

TORONTO TRANSIT COMMISSION REPORT NO.

MEETING DATE: December 16, 2009

SUBJECT: TORONTO-YORK SPADINA SUBWAY EXTENSION PROJECT
VAUGHAN CORPORATE CENTRE STATION
APPROVAL OF CONCEPTUAL DESIGN

ACTION ITEM

RECOMMENDATION

It is recommended that the Commission approve the conceptual design for Vaughan Corporate Centre 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 2010-2014 Capital Program (Category - Expansion) which was approved by the Commission on September 24, 2009 and amended by the Commission on October 29, 2009.

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 Metropolitan 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 Government of Canada, the Province of Ontario, the City of Toronto, and the Regional Municipality of York. 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 A85-75C for the design of Vaughan Corporate Centre Station was awarded to the design team lead by Arup Canada Inc. The architectural firm for this team is Grimshaw Architects.

At its meeting of September 24, 2009, the Commission approved the YYSSE Design Philosophy with additional emphasis on achieving high quality architecture, urban design, streetscape, and landscape architecture as follows:

- Integrated design of all elements with strong aesthetics, high-quality urban design, 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 staff from York Region and the City of Vaughan.

DISCUSSION

Station elements have been laid out in workshops with stakeholders to maximize the potential for transit oriented development (TOD).

Vaughan Corporate Centre Station is located north of Highway 7 to the west side of the relocated Millway Avenue. The station will have a tail track structure extending north of the station box and a crossover box extending south of the station underneath Highway 7. The Vaughan Corporate Centre Station will be a multi-modal transportation hub with an on-street Passenger Pick Up and Drop Off (PPUDO), and connections to a York Region Transit (YRT) Bus Terminal and to Viva Bus Transit running along Highway 7.

The YRT bus terminal and PPUDO will be owned and maintained entirely by York Region. The bus terminal concept is still under development and will be brought forward to the Commission for information.

Exterior

- Exhibit 2 - Site Plan - Opening Day
- Exhibit 3 - Site Plan - with proposed Transit Oriented Development
- Exhibit 4 - Aerial View

The domed main entrance is located next to an on-street PPUDO on the west side of Millway Avenue just north of the intersection with Highway 7. The domed roof will be constructed as a cool roof and contains skylights to allow daylight to penetrate down to concourse. One Station Emergency Exit Building (SEEB) and vent shafts will come to the surface on the west side of Millway Avenue, north of Vaughan Street.

The second SEEB and vent shafts are located on the south-west corner of the intersection of Highway 7 and Millway Avenue. The electrical substation is located further south.

Street Level - Exhibit 5 – Section
- Exhibit 6 – Street Level Plan

Passengers arriving by YRT buses will enter the station either through the main entrance or through an underground connection, depending on the YRT bus terminal concept.

Passengers arriving at the station on foot or dropped off at the on-street PPUDO will enter the main entrance through one of four sets of doors. The entrance is open to the concourse level below with an elevator, up and down escalators, and two sets of stairs. Daylight can reach down to concourse level through openings that will be developed as design progresses, taking passenger safety into account.

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.

Concourse Level - Exhibit 7 – Concourse Level Plan

This station has been designed to maximise potential TOD with seven knockout panels, three south of Highway 7, two north of Highway 7, and 2 just south of Vaughan Street. A single continuous concourse level provides opportunities for three future developer connections to the west of the station, and three to the east. An additional knockout panel is provided at the south end of the concourse for a future secondary entrance. All connections enter into the unpaid circulation area.

A second entrance to the station is provided from the Highway 7 Viva bus facility in the centre of Highway 7 to the south end of the concourse level. The configuration of this connection and the vertical circulation elements is being developed in consultation with Viva.

The concourse level also contains TTC service spaces. The north end of the concourse contains the collector's booth and associated fareline. Moving through the fareline leads to an elevator, up and down escalators, and stairs to platform level.

Platform Level - Exhibit 8 – Platform Level Plan

The subway platform level is served by one elevator, up and down escalators, and two sets of stairs from the concourse level. Emergency exit stairs will be provided from the north and south ends of the platform.

Maintainability

Maintainability and cleaning issues and costs related to high ceilings, domed main entrance structure and skylights will be addressed by engineering solutions. Easy access and minimum maintenance requirements for cleaning, inspection and repair on a regular basis, and replacement of major elements on an end of life program will be addressed in the design.

