

# TORONTO TRANSIT COMMISSION REPORT NO.

**MEETING DATE:** September 24, 2009

**SUBJECT:** TORONTO-YORK SPADINA SUBWAY EXTENSION PROJECT  
SHEPPARD WEST STATION  
APPROVAL OF CONCEPTUAL DESIGN

## **ACTION ITEM**

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### **RECOMMENDATION**

It is recommended that the Commission approve the conceptual design for Sheppard West Station which will be presented through the public consultation process.

### **FUNDING**

Sufficient funds for this expenditure are included in the Toronto-York Spadina Subway Extension (TYSSE) Project, as set out on pages 1479 to 1482 of the TTC 2009-2013 Capital Program (Category - Expansion) which was approved by City Council on December 10, 2008.

### **BACKGROUND**

The TTC is planning the design and construction of an underground subway line from the existing Downsview Station on the Spadina Line located in the City of Toronto, to the proposed Vaughan Corporate Centre located in the City of Vaughan, Region of York as shown in Exhibit 1. The new 8.6 km long line will include both tunnelled and cut and cover sections.

The Toronto-York Spadina Subway Extension (TYSSE) project is being funded by the Federal Government, the Province of Ontario, the Regional Municipality of York and the City of Toronto. The TTC is managing the design and construction of the YYSSE project and will own and operate the subway extension.

At the Commission Meeting of October 23, 2008, Contract A85-75F for the design of Sheppard West Station was awarded to the design team lead by Earth Tech Canada Inc. (now doing business as Aecom). The architectural firm for this team is Aedas.

The Station Design Philosophy is covered in more detail in a separate report to the Commission.

The design consultants were presented with the TYSSE Station Design Philosophy which emphasises the following elements defined in TTC Design Standards:

- Integrated design of all elements with strong aesthetics and public artwork;
- Column-free structures wherever possible with high ceilings and simple flow of space;
- Bright, open spaces with daylight penetrating deep into stations where possible;
- Barrier-free with at least one fully accessible entrance;
- Use of TTC standard elements; and
- Sustainable design to meet the Toronto Green Standard.

In developing this concept, staff, and the station designer have met and reviewed concepts with major stakeholders including Parc Downsview Park (PDP), GO Transit, CN Rail, and City of Toronto Planning.

## **DISCUSSION**

Sheppard West Station is located on Parc Downsview Park and CN/GO lands on the south side of Sheppard Avenue, centered under the CN/GO Barrie rail line per the Site Plan in Exhibit 2. The Sheppard West Station is intended to provide access for existing and future facilities and developments in PDP and the Keele Industrial area located to the north of Sheppard Avenue. The station is set back to allow transit oriented development (TOD) to occur on the south side of Sheppard Avenue.

GO Transit plans to develop and pay for the construction of a new station on PDP lands on their Bradford GO line, which is to be operational on opening day. Through the Environmental Assessment process, TTC agreed to provide an unpaid underground connection to this facility with the placement of an automatic entrance on the west side of the new GO station. The current design has revised the Environmental Assessment location to center the TTC platform under the CN/GO line to provide better integration between transit modes and to improve TOD. Locating a significant portion of the station in the 30 metre strip on either side of the CN/GO right-of-way, which is sterilized for development purposes, frees more PDP land to maximize development potential. Cost sharing negotiations are currently underway with GO Transit to provide funding for a fully-integrated, multi-modal transit facility with design of the integrated GO Transit facilities by the consultant design team.

### **Exterior – Exhibit 3 - Aerial View**

Entrances are located on both sides of the CN/GO line with access on opening day provided by footpaths and maintenance and emergency response access routes. The two entrance pavilions contain both TTC and GO Transit entrances. The west pavilion also contains the TTC transformer yard (Bakersfield Substation), and the east pavilion includes secure bicycle

parking. The station is designed to allow TOD to build up to a more urban nature in the future. The height of the TTC structure and future developments will meet limitation requirements for the Downsview Airport.

