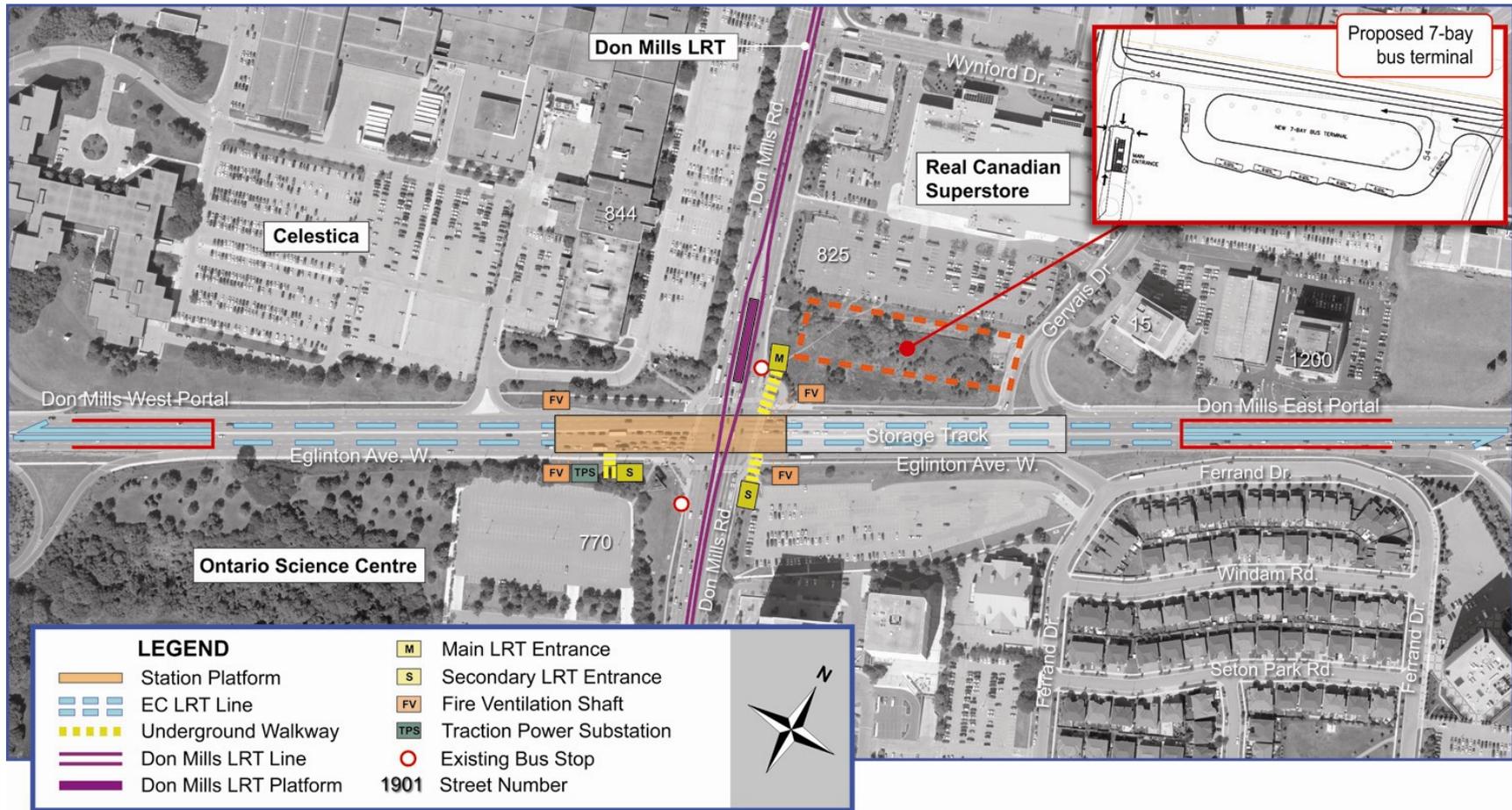


Exhibit 7 Keele Bus Terminal

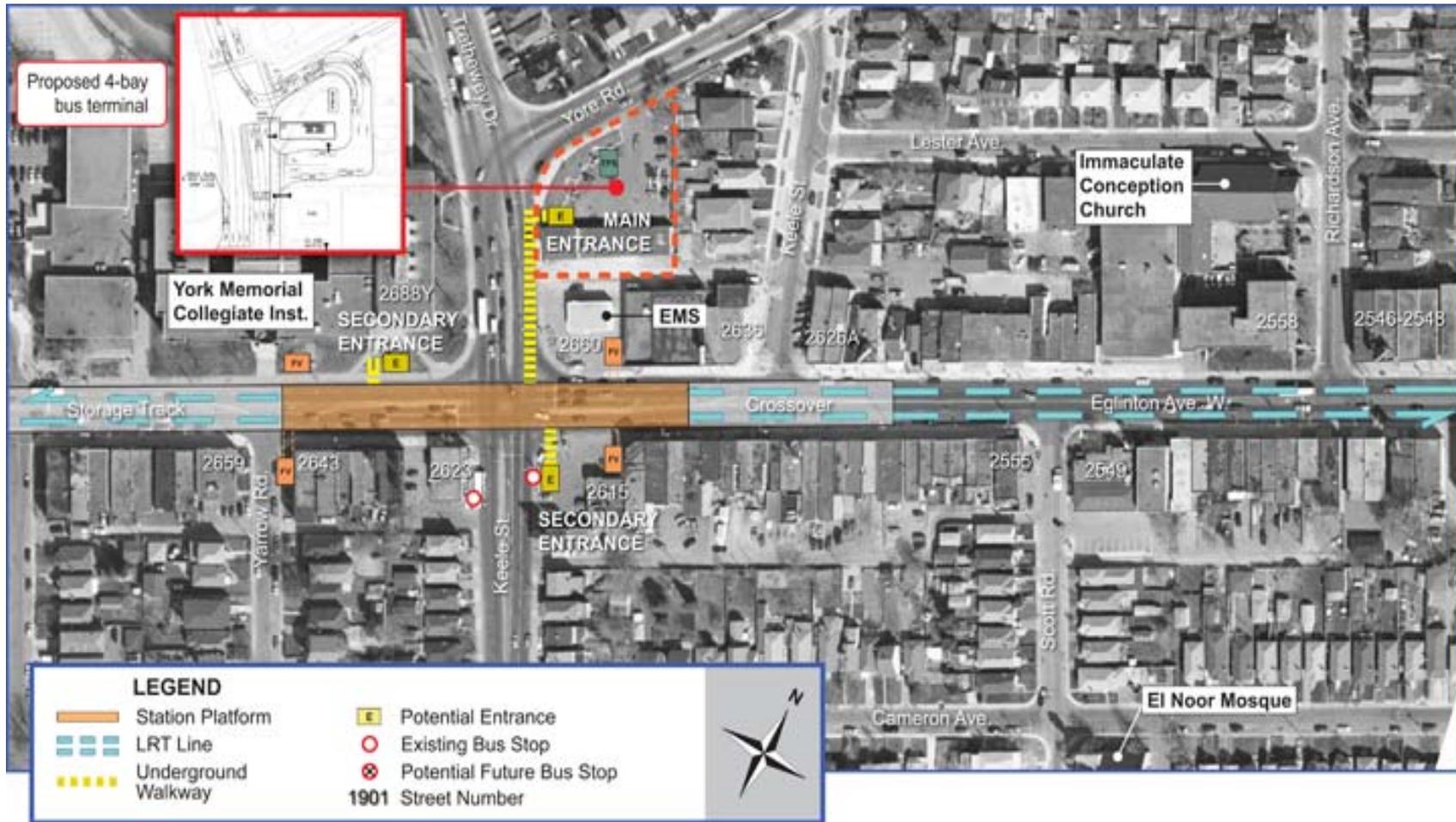
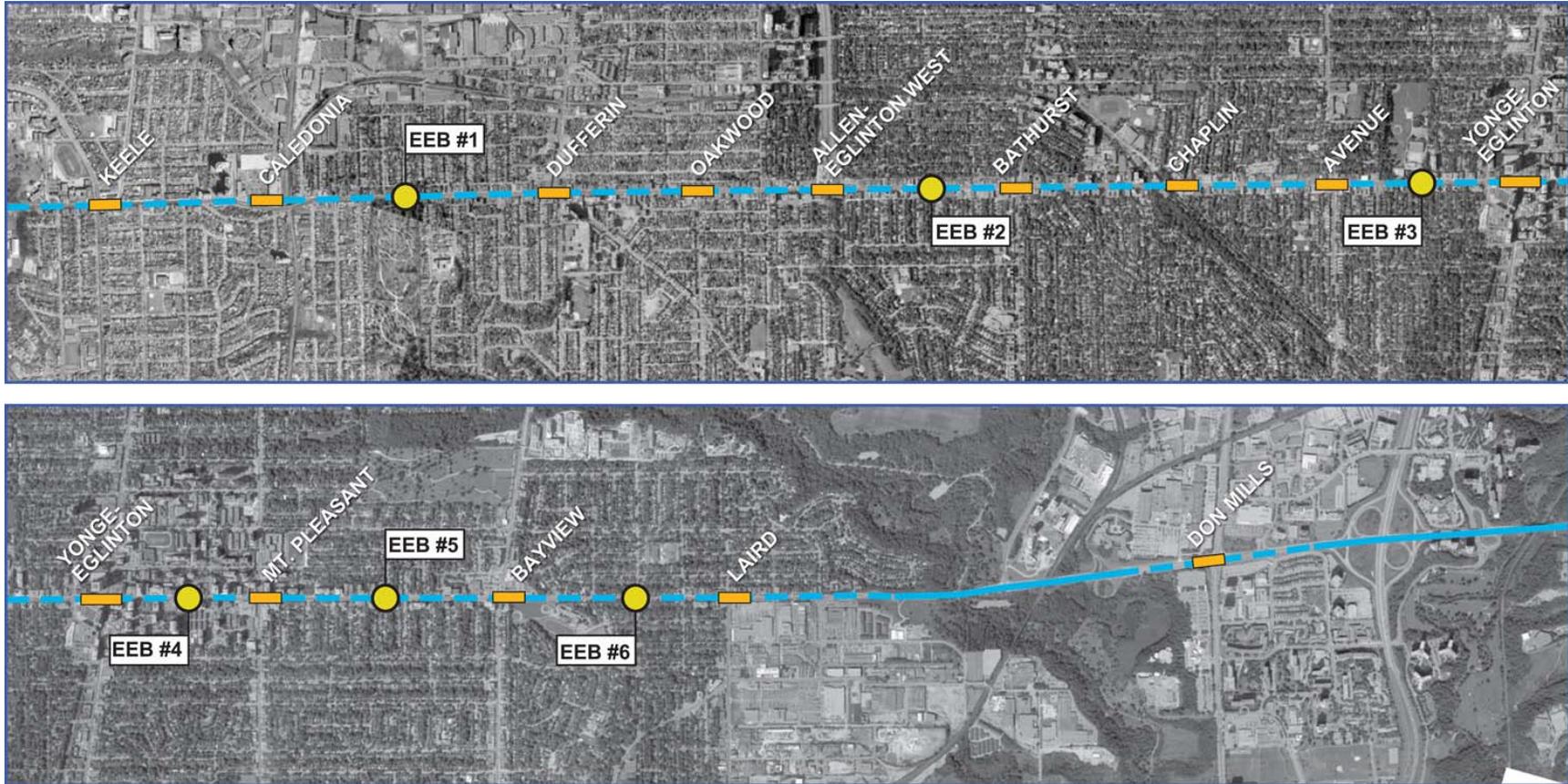


