

# TORONTO TRANSIT COMMISSION REPORT NO.

**MEETING DATE:** July 14, 2010

**SUBJECT:** TORONTO-YORK SPADINA SUBWAY EXTENSION PROJECT  
HIGHWAY 407 STATION  
APPROVAL OF FINISHES AND ARTWORK

## **ACTION ITEM**

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### **RECOMMENDATION**

It is recommended that the Commission approve the final design, finishes, and artwork for Highway 407 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 1439 to 1442 of the TTC 2010-2014 Capital Program (Category - Expansion) which was approved by City Council on December 8, 2009.

### **BACKGROUND**

The TTC is planning the construction of a 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 A85-75D for the design of Highway 407 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.

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.

At the Commission meeting of November 17, 2009, the Commission approved the concept design for this station.

The project has been reviewed by the public and all stakeholders including York Region, GO Transit/Metrolinx, MTO, and the City of Vaughan.

## **DISCUSSION**

**OVERVIEW:**                      Exhibit 1 – TYSSE Map  
   Exhibit 2 – Site Plan

Highway 407 Station is located west of Jane Street and south of Highway 407 on the west bank of Black Creek. A hydro corridor runs east/west just south of the station. The Highway 407 Station will be a multi-modal transportation hub with parking for 600 commuters, a 30 space Passenger Pick-Up and Drop-Off facility (PPUDO), and an 18 bay York Region Transit (YRT) and GO Transit bus terminal. The design also contains provisions for future connection to the proposed MTO Highway 407 Transitway. A new bridge structure over Black Creek provides access to the bus terminal and parking lot.

The bus terminal and PPUDO will be owned and maintained entirely by GO Transit and York Region. The parking lot and below grade structures will be owned and operated by the Commission.

## **PUBLIC REVIEW:**

The Highway 407 Station functional design concept has been reviewed as follows:

- Advisory Committee on Accessible Transportation (ACAT) Design Subcommittee on October 26, 2009;
- Public open house on March 10, 2010 (jointly with Steeles West and Vaughan Corporate Centre Stations); and
- ACAT Design Subcommittee on June 9, 2010.

The March 10, 2010 open house was held specifically to exhibit functional design. There



- Exhibit 7 – Entrance Level
- Exhibit 8 – Interior View – Bus Terminal
- Exhibit 9 – Interior View – Entrance Level

Passengers enter the concourse level from the surface, from the bus terminal, from the parking/PPUDO entrance, or from a level connecting to the future MTO Highway 407 Transitway. The east side of the station structure is next to Black Creek and contains sloped windows that allow daylight to penetrate into the concourse and down to platform level.

Passengers arriving by GO Transit or YRT bus will move from the bus terminal level directly to the concourse by an elevator, centrally located escalators and stairs. All bus passengers enter the unpaid side of the concourse, as there are no TTC buses in the terminal.

Passengers arriving at the station by car or bicycle will enter through the entrance level at the PPUDO and walk down a ramp to an elevator, escalators, and stairs to the concourse. The station will incorporate short-term bicycle parking in the form of post and rings located under roof overhangs. Consideration was given to long term bicycle storage facilities, but due to funding limitations, the City of Toronto reconsidered this initiative. The City is currently developing a standard for long term secure storage and may proceed with this at selected stations, depending on funding availability. In the mean time the standard TTC bicycle facilities will be provided, subject to possible enhancements currently under consideration.

Interior walls and columns to the bus platforms and waiting area are clad with white ceramic panels, with doors painted to match. Bus platform floors are concrete, transitioning to polished concrete inside the bus terminal. Stairs are dark granite with nosings in a paler colour to provide contrast required to meet the TTC barrier-free design standards, with a field of TTC standard warning tiles at the top landing. Escalators are TTC standard high deck with stainless steel clad balustrades and a yellow art glass finish to the outer balustrades. The guardrails around the vertical circulation openings are stainless steel frames with tempered-laminated glass panels. Ceilings are clear anodised brushed aluminum perforated panels containing acoustic absorbing material, with accent downstands in a gloss black finish.

- Concourse:**
- Exhibit 10 – Concourse Level
  - Exhibit 11 – Interior View – Concourse

The concourse leads passengers from all entrance facilities to the fare line that contains an easier access low fare gate. The future Highway 407 Transitway will also connect into the concourse on the unpaid side of the fare line. Passing through the fare line leads to a landing that projects into a multi-storey space with a view out through a bank of sloped art glass windows east toward Jane Street. The landing, referred to as the “lily pad”, leads to an elevator and four escalators that connect 12m down to platform. A staircase also wraps around the glazed elevator shaft down to the platform to accommodate additional capacity.

The concourse level also contains TTC service spaces, and the north end includes a void for the future Highway 407 Transitway to run through the station box.

Interior walls and columns are clad with white ceramic panels, some with perforations and backed with acoustic materials, with doors painted to match. Floors are terrazzo. Stairs are dark granite with nosings in a paler colour to provide contrast required to meet the TTC barrier-free design standards, with a field of TTC standard warning tiles at the top landing. Escalators are TTC standard high deck with stainless steel clad balustrades and a yellow art glass finish to the outer balustrades. The guardrails around the vertical circulation openings are stainless steel frames with tempered-laminated glass panels. Ceilings are exposed architectural finish concrete.

**Maintenance Level:** Exhibit 12 – Maintenance Level

The maintenance level is not accessible to the public, who move through this level on the elevator, stair, or escalators. This level contains TTC service rooms including the emergency ventilation fans.

**Platform:** Exhibit 13 – Platform Level  
Exhibit 14 – Interior View – Platform

The subway platform level is served by an elevator from the concourse level, by four escalators, and a stair. There are no columns on the platform, which allows an open view up to the sky through the maintenance level to the sloped windows and artwork above.

Emergency exit stairs have been provided at both ends of the platform.

Walls around service rooms and columns are clad with large white ceramic wall panels to match those at concourse and surface levels. Floors are in coloured terrazzo. Yellow platform edge tiles are used to distinguish both edges of the platform, and a TTC standard wayfinding route is located centred along the length of the platform. Stairs are dark granite with nosings in a paler colour to provide contrast required to meet the TTC barrier-free design standards, with a field of TTC standard warning tiles at the top landing. Escalators are TTC standard high deck with stainless steel clad balustrades. Ceilings are clear anodised aluminum perforated panels containing acoustic absorbing material. Composite metal panels cover the sloping shaft through the service level.