Artwork

A Public Art selection process resulted in the selection of Paul Raff Studio as the public artist for Vaughan Corporate Centre Station. An art concept will be included in the second Public Open House for this project.

Station Name

At the Commission Meeting of October 29, 2009 correspondence was received from Tim Simmonds, Director of Economic Development, City of Vaughan, requesting that the future Vaughan Corporate Centre Station be renamed to the Vaughan Metropolitan Centre Station. The Commission received the communication and referred the correspondence to staff for consideration. Discussions are ongoing on the proposed name and a report will be brought forward early in 2010 containing recommendations for all the TYSSE station names for Commission approval.

Project Impacts

As this site and surrounding area are largely undeveloped, there is minimal potential for impact on the surrounding community during the construction period. Vaughan Corporate Centre Station will be the site of the Tunnel Boring Machine (TBM) extraction shaft for construction of the twin tunnels north from Highway 407 Station.

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

- EA Addendum Report to address realignment of tunnel and station location;
- Soil and groundwater management to address high volumes of dewatering from the large cut and cover area;
- Environmental Management Plan (EMP) to monitor areas potentially affected by dewatering;
- Construction Monitoring Plans and programs to address noise, vibration, dust control, stray current and tree protection; and
- Traffic Management Plan to address Highway 7 detours and truck movements associated with spoils removals.

Cost and Schedule

The budget for construction of Vaughan Corporate Centre Station is \$128 million, including the cross-over and tail track. The estimated final cost of construction for Vaughan Corporate Centre Station is \$177 million.

The main impacts to the original estimate and current budget, with implications to the station box, the tail track, and the crossover box, are:

- Escalation of construction costs during the period 2006-2008 higher than budgeted;
- High water table with impact on excavation of the station, crossover track, and tail track;
- Extra depth of excavation for the station, cross-over track, and tail track;
- Additional decking required for construction south of Highway 7;
- Protection for future installation of platform edge doors;
- Green standards; and
- Provision of public artwork.

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

The proposed project schedule reflects start of construction in 2011. Vaughan Corporate Centre Station is scheduled for Substantial Completion in 2014.

Next Steps

Following the first Public Open House in late spring 2010, the design will be developed leading to a second Public Open House. 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.