Exhibit 8 Location of Emergency Exit Buildings (EBBs)



3.6.3 Traction Power Substations

Seventeen traction power substations are proposed along the Eglinton Crosstown LRT with an average of 1.5 kilometre spacing for the surface sections and 2.0 kilometre spacing for the underground sections. Requirements for traction power substations at Pearson International Airport and Kennedy Station are not included in the scope of the Environmental Project Report. Exhibit 9 presents the location of the traction power substations (TPSS). The proposed TPSS locations are close to the following:

- TPSS #1 - Silver Dart Stop;
- TPSS #2 - Renforth Stop;
- TPSS #3 - East Mall Stop;
- TPSS #4 - Widdicombe Hill/Lloyd Manor Stop;
- TPSS #5 - Islington Stop;
- TPSS #6 - Mulham Place Stop;
- TPSS #7- Jane Stop;
- TPSS #8 - Keele Station;
- TPSS #9 - Dufferin Station;
- TPSS #10 - Bathurst Station;
- TPSS #11 - Eglinton Station;
- TPSS #12 - Bayview Station;
- TPSS #13 - the East Portal;
- TPSS #14 - Don Mills Station;
- TPSS #15 – Wynford Stop;
- TPSS #16 – Victoria Park Stop; and,
- TPSS #17 – Warden Stop.

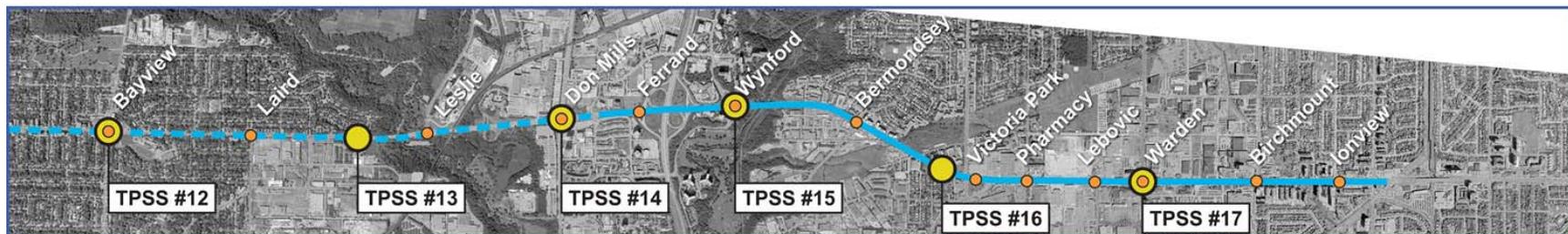
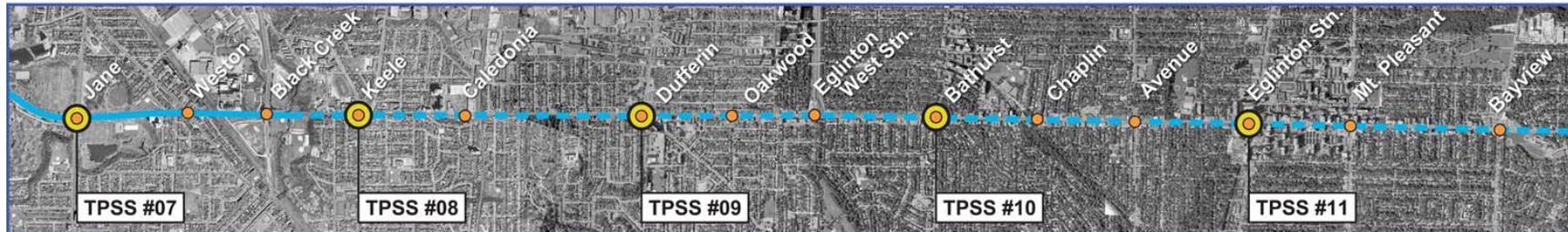
3.7 Roadway, Intersection and Bridge Modifications

3.7.1 Roadway Modifications

Two lanes of traffic will be maintained in each direction along Eglinton Avenue. Where two lanes of traffic in each direction currently exist from Martin Grove Road to Weston Road and from Black Creek Drive to the west portal, Eglinton Avenue will be widened by one lane in each direction to accommodate the LRT. Where three lanes of traffic currently exist from Weston Road to Black Creek Drive and Brentcliffe Road to Kennedy Road, one lane of traffic in each direction will be removed to accommodate the LRT. A second southbound lane along Commerce Boulevard from Matheson Boulevard to Eglinton Avenue will be constructed for bus only use to facilitate bus movements in the vicinity of the City of Mississauga BRT/GO Terminus at Eglinton Avenue/Commerce Boulevard intersection.