TYSSE is currently reviewing options for mounting the platform edge sign bands. The optimal location for the platform edge sign band is to have it integrated into the header of the future PEDs. As an interim measure TYSSE are exploring options of suspending the platform edge sign band from the ceiling or smoke canopies above the platform edges or mounting the information contained on the signs on the train wall.

**Artwork:** Exhibits 15 and 16 – Artwork

A Public Art selection process resulted in the selection of David Pearl as the public artist for Highway 407 Station. The artwork has been approved by the Highway 407 Station Art Design Review Committee (ADRC).

The artist identified two areas for the artwork in this station: the subway skylights and the western bus station glass façade at the top of the escalators. He describes this as:

“A simple palette of expressive coloured glass works with the dynamic of natural light and the movement of the observer to animate the space and interior surfaces. This is colour that is not coded to sign or direct – just pure coloured natural light; responding to the cycles and rhythms of the sun; echoing the building’s response to the greenbelt surroundings and its environmental sensitivity celebrated as art and architecture.”

**Project Impacts:**

As this site and surrounding area is largely undeveloped, there is limited impact of the station on the surrounding community with the exception of during the construction period. The design team is working closely with the Toronto and Region Conservation Authority (TRCA) to address the impacts of the design and construction of the station components on Black Creek. Highway 407 Station will be the site of the tunnel boring machine (TBM) launch shafts for construction of the twin tunnels running north toward Vaughan Corporate Centre Station, and southeast toward Steeles West Station.

To address the above impacts, the following steps have been undertaken during design development:

- Highway 407 Station and the adjoining will be constructed under one contract affording a single point of responsibility;
- Discussions with the TRCA; and
- An Environmental Management Plan (EMP) is included in the contract document to address the effects of dewatering, stormwater management, and erosion and sediment control;
- Instrumentation, inspection and response procedures will be in place to monitor and mitigate construction noise, vibration and dust control.

**Cost and Schedule:**

The estimated final cost of construction costs for Highway 407 Station is \$140 million, including costs recoverable from MTO and GO Transit. The proposed project schedule reflects completion of design development to 100% in early summer 2010. Highway 407 Station is scheduled for Substantial Completion by the end of 2014.

**Next Steps:**

This station is scheduled to be tendered as part of the North Tunnels Contract in August 2010.

**JUSTIFICATION**

Approval will allow the station design to be finalized.

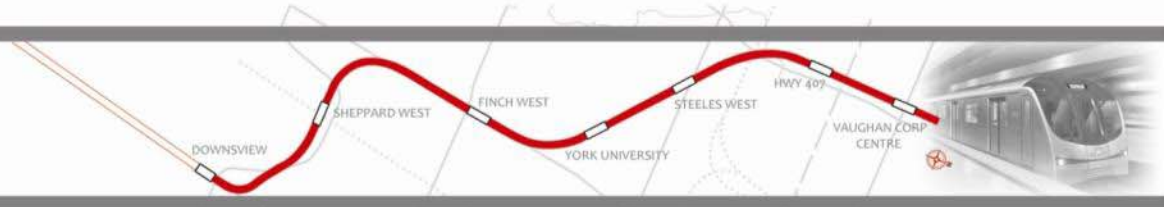
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June 16, 2010

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Attachments: Exhibits 1 to 16



# Highway 407 Station

Located South West of 407 ETR and Jane Street intersection

- Five Level intermodal line station
- 600 Bay Commuter Parking Lot
- Passenger Pick-Up and Drop-Off (PPUDO)
- 18 bay Bus Terminal (GO, YRT & VIVA)
- Future Connection to MTO 407 Transitway

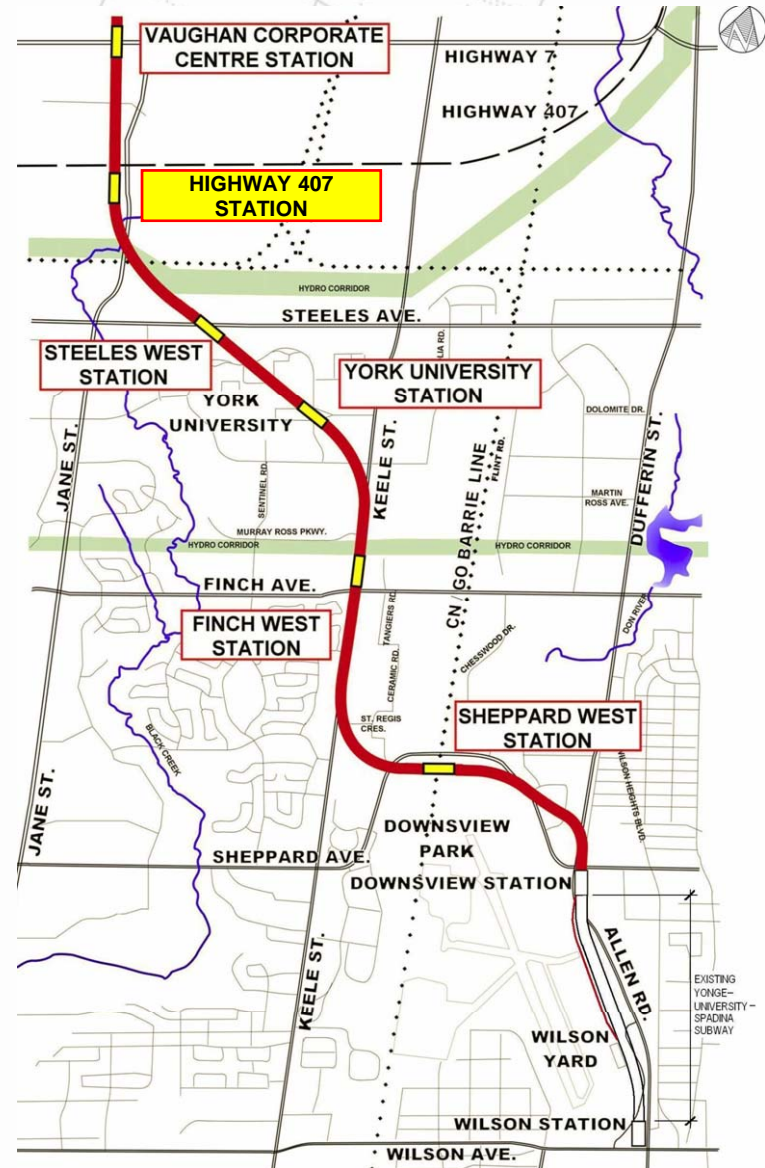
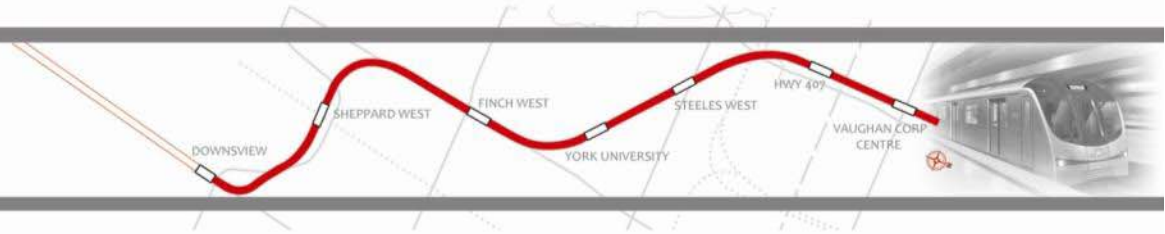