November 24, 2009
70-14-31
2505285
Attachments: Exhibits 1 to 8



Toronto-York Spadina Subway Extension



Toronto-York Spadina Subway Extension

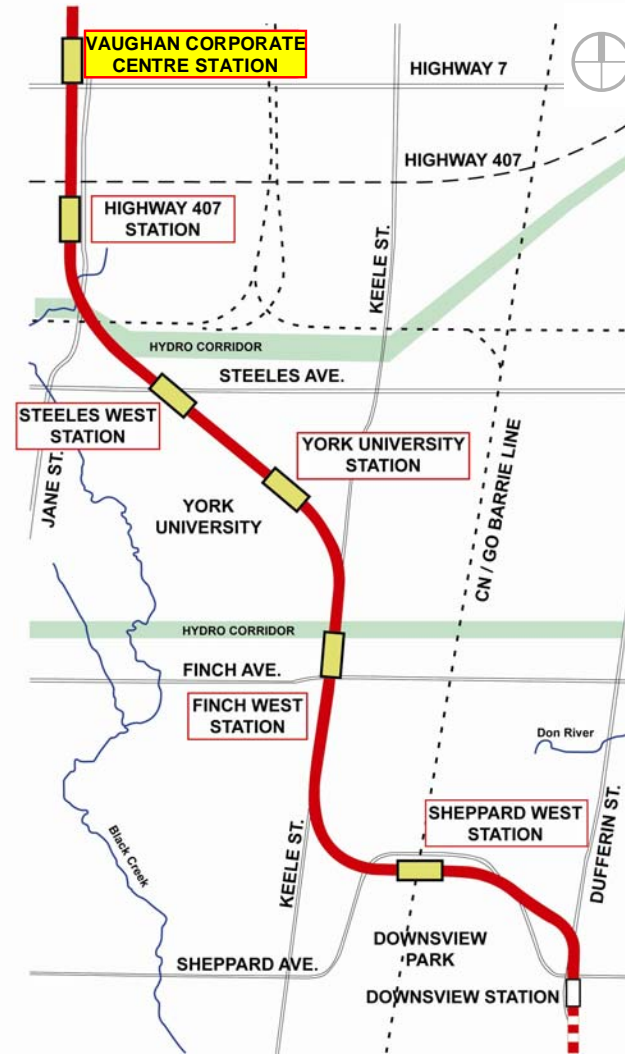


Exhibit 1 - TYSSE Map



Toronto-York Spadina
Subway Extension