The area of Eglinton Avenue crossing under the eight bridges at Highways 427 and 27 will require further widening, since the eastbound and westbound LRT tracks will be separated to accommodate the bridge support piers between the tracks.

Exhibit 9 Location of Traction Power Substations (TPSS)



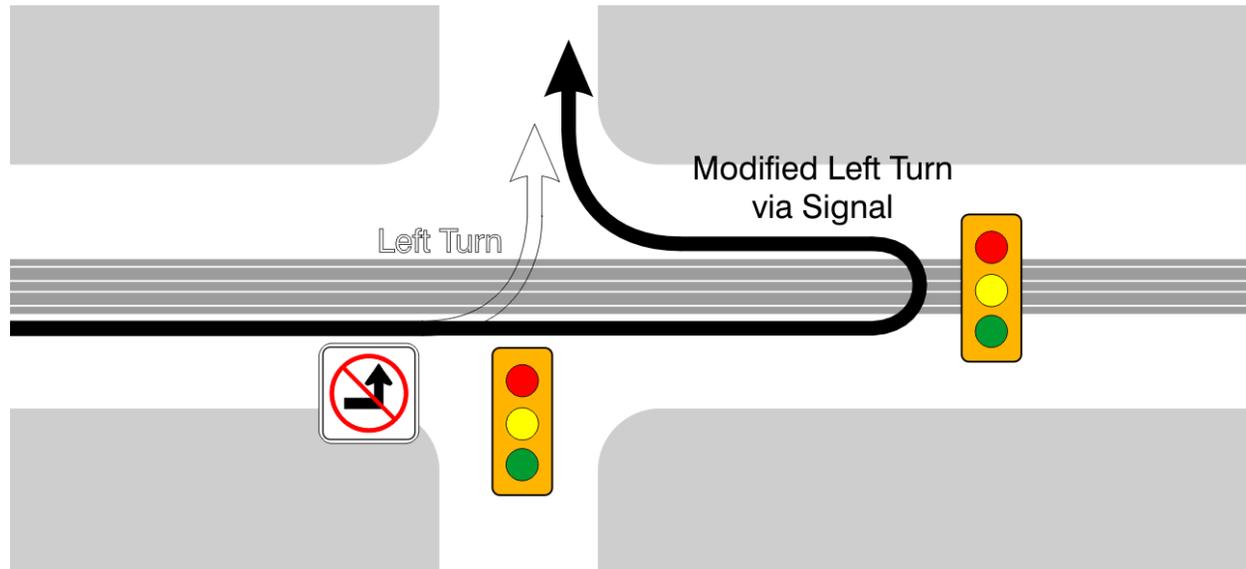
3.7.2 Intersection Modifications

Left turns across the LRT tracks will only be permitted at designated signalized intersections. At several other high volume signalized intersections, left turns will be prohibited and motorists will be required to travel through the intersection to the next signalized intersection to perform a “U” turn and then make a right turn on their return to the intersection. Left turn access to driveways/streets located between traffic signals will be provided at a closest signalized intersection where “U” turns will be permitted to allow motorists to return to their final destination. Intersections where left turns will be prohibited are listed in Table 1. Exhibit 10 presents a typical plan describing the modified left-turns.

Table 1 Intersections with Prohibited Vehicular Left Turns

Intersecting Street	Left Turns From Eglinton to N/S Street	Left Turns From N/S Street to Eglinton
Martin Grove Road	<i>Prohibited</i> (Re-routed via new roads)	Permitted
Kipling Avenue	<i>Prohibited</i> (Re-routed via U-turn/right turn)	Permitted
Islington Avenue	<i>Prohibited</i> (Re-routed via U-turn/right turn)	Permitted
Royal York Road	<i>Prohibited</i> (Re-routed via U-turn/right turn)	Permitted
Scarlett Road	<i>Prohibited</i> (Re-routed via U-turn/right turn)	Permitted
Jane Street	<i>Prohibited</i> (Re-routed via U-turn/right turn)	<i>Prohibited</i> (Re-routed via U-turn/right turn)
Victoria Park Avenue	<i>Prohibited</i> (Re-routed via Eglinton Square)	Currently prohibited
Pharmacy Avenue	<i>Prohibited</i> (Re-routed via U-turn/right turn)	<i>Prohibited</i> (Re-routed via U-turn/right turn)
Birchmount Road	<i>Prohibited</i> (Re-routed via U-turn/right turn)	Permitted

Exhibit 10 Typical Plan of Modified Left Turns



3.7.3 Bridge Modifications

In order to accommodate Eglinton Crosstown LRT, three bridge overpasses will require widening, varying from one to six metres on each side. Thirteen bridge underpasses will require minor modifications to accommodate sidewalks, and one underpass, the pedestrian bridge west of Scarlett Road will be removed and replaced with a new traffic signal for surface level pedestrian crossings. The new LRT overpass over Highway 401 will be designed to accommodate double LRT tracks and maintenance access only.

3.8 Construction Methods

The Eglinton Crosstown LRT will be constructed using several methods to build the surface (at grade) and underground (below grade) segments.

3.8.1 Surface Construction

The surface construction will follow construction methods similar to road construction. The surface section of the LRT will be constructed in stages to minimize traffic impacts during construction. A typical construction sequence for the staged construction of the LRT in the centre of the existing road entails three steps:

Step 1: Relocate street lighting and utilities, install temporary traffic signals, remove centre islands and install temporary pavement.

Step 2: Construct road widening and boulevard modifications, relocate utilities from LRT right-of-way where necessary while maintaining traffic in each direction and maintaining access to side streets and entrances.

Step 3: Construct LRT right-of-way while maintaining traffic in each direction.

Further staging may be required to relocate existing services and utilities out of the LRT right-of-way wherever affected by construction.

3.8.2 Underground Construction

Tunneling

Twin 6 metre diameter tunnels will be constructed using a tunnel boring machine (TBM) for the underground segment between Keele Street and Brentcliffe Road. Powerful circular cutting machines will drill deep below the surface with minimal disruption to traffic and business activities. Excavated material is removed by truck at the temporary staging areas in the vicinity of the portals.

Two temporary work sites to facilitate the tunnel boring operations will be required during the construction phase. One temporary work site will be located near the west portal, west of Keele Road on the south side of Eglinton Avenue. The second temporary work site will be located near the east portal, east of Brentcliffe Road, on the south side of Eglinton Avenue. These areas will be used to store and maintain heavy equipment, stockpile construction materials, store the tunnel liners, launch the tunnel boring machines, and remove and temporarily store tunneling spoils.

Cut and Cover

The cut and cover method will be used to construct stations, portals, and special track work. This method entails four steps:

Step 1: Street lighting and utility poles are relocated. Excavation is initiated. Excavation support systems are installed to shore the excavation site. Underground utilities that are in conflict are either relocated or temporarily suspended. As soon as sufficient excavation has been made, decking, either of wood or pre-cast concrete, is installed so surface activities such as roads can be temporarily reinstated. When half of the street has been excavated and temporarily decked, the process is then conducted on the other half of the street.

Steps 2 and 3: Excavation and new construction are completed under the decking. Surface activities continue to operate on the decking.

Step 4: The station 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.

The construction of at surface structures to be located immediately south or north of Eglinton Avenue, such as main and secondary entrances to underground stations; emergency exit buildings; emergency ventilation shafts; and traction power substations, will involve excavation activities outside the cut and cover construction area.

4. EXISTING CONDITIONS, IMPACTS ASSESSMENT AND PROPOSED MITIGATION MEASURES

This section outlines the existing natural, cultural and transportation conditions within the Eglinton Crosstown LRT corridor and identifies potential impacts and mitigation measures. Exhibit 11a-d presents the existing conditions of the natural and cultural environment within the LRT corridor and Exhibit 12 presents the existing land uses within the corridor.

4.1 Existing Natural Environment

On a regional scale, the topography of the Eglinton Crosstown LRT study area slopes southward towards Lake Ontario. The topography of the study area varies significantly from west to east due to the incision of rivers and streams. The bedrock beneath the study area consists predominantly of blue-grey shale with some limestone, dolostone and siltstone layers or interbeds. Bedrock is expected to be deeper than the maximum depth of excavation/ tunnelling that is proposed.