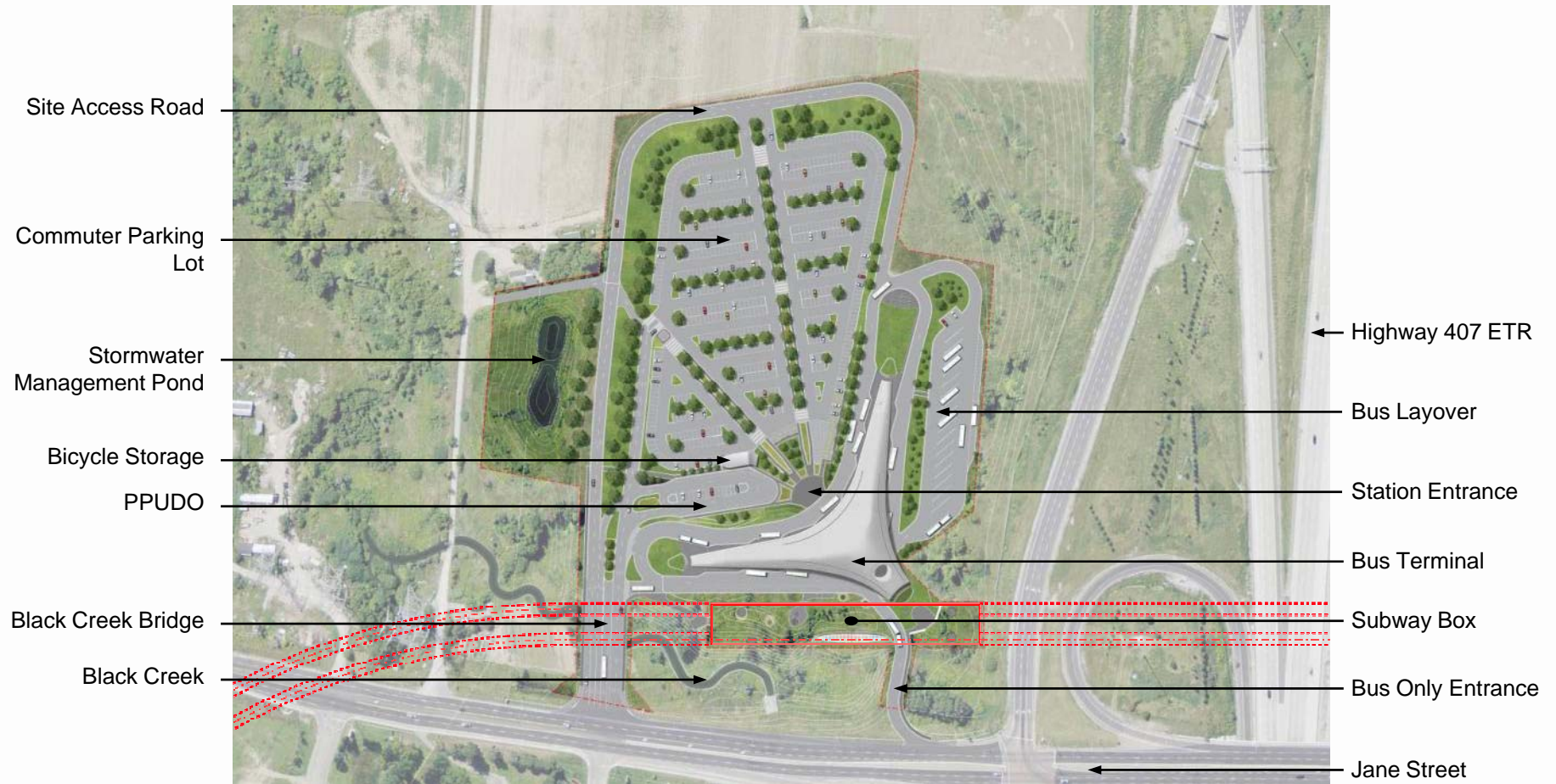
Exhibit 1 – TYSSE Map



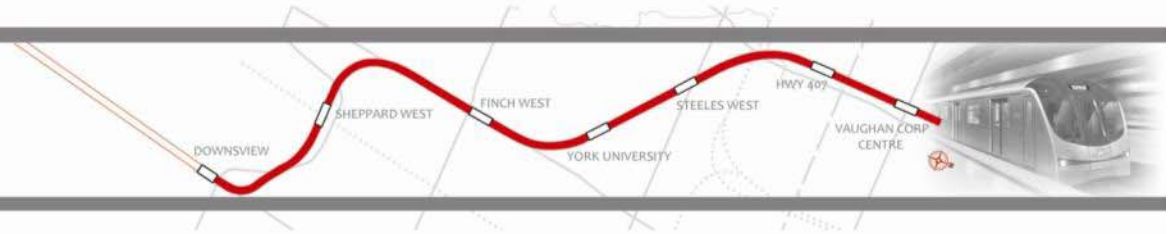
Toronto-York Spadina  
Subway Extension



# Highway 407 Station



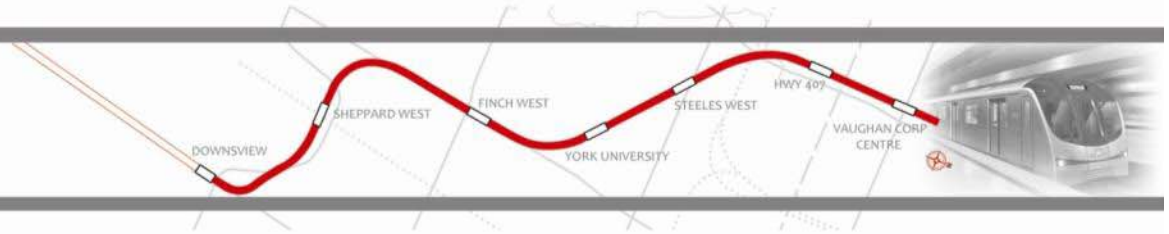