**Interior – General**

Station finishes, materials, colour and artwork will be further developed as part of the detailed design and will be presented at the second Public Open House and included in a subsequent Commission Report.

**Street Level** - Exhibit 4 – Section  
- Exhibit 5 – Street Level

Passengers enter into either entrance pavilion through sliding doors into an unpaid public area. From here GO Transit facilities can be accessed by walking directly onto the GO platforms, with GO Transit fare facilities located directly adjacent to their platforms. TTC passengers, and those wishing to cross under the CN/GO lines, access the concourse level via stairs, escalators or elevators in both pavilions. Emergency egress stairs from both ends of the platform come to street level and exit to the north side of the pavilions.

TTC service rooms and back-of-house spaces occupy the north side of both buildings allowing for fully glazed walls to the south permitting daylight harvesting and the potential for natural light to penetrate to concourse level and platform.

**Concourse Level** - Exhibit 6 – Concourse Level

The concourse level provides a fully-accessible unpaid connection linking the two entrance pavilions at the surface. This allows GO Transit passengers to fully integrate with incoming TTC passengers. Moving through the fareline leads to an elevator and two sets of stair/escalator combinations, one at each end of the concourse, down to platform level.

The concourse level also contains the primarily TTC service spaces including the emergency ventilation fans. Knockout panels are provided to protect for future development connections north or south of the station.

**Platform Level** - Exhibit 7 – Platform Level

The subway platform level is served by an elevator from the concourse level, and by two escalators and three sets of stairs. Two enclosed emergency exit stairs are provided at each platform end.

### **Artwork**

A Public Art selection process resulted in the selection of Panya Clark Espinal as the public artist for Sheppard West Station. An art concept will be included in the second Public Open House for this project.

### **Project Impacts**

As this site is an undeveloped site there is very little construction impact on the adjacent community other than construction traffic. Sheppard West Station is planned to be the site of the Tunnel Boring Machine (TBM) launch shafts for construction of the twin tunnels running west towards Finch West Station, and east towards Downsview Station.

To address the above impacts, the following steps are being advanced during design development:

- Sheppard West Station and the tunnels running west to Finch West Station, and east towards Downsview Station will be constructed under one contract affording a single point of responsibility.
- An Environmental Management Plan (EMP) will be in place to address the effects of dewatering, stormwater management and erosion and settlement control.
- Instrumentation, inspection and response procedures will be in place to monitor and mitigate construction noise, vibration and dust control.
- Construction impact on operation of the airport will be further discussed with Bombardier Inc. who operates the adjacent runway(s) under agreement with PDP.

### **Cost and Schedule**

The budget for construction of Sheppard West Station is \$59.2 million. The estimated final cost of construction costs for Sheppard West Station, including costs recoverable from GO Transit is \$102 million.

The main impacts to the original estimate and current budget are:

Escalation of construction cost during the period 2006-2008 higher than budgeted:

- High water table;
- Toronto Green Standard;
- GO Transit integration.

To mitigate the cost, savings are identified by reducing the curvature of the alignment west of the station toward Finch West Station; tunneling instead of cut-and-cover

construction east of the station towards Downsview tailtrack; and the deletion of an Emergency Exit Building (EEB) for an estimated saving of \$12 million.

In addition, a request was made to GO Transit for funding, which remains to be finalized.

As design progresses, additional value engineering studies will be undertaken to reduce station costs. If the project remains over budget as design develops, additional funds will be provided from budget contingencies.

The proposed project schedule reflects completion of preliminary design to 30% in September 2009, with completion of design development to 100% in May 2010. Sheppard West Station is scheduled for Substantial Completion in May 2014.

### **Next Steps**

Following the first Public Open House in November 2009, the design will be developed leading to a second Public Open House in Spring 2010. A report will also be submitted to the Commission for finishes and artwork. A report is scheduled to be submitted for contract award approval in October 2010.