Vaughan Corporate Centre Station

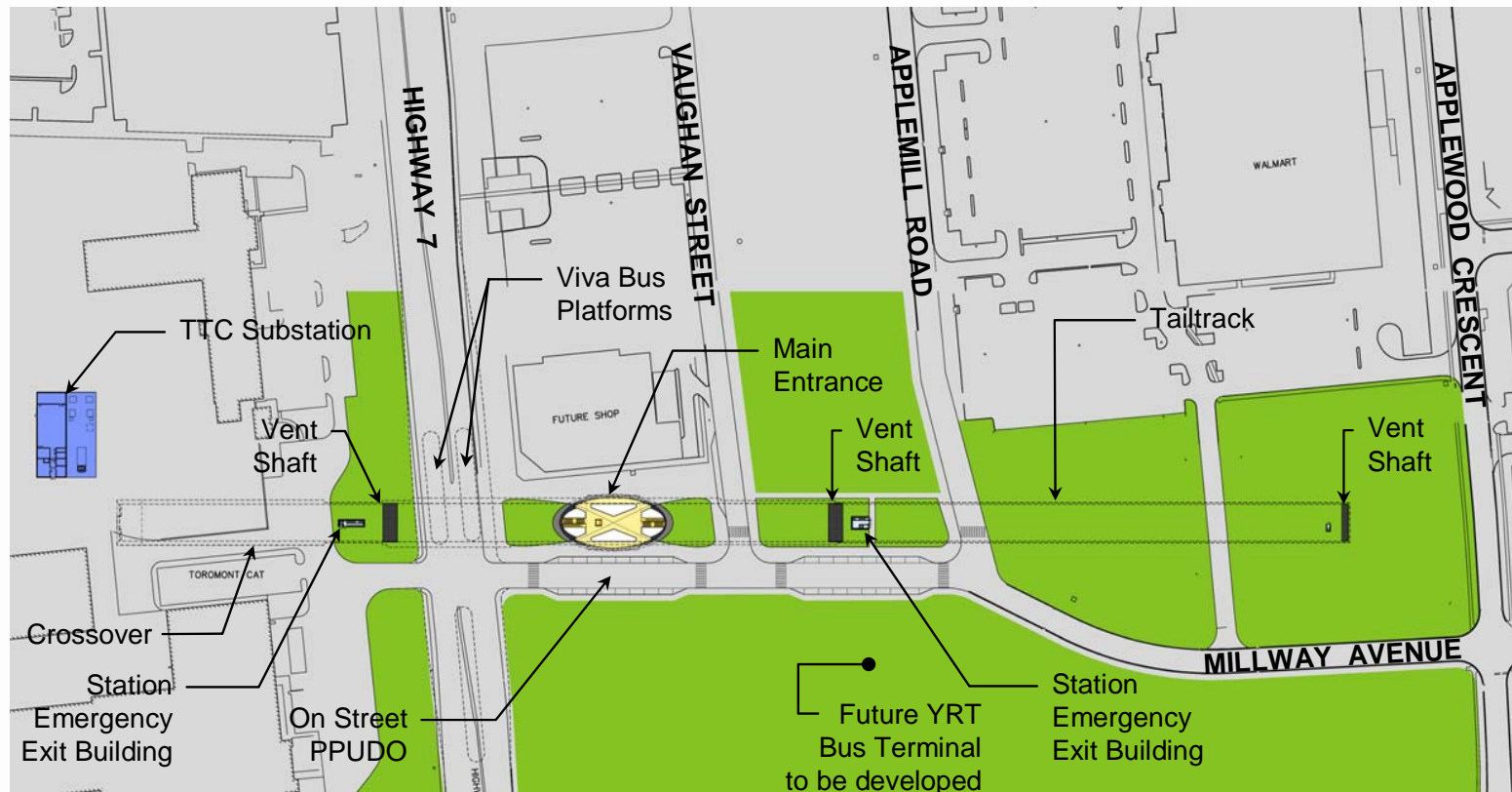


Exhibit 2 - Site Plan - Opening Day



Toronto-York Spadina Subway Extension



Vaughan Corporate Centre Station

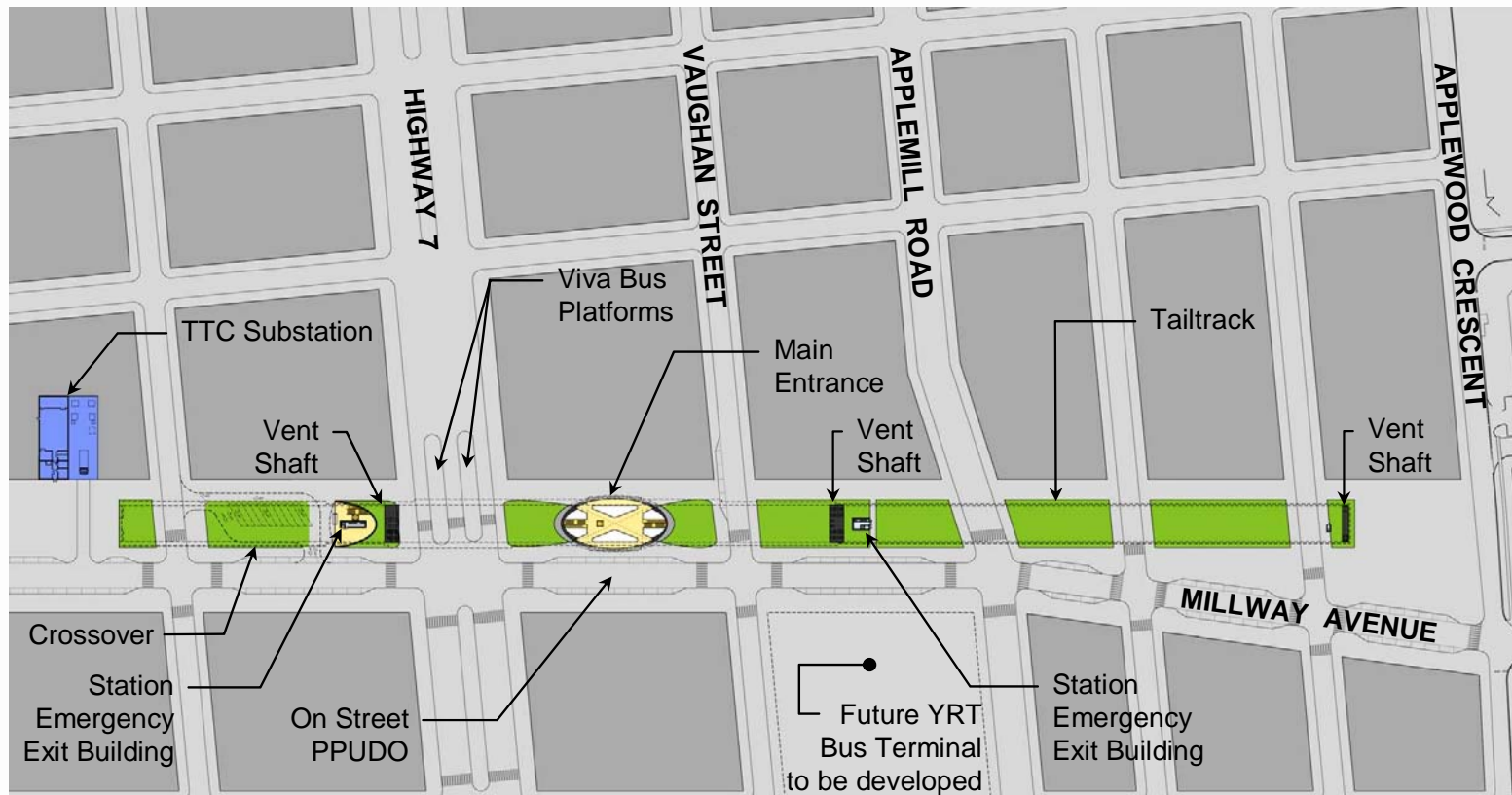