## Exhibit 2 – Site Plan



## Highway 407 Station



**Exhibit 3 – Exterior View from Jane Street**



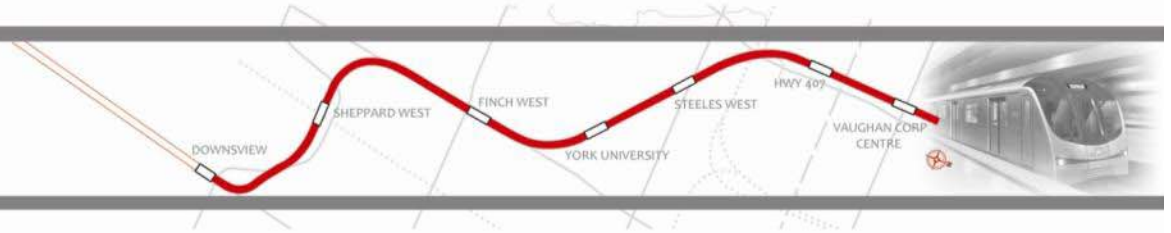
## Highway 407 Station



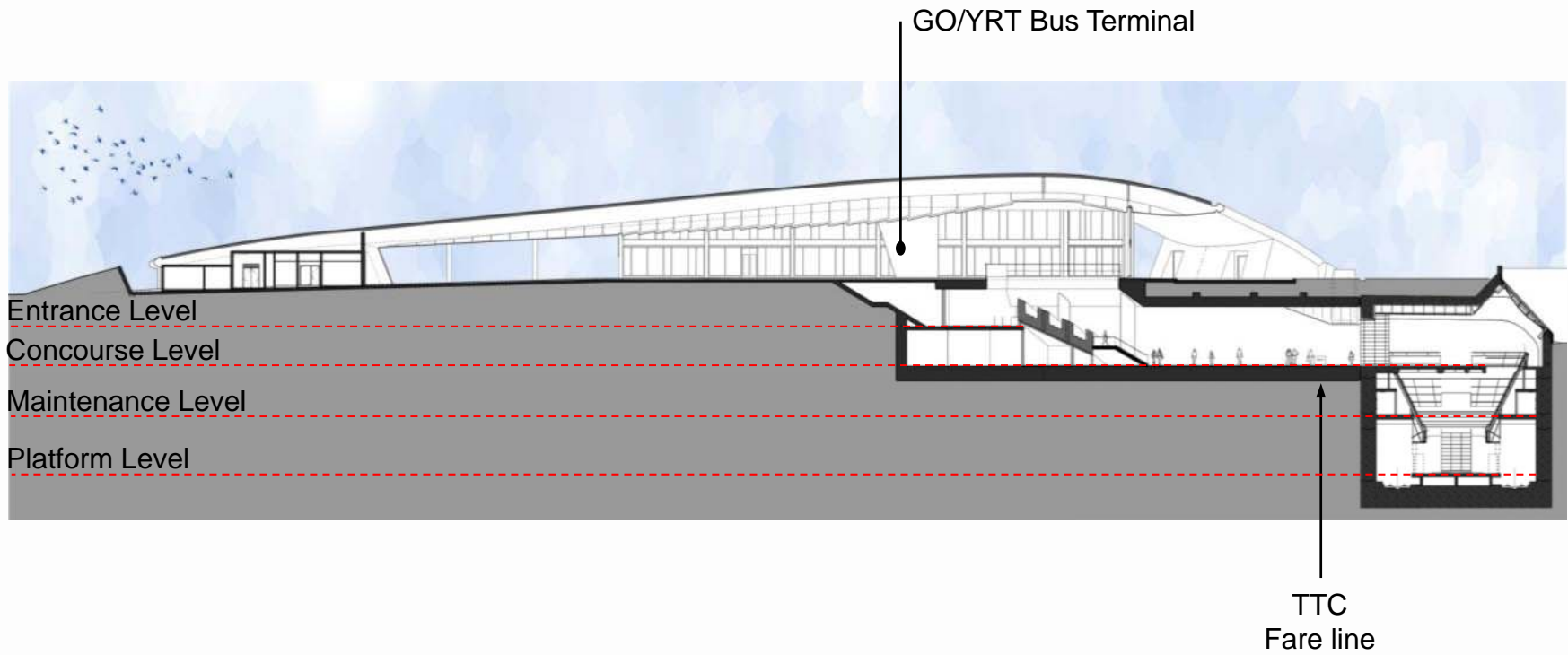
**Exhibit 4 – Exterior View from Parking Lot**