The general direction of drainage and shallow groundwater flow on a local scale is expected to be towards the closest watercourse. Groundwater flow may also be influenced by utility trenches and other subsurface structures that intersect the water table and can only be confirmed by long-term groundwater monitoring data in the study area. There are several suspected former stream channels that are no longer apparent along the LRT corridor. These buried or channelized features may also be areas requiring further attention from a dewatering perspective.

Natural heritage features located in the study area include natural remnant woodlots, major valleylands, wetland pockets and cultural woodlots and meadows. There are no areas of natural and scientific interest (ANSIs), environmentally sensitive areas (ESAs) or provincially significant wetlands (PSWs) located in the study area. The most significant natural heritage features are associated with the valleylands of the Humber River, West Don River and East Don River. Additional valleyland features are associated with Mimico Creek, Black Creek, Wilson Brook and Massey Creek. The Humber River, Black Creek, West Don River, East Don River and Massey Creek directly support warmwater fish communities in the vicinity of Eglinton Avenue. Wildlife in the study area is typical of urban settings and comprises species that are tolerant of human activity. One endangered species, Butternut, was identified in the study area, but these individuals have been planted.

A detailed emissions inventory for criteria air contaminants and greenhouse gas emissions based on 2004 data was prepared for the City of Toronto. These data show that mobile traffic related sources are a major component in the inventory. Mobile sources, road vehicles, account for 35% of the greenhouse gas emissions in 2004 with 74% of the emissions arising from passenger and other light vehicles. Overall, compared to other communities in southern Ontario, the Toronto area has less frequent poor air quality than

Windsor, London or Waterloo; but with its higher population, Toronto has more people potentially affected by poor air quality.