Exhibit 3 - Site Plan - with Proposed Transit Oriented Development



Toronto-York Spadina
Subway Extension



Vaughan Corporate Centre Station

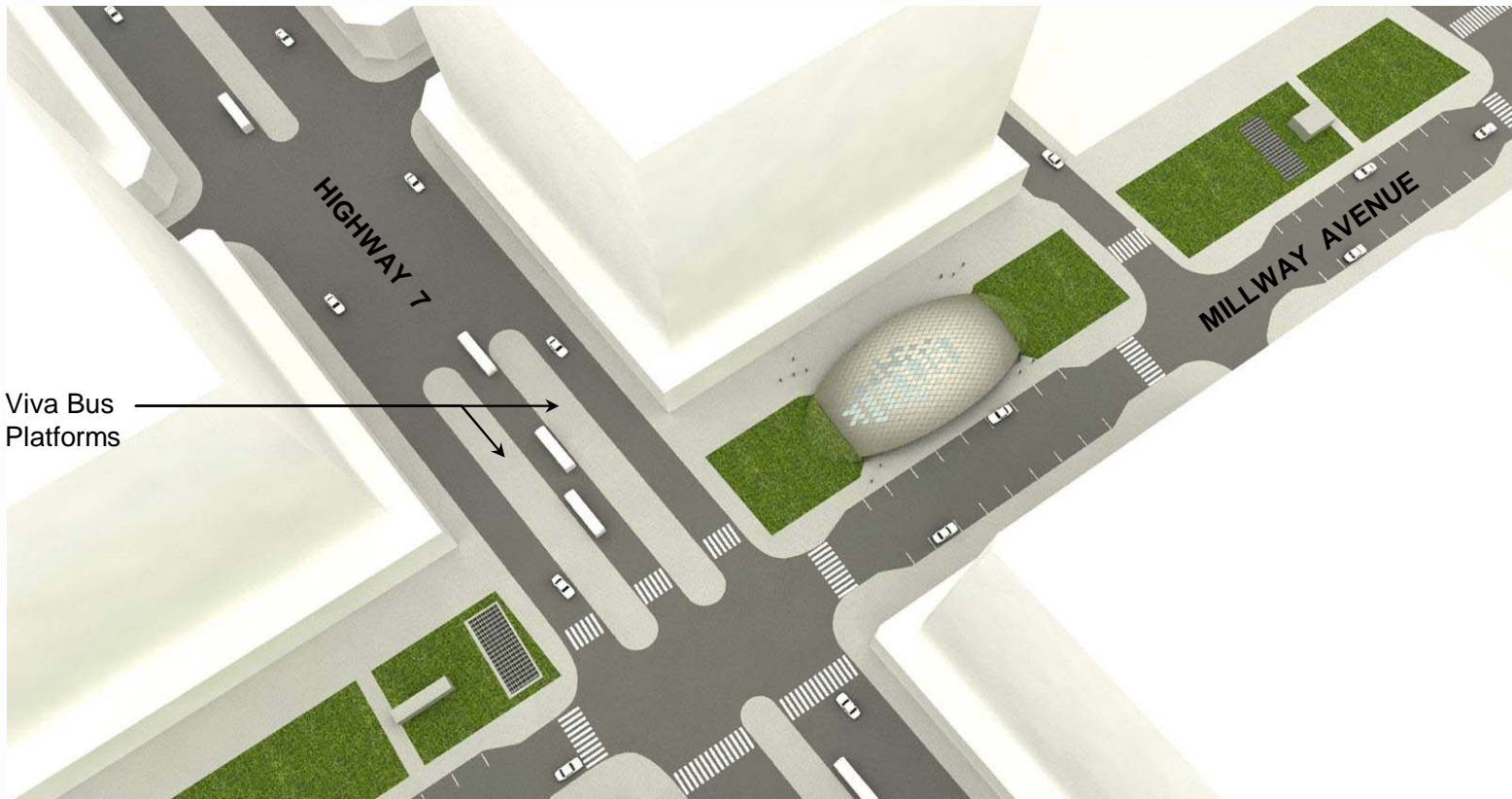


Exhibit 4 - Aerial View



Toronto-York Spadina
Subway Extension