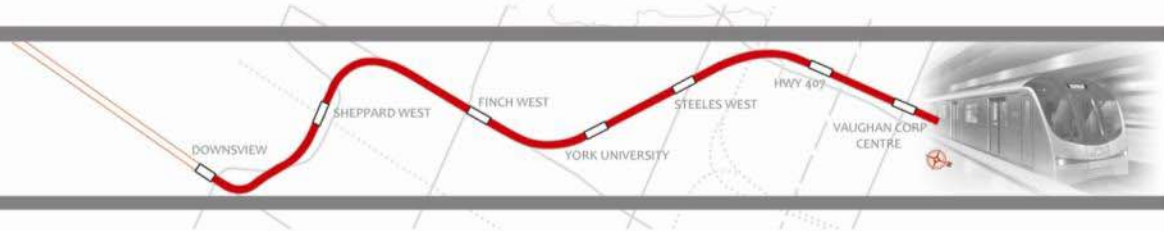
Toronto-York Spadina  
Subway Extension



# Highway 407 Station



## Exhibit 5 – Section

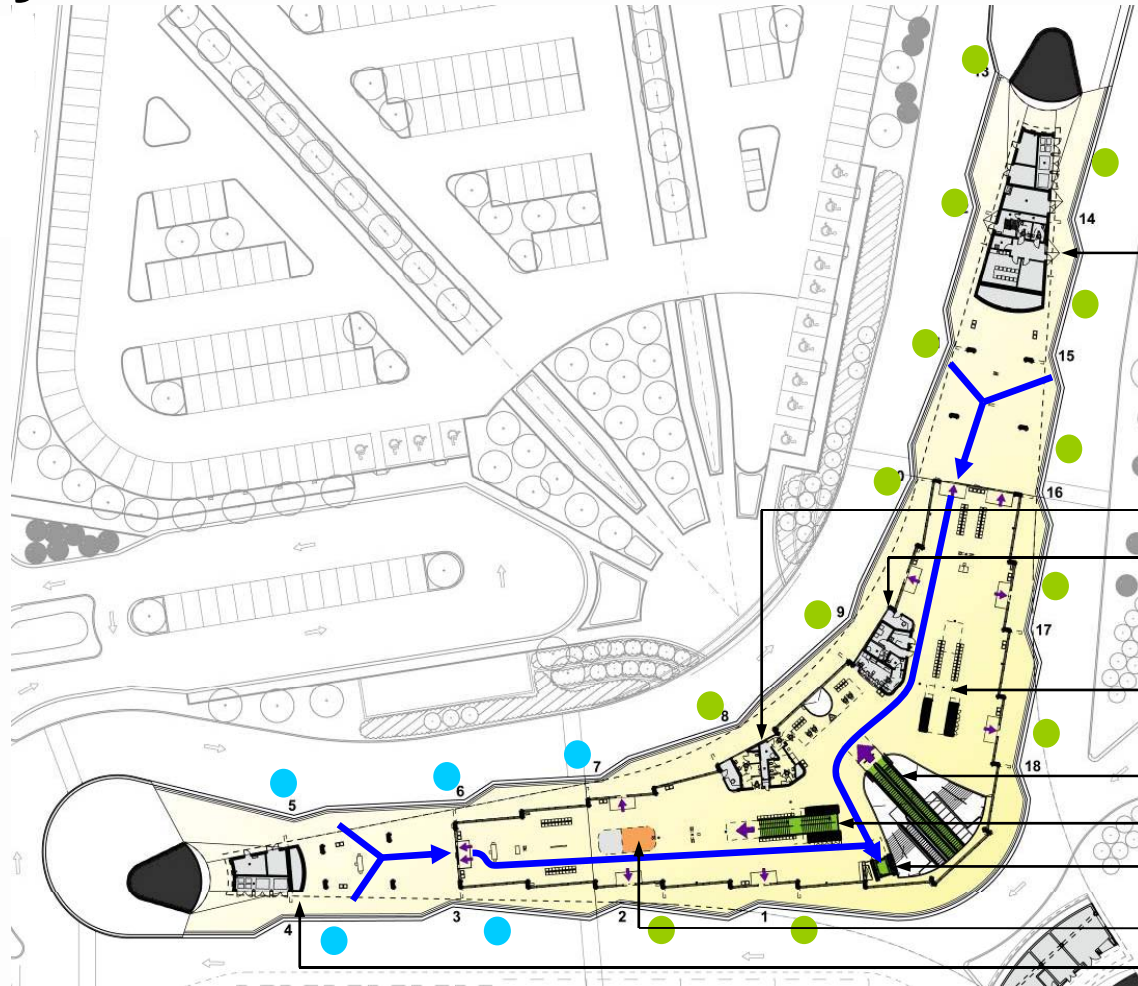


# Highway 407 Station



**LEGEND**

- PUBLIC PAID AREA
- PUBLIC UNPAID AREA
- RETAIL AREA
- VERTICAL CIRCULATION
- NON PUBLIC AREA
- EMERGENCY EXIT STAIR
- BARRIER FREE ROUTE
- GO BUS BAY
- YRT / VIVA BUS BAY