### **JUSTIFICATION**

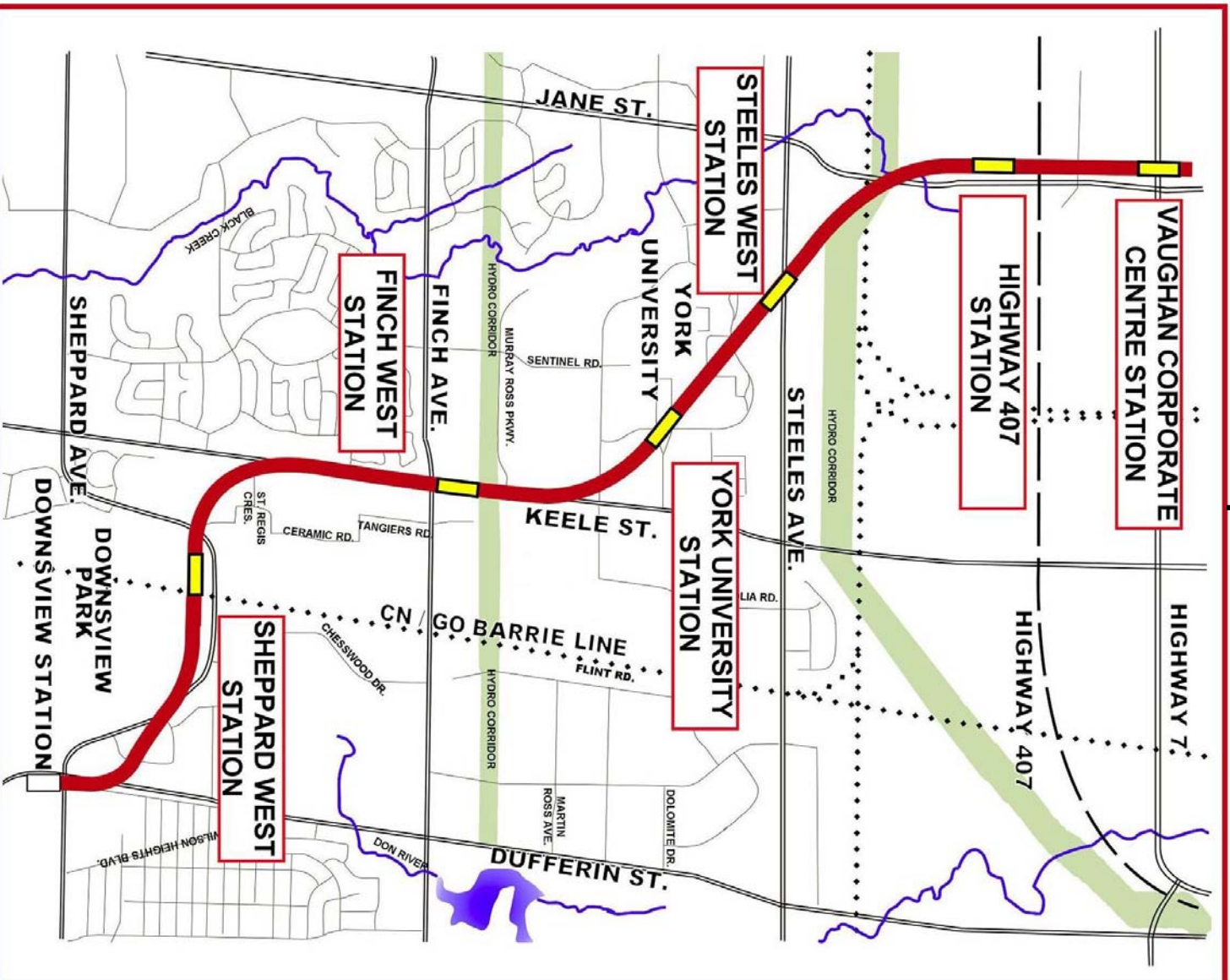
Approval is required to allow the station designers to progress their design and commence public meetings.