Exhibit 11a-d Natural and Cultural Environment – Existing Conditions

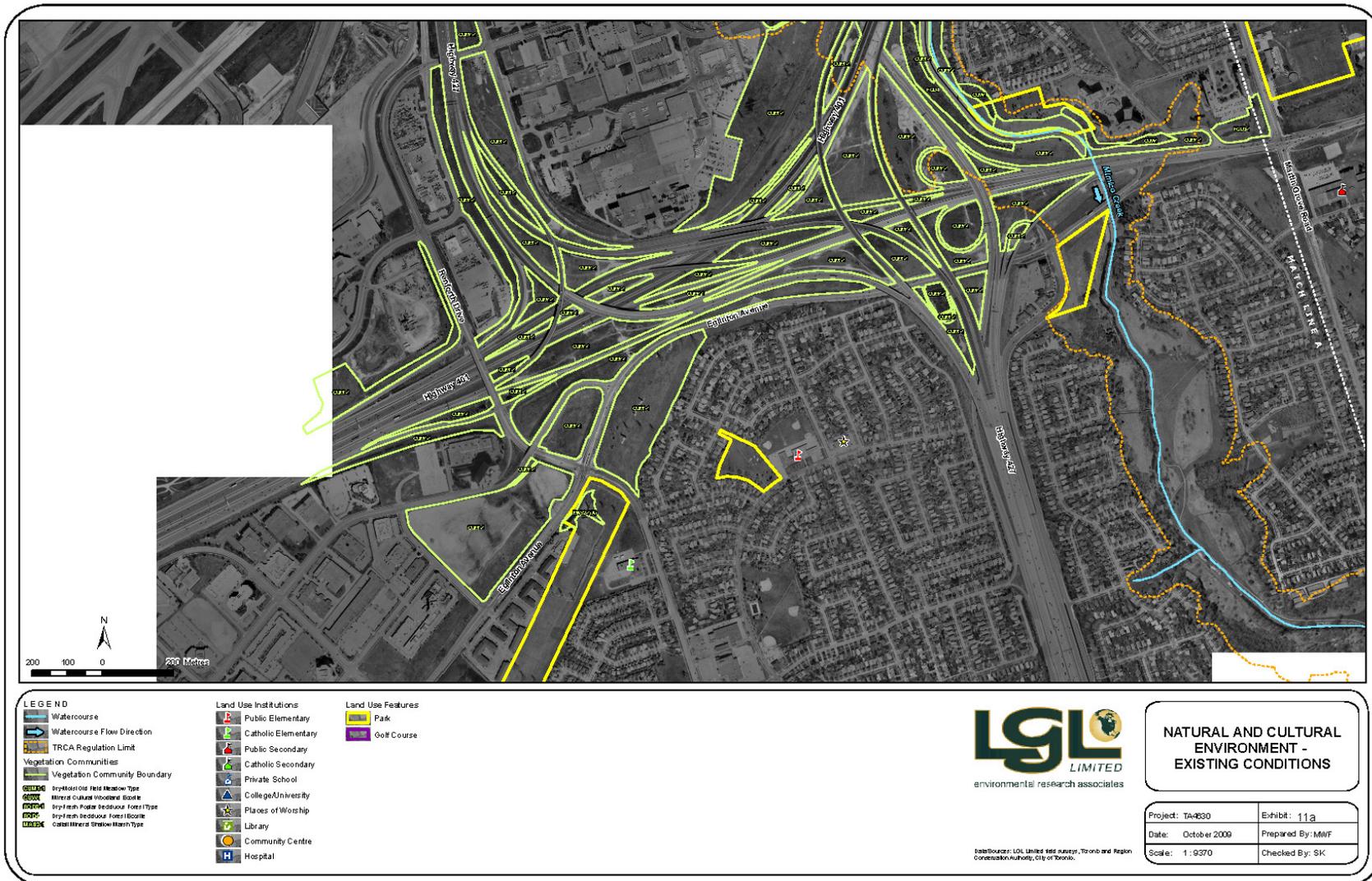


Exhibit 11b Natural and Cultural Environment – Existing Conditions

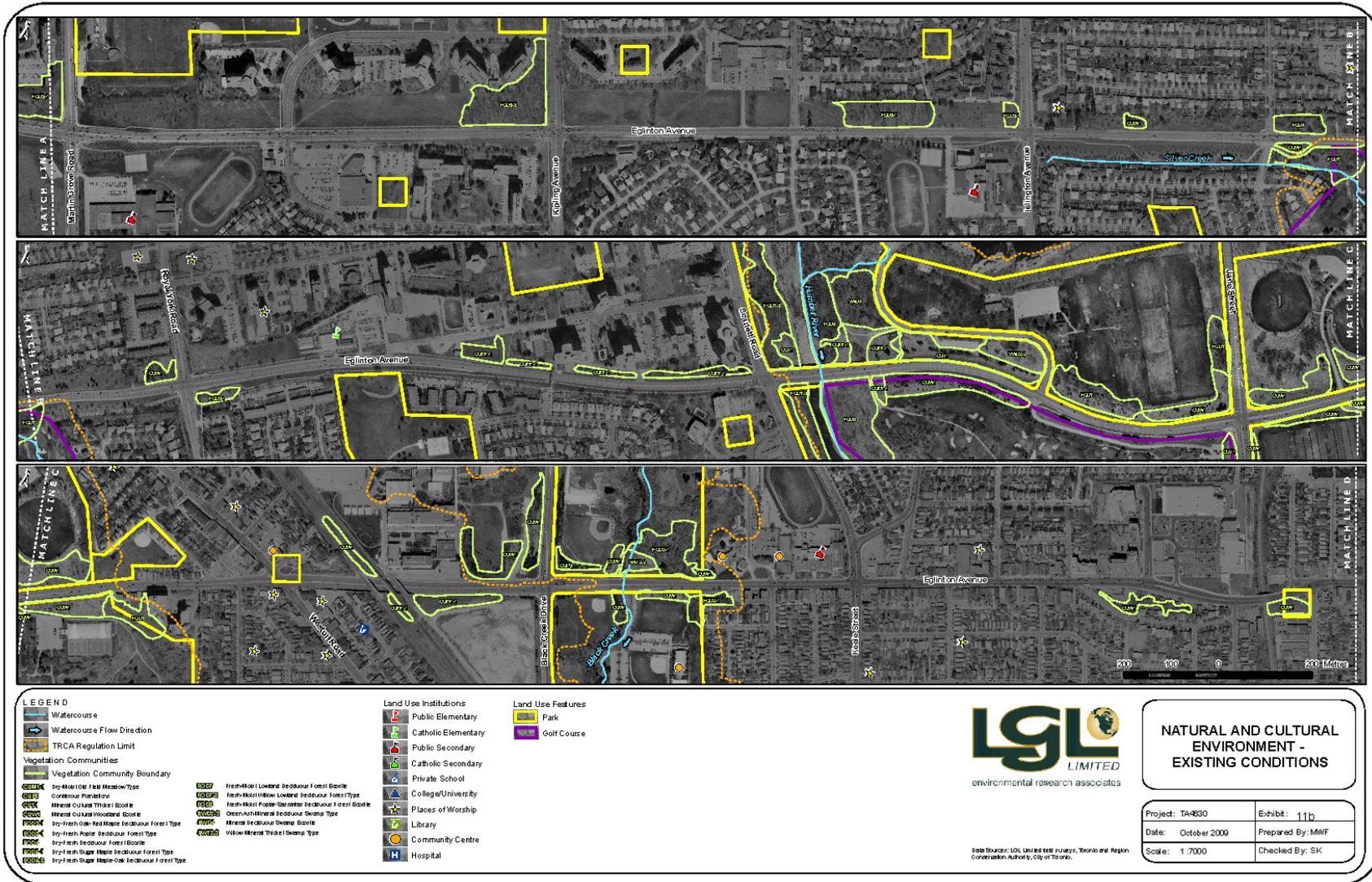


Exhibit 11c Natural and Cultural Environment – Existing Conditions

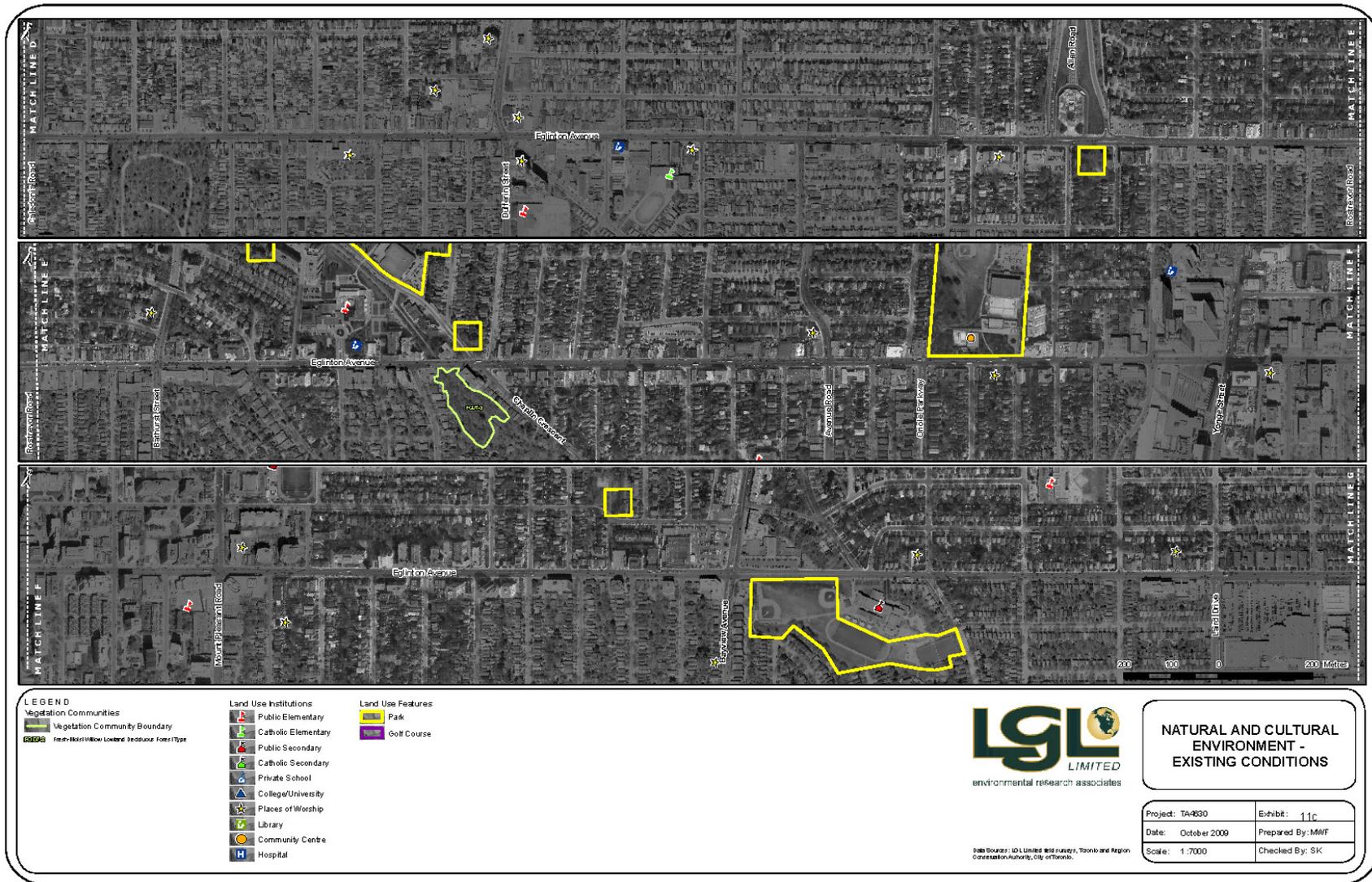


Exhibit 11d Natural and Cultural Environment – Existing Conditions

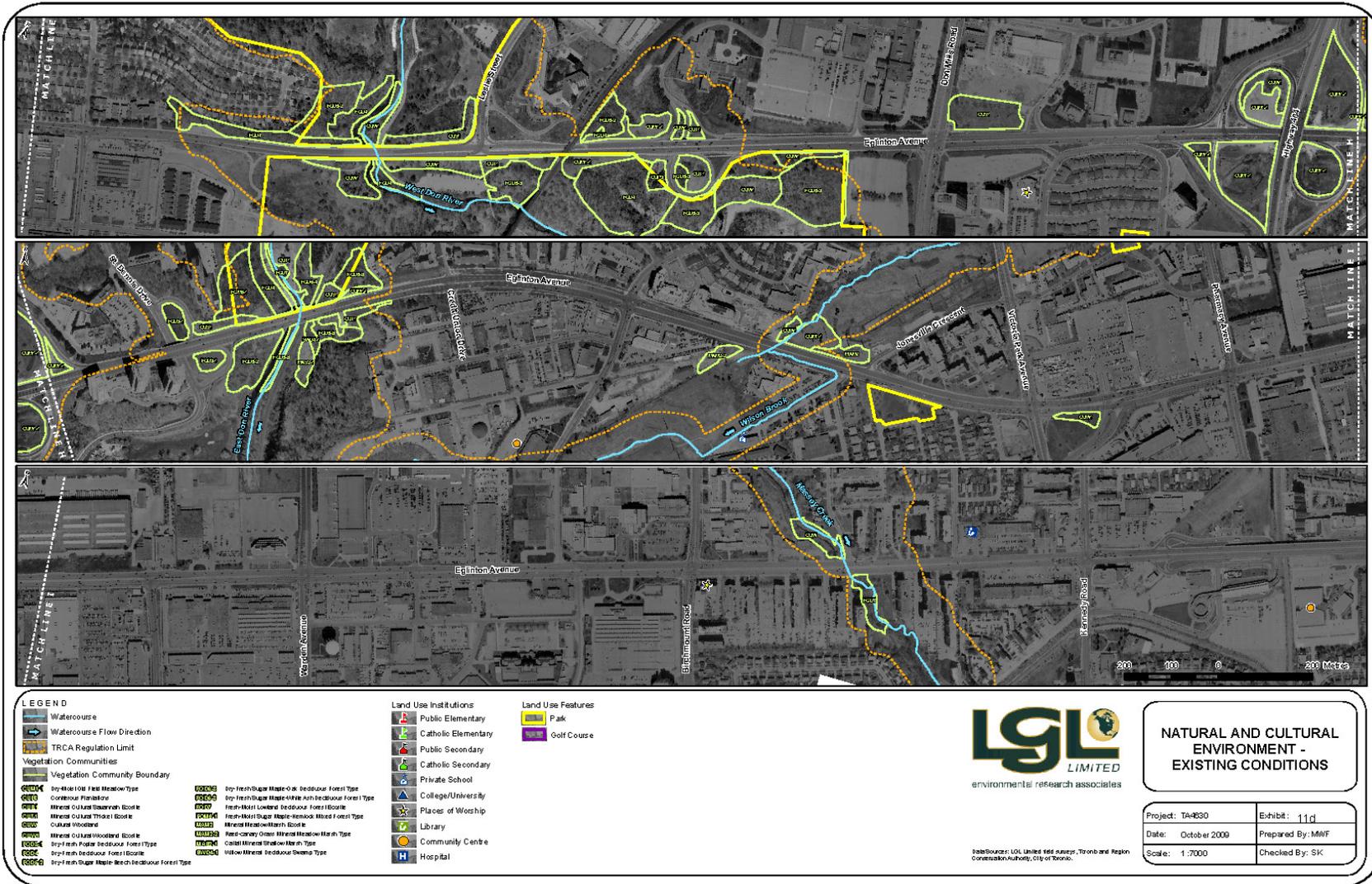


Exhibit 12 Existing Land Uses



The average daytime measured sound levels along Eglinton Avenue range from 69 to 73 dBA at a distance of 14 to 20 metres from centreline. At the same setbacks, the average night time sound levels range from 63 to 67 dBA. No vibration sensitive operations have been identified to date.

4.2 Existing Socio-Economic Environment

The predominant land uses along the Eglinton Crosstown LRT corridor are high-rise residential and commercial with greater concentration of: office and industrial use on the west; low-rise residential between Bayview Avenue and Laird Drive; commercial and industrial between Victoria Park Avenue and Birchmount Road. Institutional uses (e.g. schools and libraries) and Open Space uses (e.g. parks and recreation centres) are found distributed throughout the corridor.

Areas of archaeological potential were identified during Stage 1 Archaeological Assessment. However, no significant archaeological artifacts were discovered during the Stage 2 Archaeological Assessment. One cultural heritage landscape, the Richview Cemetery, is located on the south side of Eglinton Avenue between the lanes of Highway 427. Several other built heritage features and cultural heritage landscapes were found along the LRT corridor.

A review of historical records identified several areas to have known soil or groundwater impacts from previous and current operations:

- Eglinton Avenue and Black Creek Drive, Former Kodak Manufacturing Plant (now vacant);
- Eglinton Avenue and Gabian Way (east of Keele Street);
- Eglinton Avenue, east of Allen Road;
- Eglinton Avenue and Yonge Street; and,
- TTC Yard, Bus Terminal and Subway Station.

Two intersections have or had a high concentration of gas stations and are consequently regarded as having high potential for environmental impact:

- Eglinton Avenue and Avenue Road; and,
- Eglinton Avenue and Oriole Parkway, west of Yonge Street.

There are a number of large diameter utilities and pipelines within the road rights-of-way throughout the extent of the LRT corridor. There are also numerous large chambers throughout, with the majority located at the major intersections. In addition, there is an extensive system of minor storm sewers and combination storm/sanitary sewers within the LRT corridor. Similarly, there are watermains located along Eglinton Avenue from 150 mm diameter up to 600 mm diameter.

Along the north and south sides of Eglinton Avenue, there are Hydro towers west of Martin Grove Road and west of the Highway 427 overpass. Toronto Hydro has poles located along the roads within the LRT corridor and has an extensive system of buried conduit throughout, with large underground chambers at numerous major intersections. Hydro One Networks Inc (Ontario Hydro) has a 115 kV transmission line crossing Eglinton Avenue just east of Yonge Street. Rogers and Telus utility plants are located in shared buried conduit and Enbridge Gas has 100 millimetres and 150 millimetres gas main throughout the LRT corridor. There are also gas mains crossing Eglinton Avenue at various intersections. Bell Canada has an extensive conduit system along Eglinton Avenue, with double conduit systems at a number of locations as well as crossing ducts at intersections.

4.3 Existing Transportation System

A number of TTC bus routes and Mississauga Transit bus routes serve along and intersect the Eglinton Crosstown LRT corridor. Also, two TTC subway lines cross Eglinton Avenue with subway stations located on Eglinton Avenue. Three GO rail services, GO Georgetown, GO Barrie and GO Richmond Hill also cross Eglinton Avenue with no existing stations on Eglinton Avenue.

Most Eglinton Avenue intersections along the LRT corridor operate over their overall respective capacities during the weekday AM peak hour and PM peak hour. The Don Valley Parkway east ramp terminal intersection operates near to its capacity with a high delay during the weekday AM peak hour and operates over capacity during the weekday PM peak hour.