Bus Driver  
Accommodation

Public Washrooms  
Ticket Office and  
GO Inspector

Future Public Stair

Escalators  
Public Stair  
Elevator

Future Retail  
YRT Inspector

## Exhibit 6 – Bus Terminal Level

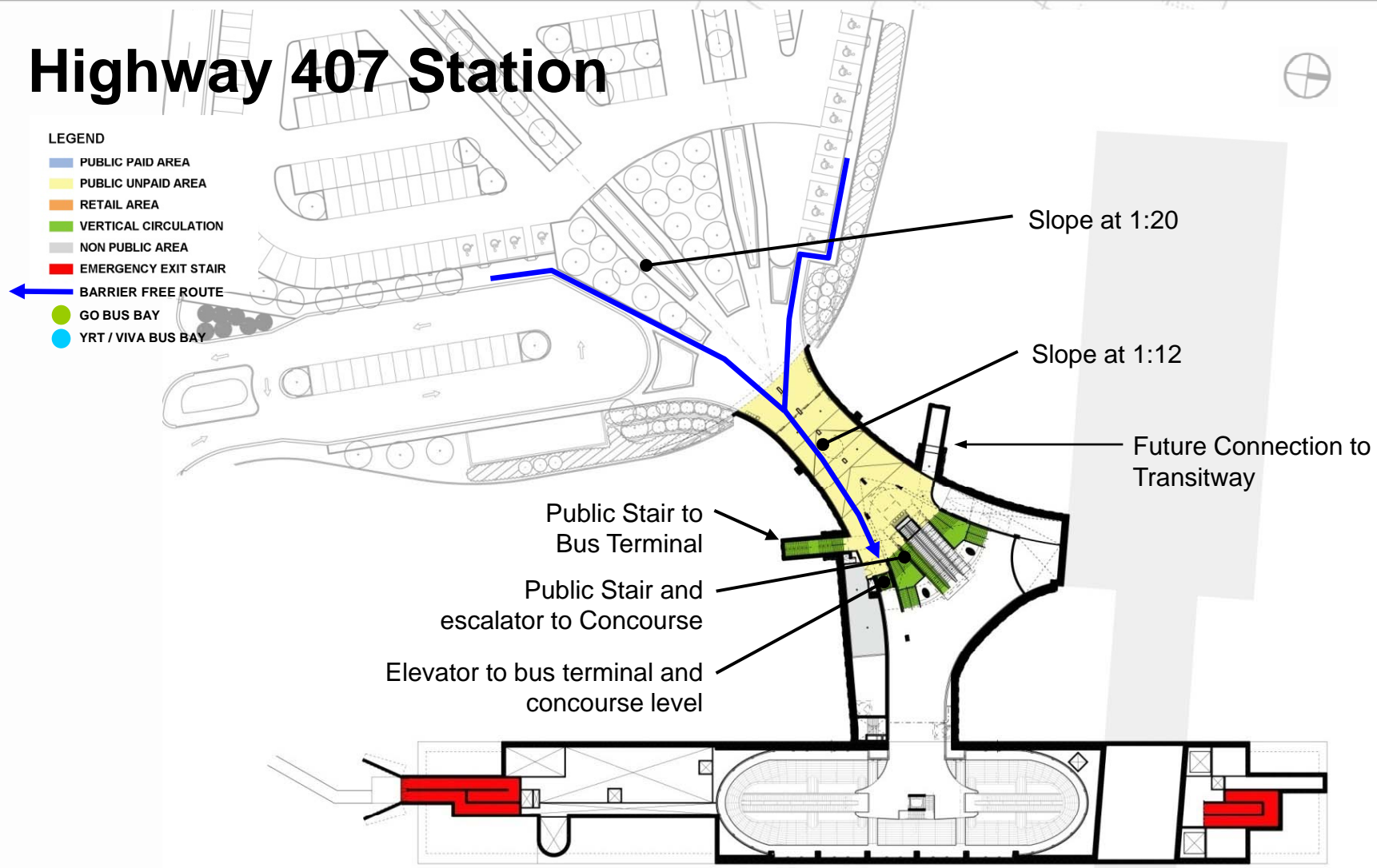


# Highway 407 Station

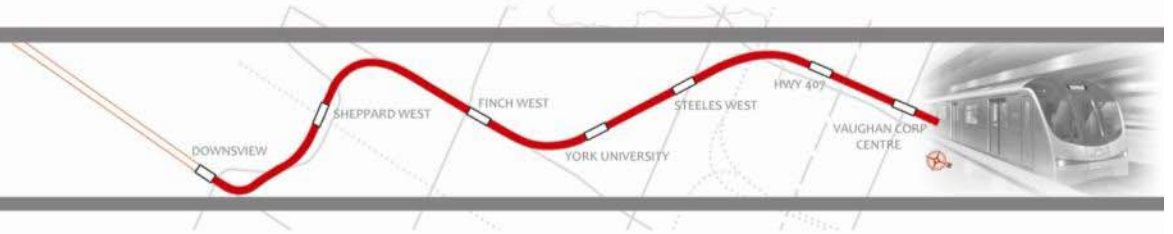


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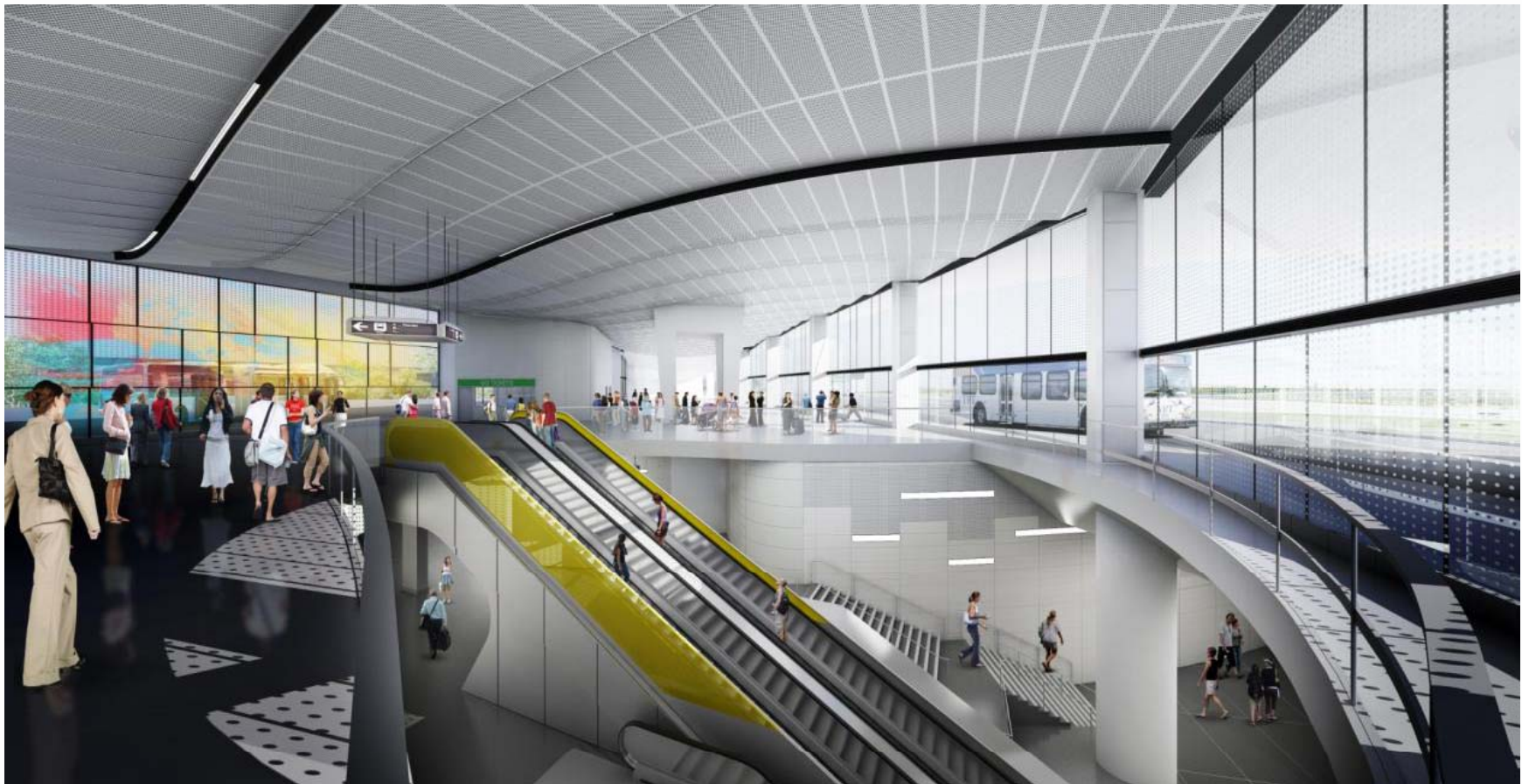
- PUBLIC PAID AREA
- PUBLIC UNPAID AREA
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- GO BUS BAY
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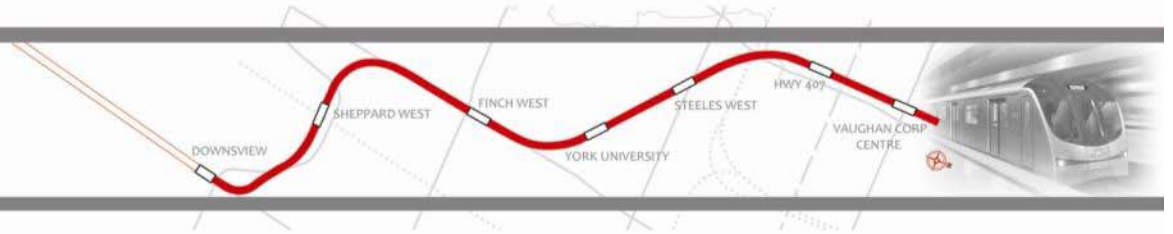
**Exhibit 7 – Entrance Level**