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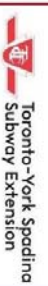
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Attachments Exhibits 1 to 7

# Exhibit 1 – TYSSSE Map

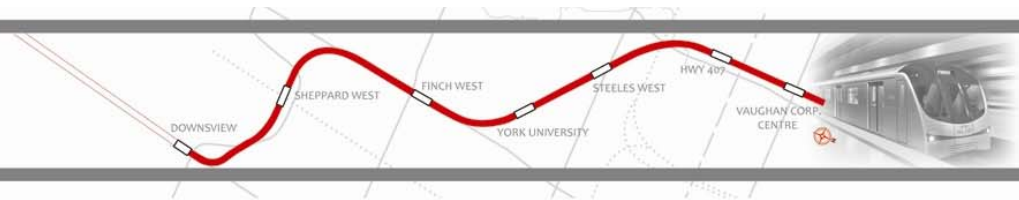


## TORONTO-YORK SPADINA SUBWAY EXTENSION





Toronto-York Spadina  
Subway Extension



# Sheppard West Station

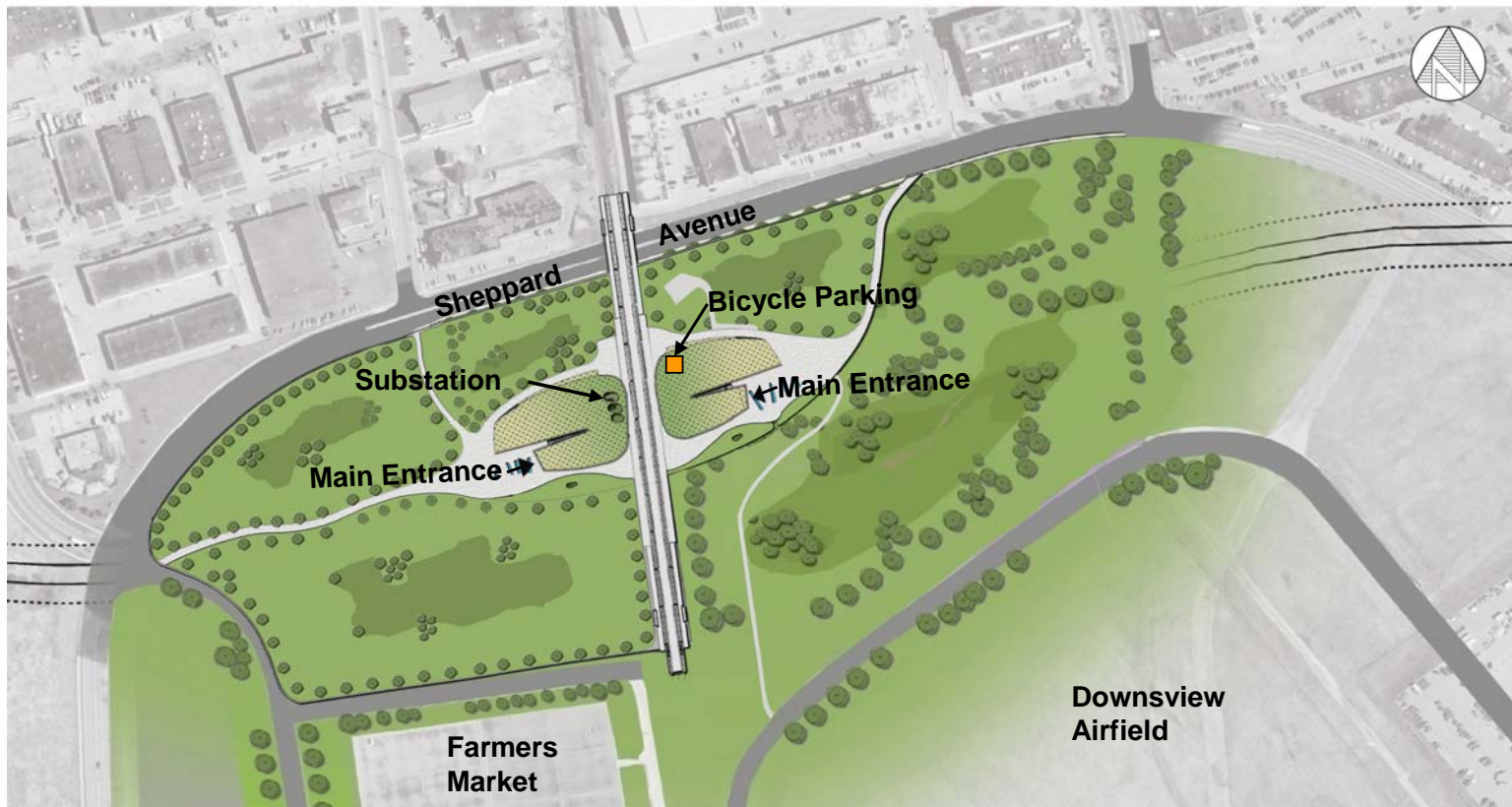
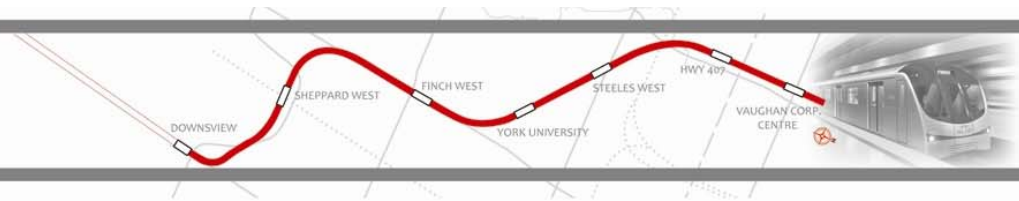