The Humber River, West Don River and East Don River are considered navigable, while the navigability of Mimico Creek, Black Creek, Wilson Brook and Massey Creek are being confirmed with Transport Canada.

4.4 Impact Assessment and Mitigation

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 impacts and proposed measures to mitigate any negative effects are summarized below.

4.4.1 Displacement of Existing Features by the Eglinton Crosstown LRT Facilities

The Eglinton Crosstown LRT will result in impacts on private property, including businesses and residences. A total of 45 full permanent takings are required to accommodate road widening, station entrances, emergency exit buildings and other surface buildings.

The City of Toronto (on behalf of TTC) would acquire these properties and provide compensation through either a negotiated settlement or, in the event that expropriation is required, in accordance with the *Ontario Expropriation Act*.

TTC and the City of Toronto are committed to the following process/principles for these impacted properties:

- early notification to property owners;
- ongoing meetings and discussions with property owners concerning property impacts to minimize property takings and identify mitigation measures;
- further investigations of alternative site locations and configurations for surface facilities; and,
- uniform and equitable treatment, in accordance with the *Ontario Expropriation Act*.

During the EA process, partial takings have been identified for a further 53 private properties. These include underground easements and surface facilities such as station entrances. TTC and the City of Toronto will conduct a Property Protection Study during the design of the Eglinton Crosstown LRT, which will determine detailed property requirements, including temporary construction easements. The acquisition of these properties will follow the same principles described above in this section.

Other features located within the footprint of the Eglinton Crosstown LRT that may be affected include:

- Five parks/parkettes including St. Hilda's parkette, Ben Nobleman Park, Chaplin parkette, North Toronto Community Centre (located within Eglinton Park) and Howard Talbot Park will be affected by fire ventilation shafts, station entrances, emergency exit buildings or traction power substations. The preferred location, configuration and design of these LRT facilities will be determined in consultation with City of Toronto Parks, Forestry and Recreation division.
- Approximately 1.78 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. Several Butternut trees, listed as "endangered" will be transplanted into protected areas.
- 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. Sympathetic alterations of buildings and

landscapes, or documentation prior to removal, will be considered in consultation with City of Toronto Heritage Preservation Services.

- TRCA regulated areas, including Mimico Creek, Humber River, Black Creek, West Don River, East Don River, Wilson Brook and Massey Creek will be affected by Eglinton Crosstown LRT facilities. Eglinton Crosstown LRT facilities will be designed and located, where feasible, to minimize effects on flooding. A permit under the Ontario Regulation 166/06 – Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses will be secured from the Toronto and Region Conservation Authority.
- Six properties have known soil or groundwater contamination and three properties have suspected soil or groundwater contamination. A Phase 1 and 2 Environmental Site Assessment will be conducted for these properties if acquisition is required. Contaminated soils and groundwater will be managed in accordance with provincial legislation and regulations.
- A number of large diameter utilities and pipelines conflict with the Eglinton Crosstown LRT. These utilities will be relocated prior to construction, where necessary. The location of all plant, potential conflicts and the relocation strategy will be confirmed with service providers.
- No known archaeological sites will be displaced by Eglinton Crosstown LRT facilities.
- No harmful alteration of fish habitat will result from the Eglinton Crosstown LRT facilities.