Vaughan Corporate Centre Station

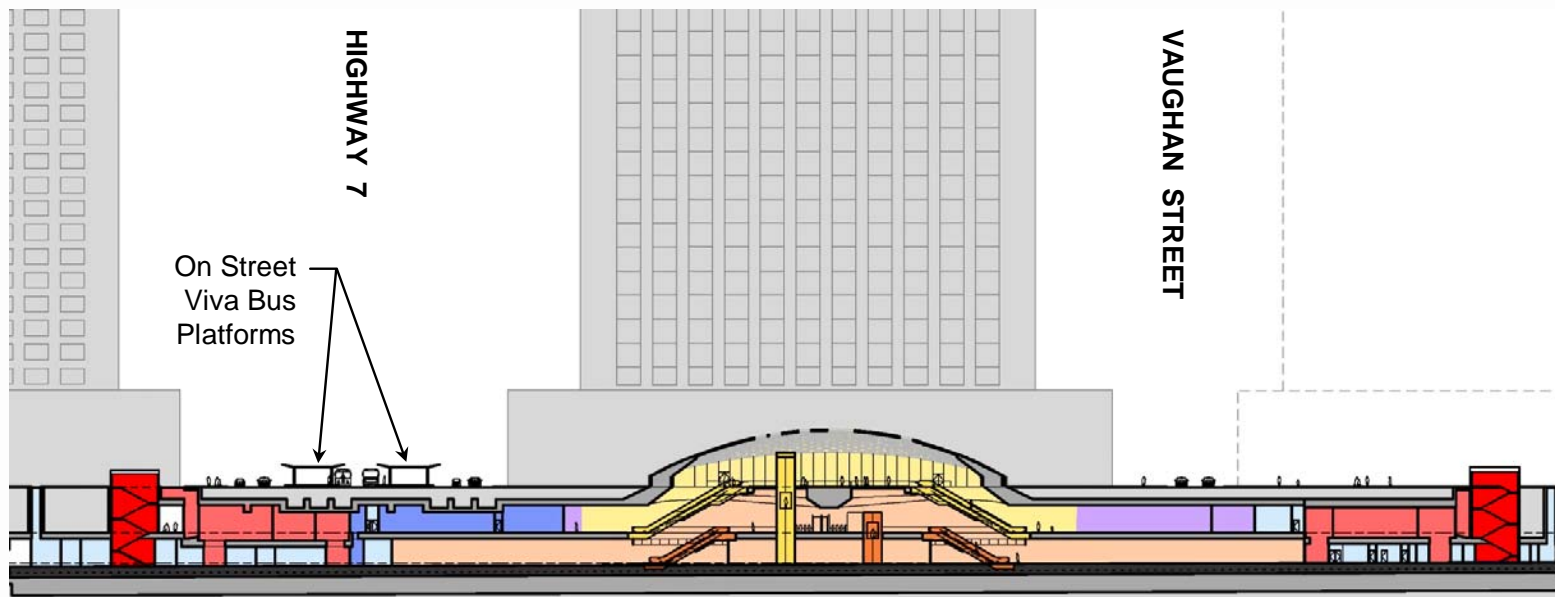


Exhibit 5 - Section



Vaughan Corporate Centre Station

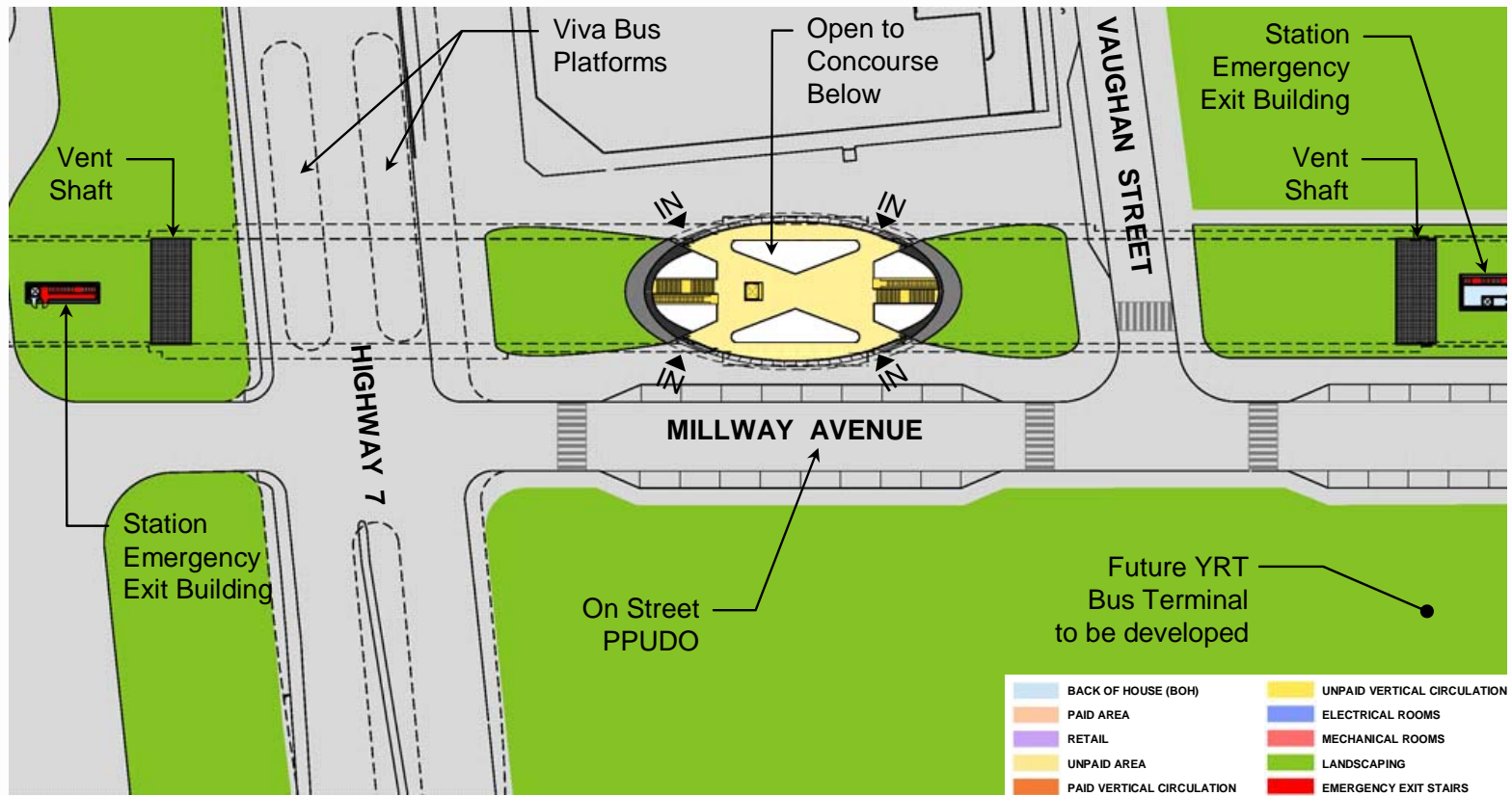


Exhibit 6 - Street Level Plan



Vaughan Corporate Centre Station