## Highway 407 Station



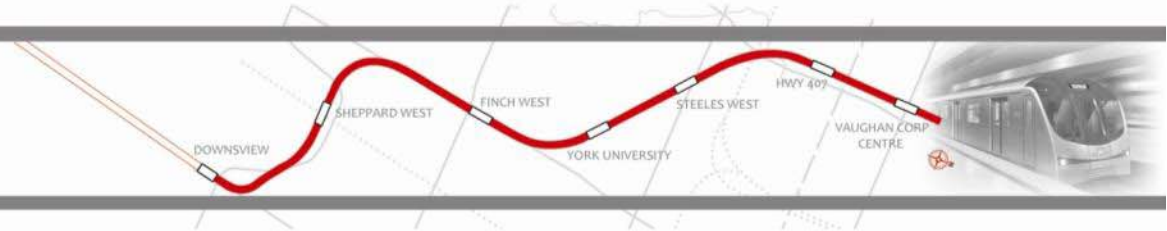
**Exhibit 8 – Interior View – Bus Terminal**



## Highway 407 Station



**Exhibit 9 – Interior View – Entrance Level**

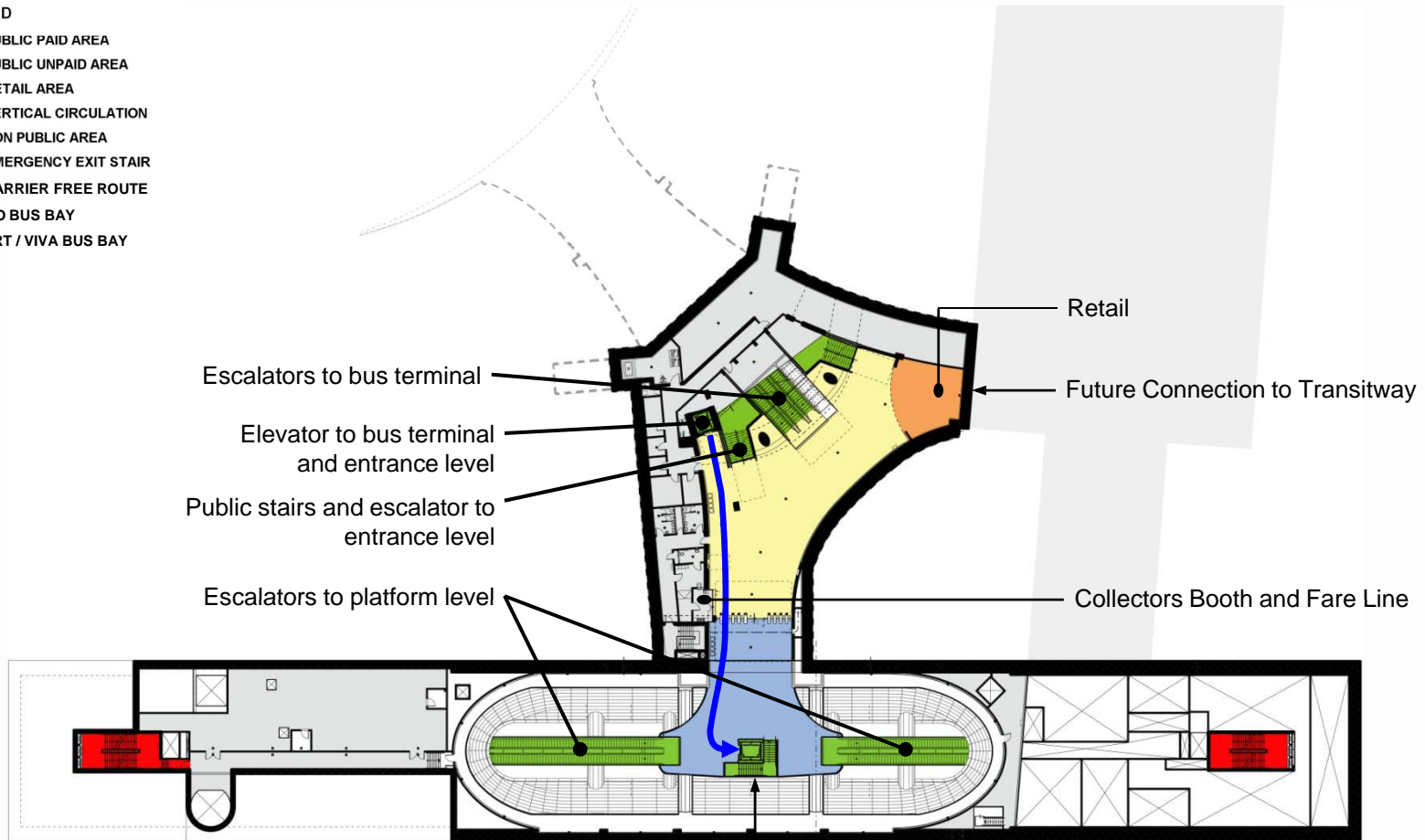


# Highway 407 Station



**LEGEND**

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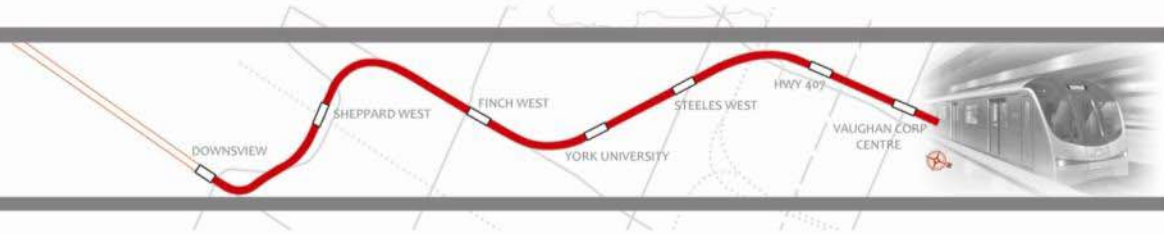