4.4.2 Construction Impacts

The runningway will be tunnelled through underground sections. As a result, impacts are predicted to be negligible. Stations and special track work areas will be constructed by cut-and-cover method. Station entrances, emergency exit buildings, emergency ventilation shafts, and traction power substations will be constructed following standard at surface construction methods with excavation activities for connection to the underground sections. Bridge modifications will not involve in-water construction work.

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

- Erosion and sedimentation control measures will be implemented to prevent the potential migration of sediments off site;
- Best management practices will be implemented to prevent the potential release of dust and other airborne pollutants off site;
- Good housekeeping practices will be implemented to prevent the potential migration of mud and litter off site;

- The temporary work site located at the west portal will be flood-proofed to prevent the potential release of any deleterious substance to Black Creek during a regional storm event;
- Underpinning will be implemented to minimize the potential for building settlement/structural stress due to tunnelling, piling and dewatering, where necessary;
- The soccer field and surrounding portions of Keelesdale Park that will be used as a temporary work site will be re-instated following construction;
- Traffic management will be implemented to reduce the potential for disruption of existing vehicle circulation patterns due to road and lane closures and temporary traffic detours and diversions;
- Bike and pedestrian management will be implemented to reduce the potential for disruption of existing pedestrian circulation and safety due to road diversions and detours;
- Decking will be installed at cut-and-cover excavations to minimize the duration of disturbance;
- Truck haul of construction materials, equipment and tunnelling spoils will be limited to major access roads to avoid neighbourhoods;
- Noise and vibration control measures will be implemented to prevent the potential disturbance from construction equipment and activities to nearby receptors; and,
- Impacts to local business operations due to:
 - modified vehicle and pedestrian circulation patterns;
 - reduced visibility of store fronts and signs; reduction in on-street parking;
 - less convenient access to off-street parking; and,
 - customer inconvenience due to temporary construction debris, noise and dust; will managed as required.

Measures will be implemented during construction to maintain navigation clearances and safety for vessels.

Mitigation methods will include detailed engineering studies and ongoing management and monitoring of construction activities.

4.4.3 Operations and Maintenance Impacts

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

- Stormwater run-off from Eglinton Crosstown LRT facilities will be treated using stormwater management practices;
- Noise generated by LRT vehicles and by bus terminal operations will be attenuated, if required, to meet MOE standards;
- Vibration generated by LRT vehicles and by bus terminal operations will be attenuated, if required, to meet MOE standards;
- Air emissions generated by bus terminal operations will be attenuated, if required, to meet MOE standards;

- Traction power stray current will be controlled using isolated and insulated power supplies; and,
- Traffic safety and operations will be maintained through the use of right in-right out entrances, road diversion at Martin Grove Road, left hand turns at minor intersections and provision for U-turns in the vicinity of major intersections where left hand turns will be removed.

5. CONSULTATION PROCESS

A consultation program was conducted under the Transit Project Assessment process as specified under Ontario Regulation 231/08. Key components of the consultation program included consultation with agencies, the public and the aboriginal community, and public review of the Environmental Project Report.

5.1 Consultation with Agencies

The following stakeholder agencies were actively engaged (through meetings and/or email and letter correspondence) during the Transit Project Assessment process:

- City of Toronto (City Planning, Emergency Medical Services, Fire Services, Heritage Preservation Services, Parks Forestry and Recreation, Police Services, Transportation)
- Greater Toronto Airports Authority
- Hydro One
- Metrolinx
- Ministry of the Environment (Environmental Assessment Approvals Branch, Noise and Vibration Section; Central Region, Air Quality, Water Resources and Technical Support Sections, Toronto District Office, Halton-Peel Regional Office)
- Ministry of Transportation
- City of Mississauga
- Toronto District School Board
- Toronto Parking Authority
- Toronto and Region Conservation Authority
- GO Transit

Additional consultation with external agencies included notification of Public Open Houses #1, #2, #2A and 3 through e-mail messages. Each external agency was also sent a Notice of Commencement via e-mail message. Table 2 shows the Federal and Provincial agencies that were notified.

Table 2 Contact with External Agencies

Federal Agency	Provincial Agency
Canadian Environmental Assessment Agency Canadian Transportation Agency Indian and Northern Affairs Canada Department of Canadian Heritage Environment Canada Department of Fisheries and Oceans Infrastructure Canada Industry Canada Health Canada Transport Canada Transport Canada - Ontario Region	Ministry of Aboriginal Affairs Ministry of Agriculture, Food and Rural Affairs Ministry of Citizenship and Immigration Ministry of Culture Ministry of Municipal Affairs and Housing Ministry of Natural Resources Ministry of Public Infrastructure Renewal Ministry of the Attorney General Ministry of Tourism and Recreation Ontario Realty Corporation Ministry of Government and Consumer Services Ministry of Education Ministry of Community and Social Services
Utilities	Transportation Stakeholders
Bell Canada Enbridge Gas Distribution Enbridge Pipelines Rogers Cable Sarnia Products Pipeline Company, Inc. Sun-Canadian Pipeline Company, Inc. Toronto Hydro Trans-Northern Pipeline	Canadian National Railway Canadian Pacific Railway VIA Rail Toronto Cycling Committee Toronto Pedestrian Committee
	Other Stakeholder
	Conseil Scolaire de district Catholique Centre-Sud

5.2 Consultation with the Public

The public consultation process included:

- three rounds of public open houses;
- formal notices in the Toronto Star, City Centre Mirror, North York Mirror, East York Mirror, Etobicoke Guardian and Scarborough Mirror;
- bulk mailings to local residents to announce the open houses;
- mailings to BIAs and ratepayers groups;
- a project website;
- dedicated 24/7 phone line (416-392-6900);
- dedicated fax line (416-392-2971);
- dedicated TTY line (416-397-0831);
- dedicated e-mail address (eglintontransit@toronto.ca);
- dedicated postal address through the City’s Public Consultation Unit; and,
- Notice of Commencement.

Public open house #1 was held in six locations on August 14, 19, 25, 27 and September 4 and 22, 2008. Public open house #2 was held in six locations on June 15, 17, 18, 23, 24

and July 29, 2009. Another public open house (#2A) was held on September 2, 2009 at the Etobicoke Olympium specific to the extension of the Eglinton Crosstown LRT to Pearson International Airport. A total of approximately 1,700 persons have attended public open houses held to date. The third round of public open houses will be held on November 23, 24, 25, 26 and December 2, 8 and 10, 2009.

A total of 691 persons attended public open house #1. A total of 904 persons attended public open house #2, while 139 persons attended public open house #2A.

Public notices were mailed to 73,000 properties across the study area via Canada Post bulk mail delivery on July 22nd, 2008 to inform residents of public open house #1. A similar number of notices were distributed by bulk mail the week of May 25, 2009 to inform area residents of public open house #2.

Address mail was sent to local Business Improvement Area (BIA) and ratepayers group representatives prior to each public open house. Address mail was also sent to all members of the public who signed up for the project mailing list prior to public open house #2. Address mail was also sent to all landowners for whom potential property impacts were identified prior to public open house #2.

The specific Eglinton Crosstown LRT webpage was created on July 15, 2008 at: http://www.toronto.ca/involved/projects/eglinton_crosstown_lrt/index.htm. Major links to the page were provided from both www.toronto.ca/involved and www.toronto.ca/transitcity.

From the project inception to October 29, 2009, a total of 461 communications were received by the City's Public Consultation Unit.

Notice of Commencement under Ontario Regulation 231/08 was issued on November 16, 2009 and appeared in the *Toronto Star*, *City Centre Mirror*, *North York Mirror*, *East York Mirror*, *Etobicoke Guardian* and *Scarborough Mirror*.

5.3 Consultation with Aboriginal Communities

As per the City of Toronto and Indian and Northern Affairs Canada (INAC) protocol for First Nations consultation for EAs, INAC Specific Claims, Litigation Management and Resolution, and Comprehensive Claims are required to be notified of all of EAs conducted by the City of Toronto and no written response is expected unless there are issues with the project as proposed (Note: none have been identified to date).

The aboriginal consultation process included notifying the following of public open houses #1, #2, #2A and #3 and the Notice of Commencement:

- INAC Specific Claims;
- INAC Litigation Management and Resolution;
- INAC Comprehensive Claims;

- Ontario Ministry of Aboriginal Affairs; and,
- Mississaugas of the New Credit First Nation.