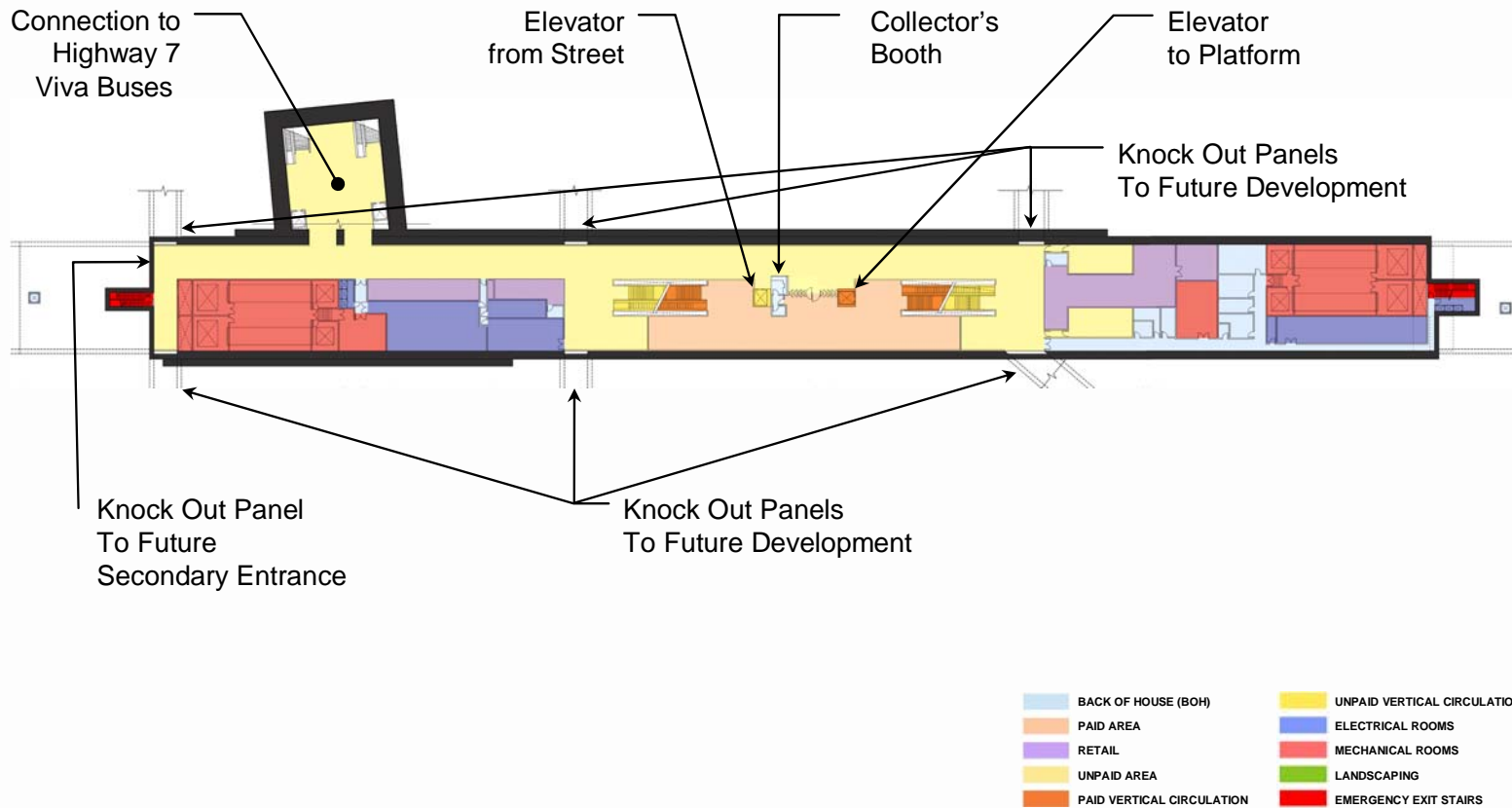


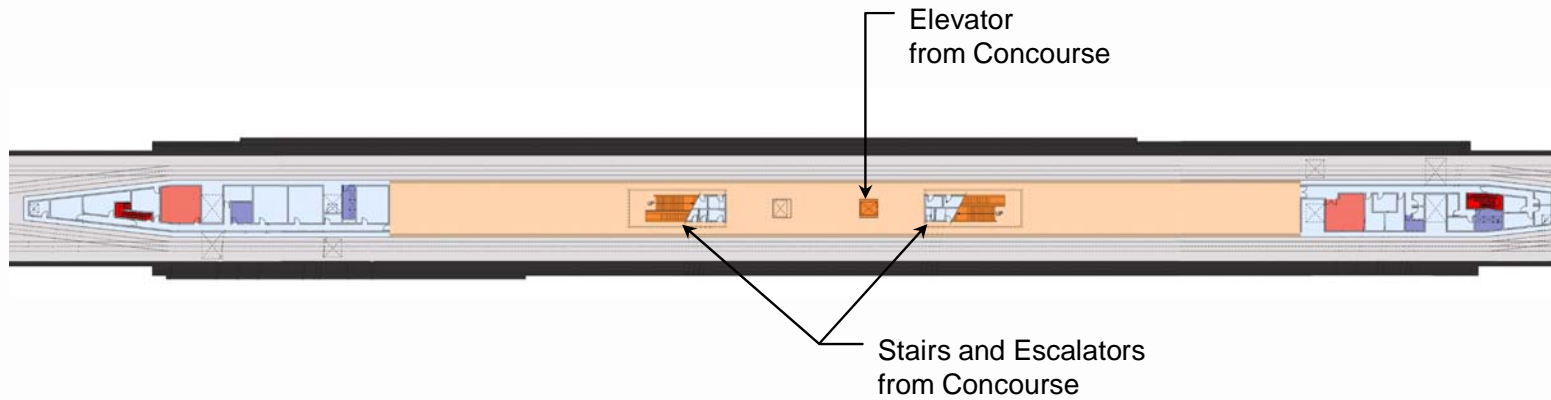
Exhibit 7 - Concourse Level Plan



Toronto-York Spadina
Subway Extension



Vaughan Corporate Centre Station



- | | |
|---------------------------|-----------------------------|
| BACK OF HOUSE (BOH) | UNPAID VERTICAL CIRCULATION |
| PAID AREA | ELECTRICAL ROOMS |
| RETAIL | MECHANICAL ROOMS |
| UNPAID AREA | LANDSCAPING |
| PAID VERTICAL CIRCULATION | EMERGENCY EXIT STAIRS |

Exhibit 8 - Platform Level Plan