Exhibit 2 - Site Plan





Toronto-York Spadina  
Subway Extension



## Sheppard West Station

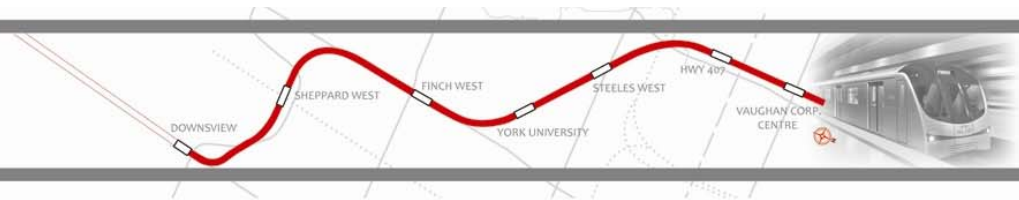


Exhibit 3 – Aerial View





Toronto-York Spadina  
Subway Extension



## Sheppard West Station

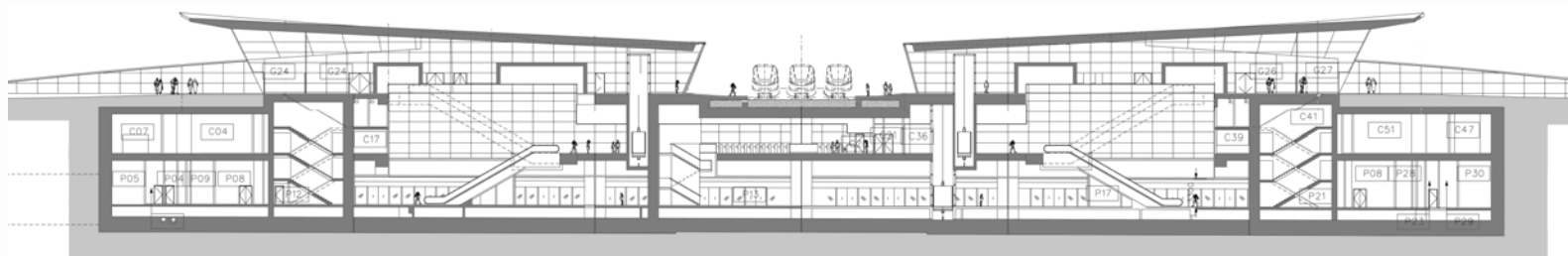
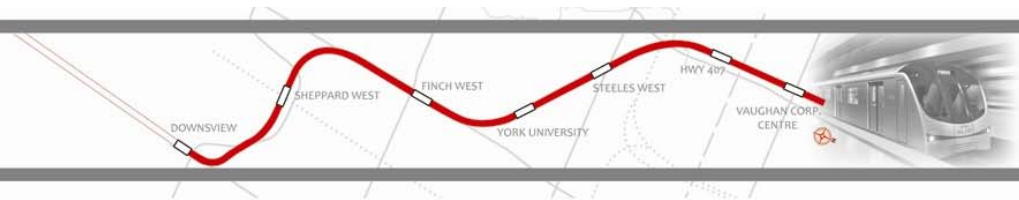