Following recent guidance received from the Ministry of Environment, Aboriginal Consultation process, the bands involved in the Williams Treaty were notified of public open house #3 and the Notice of Commencement individually.

6. COMMITMENTS TO FUTURE WORK

During the Transit Project Assessment Process, TTC and the City of Toronto have worked closely with key stakeholders to address and resolve any issues or concerns. In addition, the TTC's and City of Toronto's commitments to future work include the following:

- 1) **Consultations** – The City of Toronto and TTC will consult with the public, property owners and stakeholder agencies (including: emergency service providers) during the design of the Eglinton Crosstown LRT alignment, stops/stations, bus terminals and ancillary facilities.
- 2) **Property Acquisition** – The City of Toronto and TTC will:
 - a) Proceed with a Property Protection Study during the early stages of the design;
 - b) Continue property negotiations with the Greater Toronto Airports Authority for property required for the Project;
 - c) For properties within the City of Toronto (including temporary construction easements) the City of Toronto will acquire property by negotiation or expropriation, as required; and,
 - d) For properties within the City of Mississauga (west of Renforth Drive), the City of Toronto will co-ordinate property acquisition activities with the City of Mississauga.
- 3) **Planning Initiatives** – The City of Toronto, City of Mississauga and TTC will take a leadership role in planning initiatives which support the Eglinton Crosstown LRT including:
 - a) The TTC will work with the City of Toronto to ensure that selected locations for station entrances, vent shafts, traction power substations (TPSS) and Emergency Exit Buildings (EEBs) meet established urban design and community planning policies and guidelines, limit impact, and provide opportunities for enhancements of the sites and pedestrian access;
 - b) The TTC will work with the City of Toronto and the City of Mississauga to ensure that short and long term cycling amenities are incorporated into Eglinton Crosstown LRT facility designs, in accordance with prevailing City policies and design standards;
 - c) Incorporate City of Toronto and City of Mississauga urban design criteria into the design of Eglinton Crosstown LRT facilities. Specifically, TTC and the City of Toronto will undertake an Urban Design Study to identify characteristics of the

- existing and planned context along the corridor;
- d) The TTC will work with the City of Toronto and the City of Mississauga to ensure that the pedestrian environment at surface stops and underground stations meets established urban design and community planning policies and guidelines.
 - e) The City of Toronto and TTC will work with the Greater Toronto Airport Authority (GTAA) to select a preferred alignment and stop(s) at Pearson International Airport;
 - f) The TTC will complete a study to confirm the alignment of the Eglinton Crosstown LRT from the intersection of Kennedy Road into Kennedy Station; and,
 - g) The TTC will work with Metrolinx to ensure that appropriate interface opportunities with GO Transit rail lines are protected for in the vicinity of Black Creek Drive/Weston Road, Caledonia Road and Leslie Street.
- 4) **Construction Issues** - TTC will conduct further research and analysis for the construction of the Eglinton Crosstown LRT, including, but not limited to the following activities:
- a) Include noise, vibration and air quality monitoring and mitigation measures and construction site maintenance/upkeep requirements in construction contract documents;
 - b) Develop traffic, transit and pedestrian management strategies to be included in construction contract documents;
 - c) Cut and cover construction sites will be further analyzed to minimize impacts including considerations:
 - i) reducing width of station box construction by refinement of station platform width and tunnel diameter;
 - ii) alternate methods of excavation support for cut and cover locations;
 - iii) use of mining methods at critical locations; and,
 - iv) development of comprehensive pedestrian and traffic management plans.
 - d) Develop utility and municipal servicing relocation plans with service providers;
 - e) Develop emergency response plans with emergency service providers to maintain fire, police and ambulance services during construction;
 - f) Prepare and implement vegetation restoration, edge management and streetscape plans;
 - g) In consultation with TRCA, City of Toronto and City of Mississauga, determine areas where compensation for vegetation loss will be required; determine quantity and type of species to be used; and, identify sites where compensation efforts would be maximized;
 - h) In consultation with TRCA, determine any potential for a Harmful Alteration, Disruption or Destruction of fish habitat (HADD) in line with TRCA's Level III

agreement with Fisheries and Oceans Canada as per the *Fisheries Act*;

- i) Undertake Designated Substances Surveys for any buildings or structures which require demolition and to reflect the findings in construction contract documents;
 - j) Develop procedures for disposal of excavated materials, including excess soils, in accordance with Ministry of the Environment requirements;
 - k) Prepare and implement a Soil and Groundwater Management Strategy, including:
 - i) water treatment methods, which results in discharge water quality complying with prevailing TRCA and City of Toronto water guidelines and requirements; and,
 - ii) contaminated soils management, in accordance with environmental legislation, regulations and guidelines.
 - l) Prepare an erosion and sedimentation control plan, which complies with prevailing TRCA and City of Toronto or (as applicable City of Mississauga) water guidelines and requirements;
 - m) Undertake buildings, structures, and railway protection and monitoring;
 - n) Prepare Cultural Heritage Evaluation Reports and/or undertake Heritage Impact Assessments at select sites to address City of Toronto Heritage Preservation Services and City of Mississauga Local Municipal Heritage Committee requirements;
 - o) Undertake stray current protection (if applicable) and monitoring for pipelines and other utilities;
 - p) Conduct a Phase 1 and 2 Environmental Site Assessment for any areas of existing contamination prior to property acquisition for the Eglinton Crosstown LRT; and,
 - q) Arrange for a Stage 2 archaeological assessment to be conducted at areas where ground disturbance will occur during construction and which have archaeological potential.
- 5) **Permits and Approvals** - TTC will secure necessary permits and approvals for the implementation of the Eglinton Crosstown LRT, including, but not limited to:
- a) Planning approvals (including Site Plan Approval) for all above-grade structures and facilities (through City of Toronto or City of Mississauga);
 - b) Park Access Permits for access to parks for construction and staging activities;
 - c) Building permits for the stations (including ancillary facilities), emergency exit buildings and traction power substations (through City of Toronto or City of Mississauga);
 - d) Navigable Waters Protection Act approval (from Transport Canada) at West Don River, East Don River and any other waters determined by Transport Canada to be navigable;

- e) Permit(s) to Take Water (from Ministry of the Environment) (for locations where dewatering exceeds 50,000 litres per day);
 - f) TRCA Permit under O. Reg. 166/06 for alteration to watercourses including Mimico Creek, , West Don River, East Don River, and Wilson Brook;
 - g) Stormwater management, in accordance with City of Toronto, City of Mississauga, TRCA and MOE requirements;
 - h) Sewer discharge approvals, in accordance with Region of Peel, City of Mississauga, City of Toronto and TRCA requirements;
 - i) Railway Crossing Agreements at the Weston Subdivision, Mactier Subdivision, Newmarket Subdivision, Belleville Subdivision and Bala Subdivision;
 - j) Pipeline Crossing Agreements will be obtained, as required;
 - k) Ministry of Transportation approvals for new bridge crossing Highway 401 and modifications to Highway 427 mainline and ramps; and,
 - l) Hydro One Agreements to allow for the use of the Kipling Hydro Corridor for a new municipal road.
- 6) **Noise and Vibration Protocols** - TTC will conduct a noise and vibration study, in accordance with the protocols established with the Ministry of the Environment.
- 7) **Canadian Environmental Assessment Act Determination** – TTC will prepare a CEEA Screening Report to secure a determination under CEEA for the entire project from Kennedy Station to Pearson International Airport.

7. ADDENDUM PROCESS

TTC will prepare an addendum, if changes to the project occur after the Notice of Completion is issued, in accordance with Section 15 of the Transit Projects Regulation, including:

- Preparation of an addendum to the Environmental Project Report;
- Preparation of a Notice of Addendum to the Environmental Project Report; and,
- Distribution of the Notice of Addendum to relevant stakeholders and the Ministry of the Environment.

Upon resolution of the alignment on the Airport Lands with the GTAA and Metrolinx, TTC and the City of Toronto will proceed with amending the Environmental Project Report under the Provincial process if required.