Exhibit 4 - Section



Toronto-York Spadina  
Subway Extension



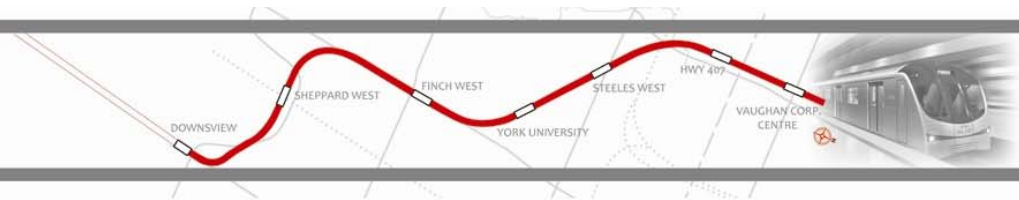
# Sheppard West Station



Exhibit 5 - Street Level



Toronto-York Spadina  
Subway Extension



# Sheppard West Station

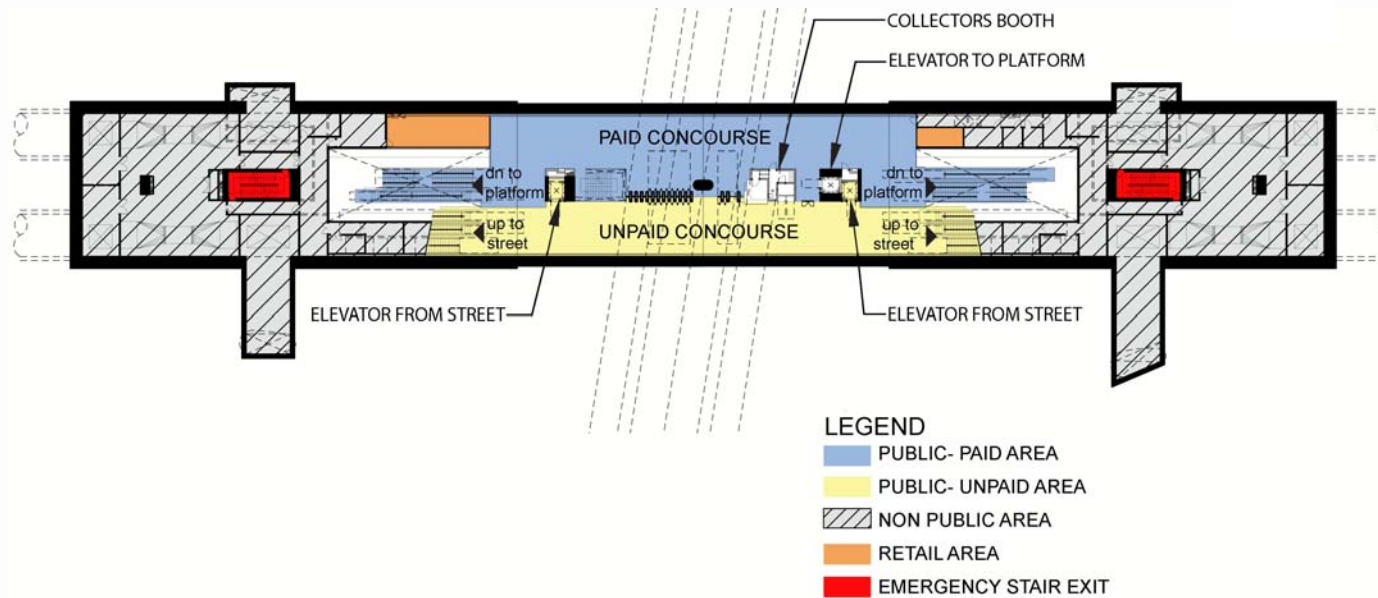


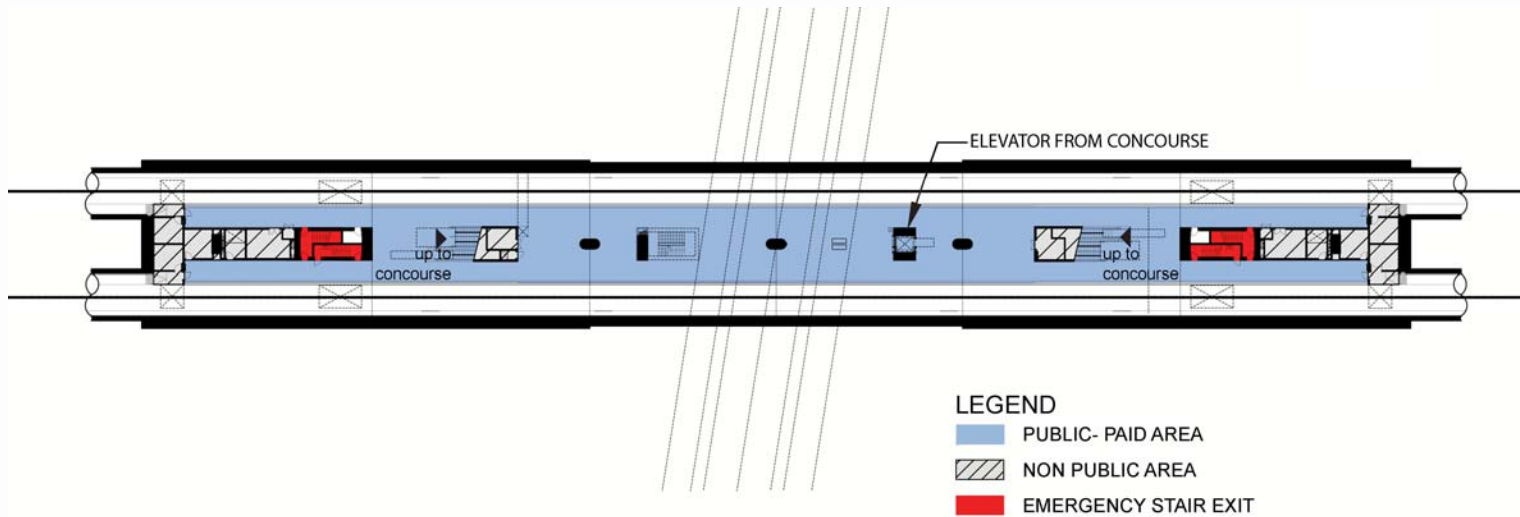
Exhibit 6 – Concourse Level



Toronto-York Spadina  
Subway Extension



# Sheppard West Station



## Exhibit 7 – Platform Level