## Exhibit 10 – Concourse Level

Elevator and stair to Subway Platform



Toronto-York Spadina  
Subway Extension



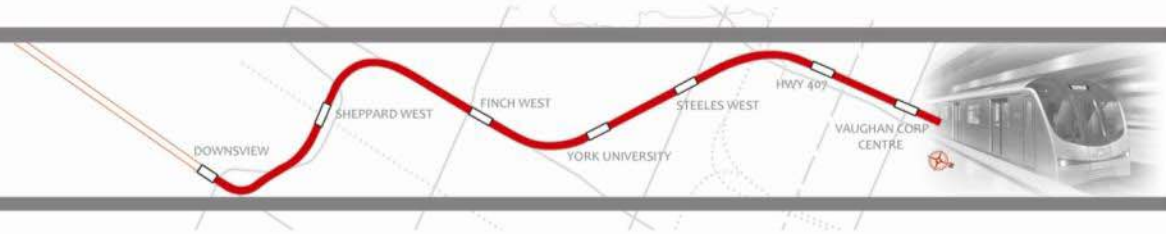
## Highway 407 Station



**Exhibit 11 – Interior View – Concourse**



Toronto-York Spadina  
Subway Extension

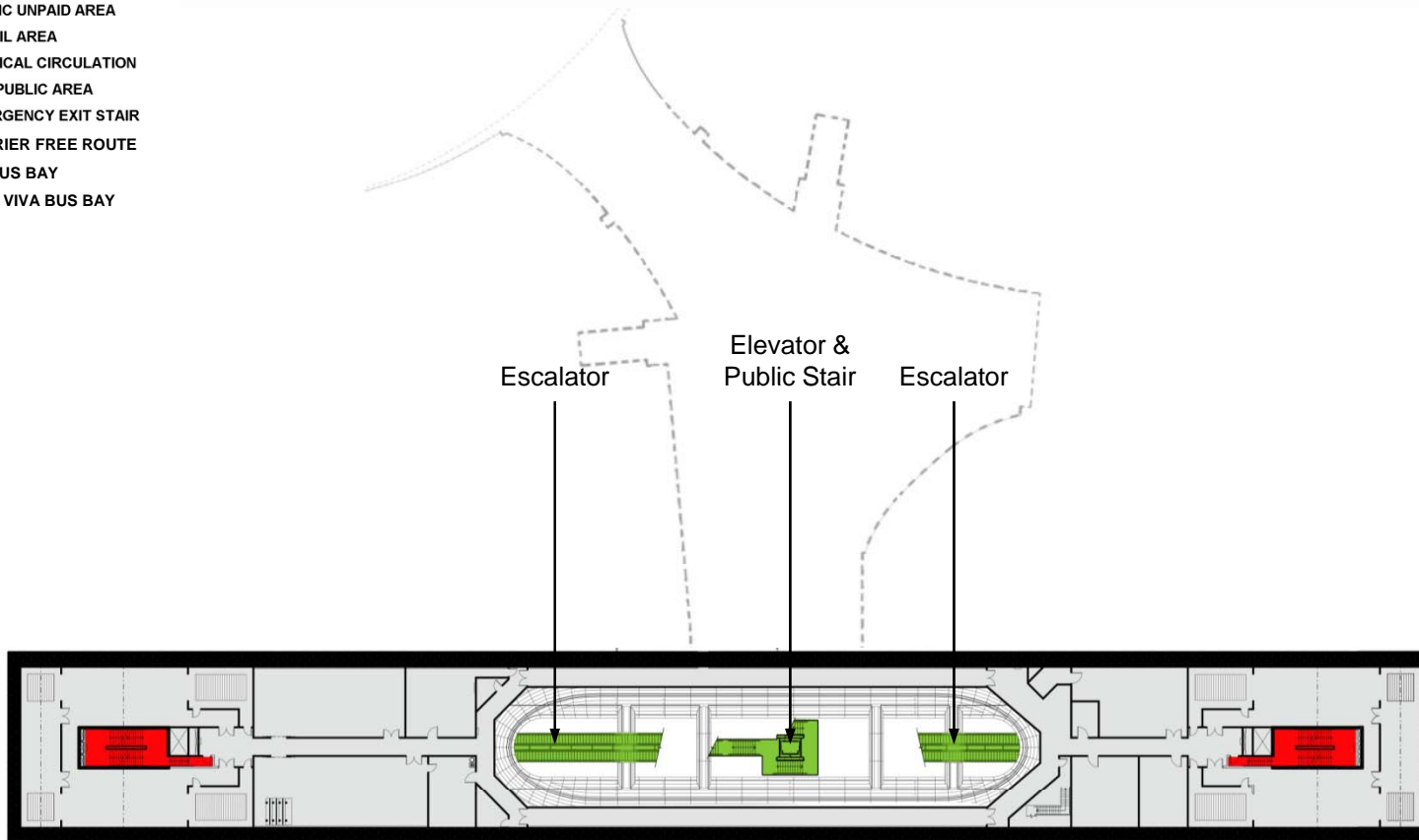


# Highway 407 Station



## LEGEND

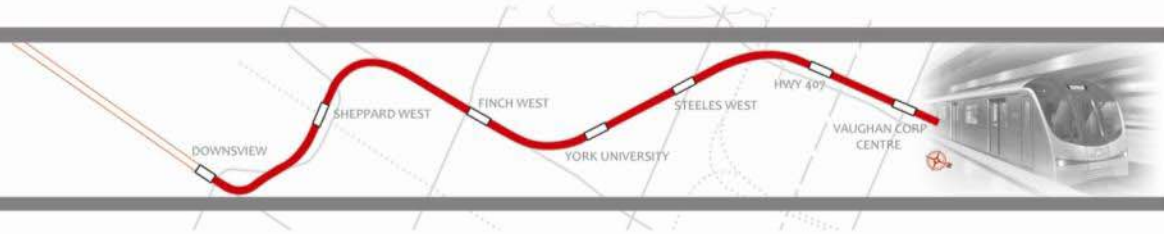
- PUBLIC PAID AREA
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## Exhibit 12 – Maintenance Level



Toronto-York Spadina  
Subway Extension



# Highway 407 Station



## LEGEND

- PUBLIC PAID AREA
- PUBLIC UNPAID AREA
- RETAIL AREA
- VERTICAL CIRCULATION
- NON PUBLIC AREA
- EMERGENCY EXIT STAIR
- BARRIER FREE ROUTE
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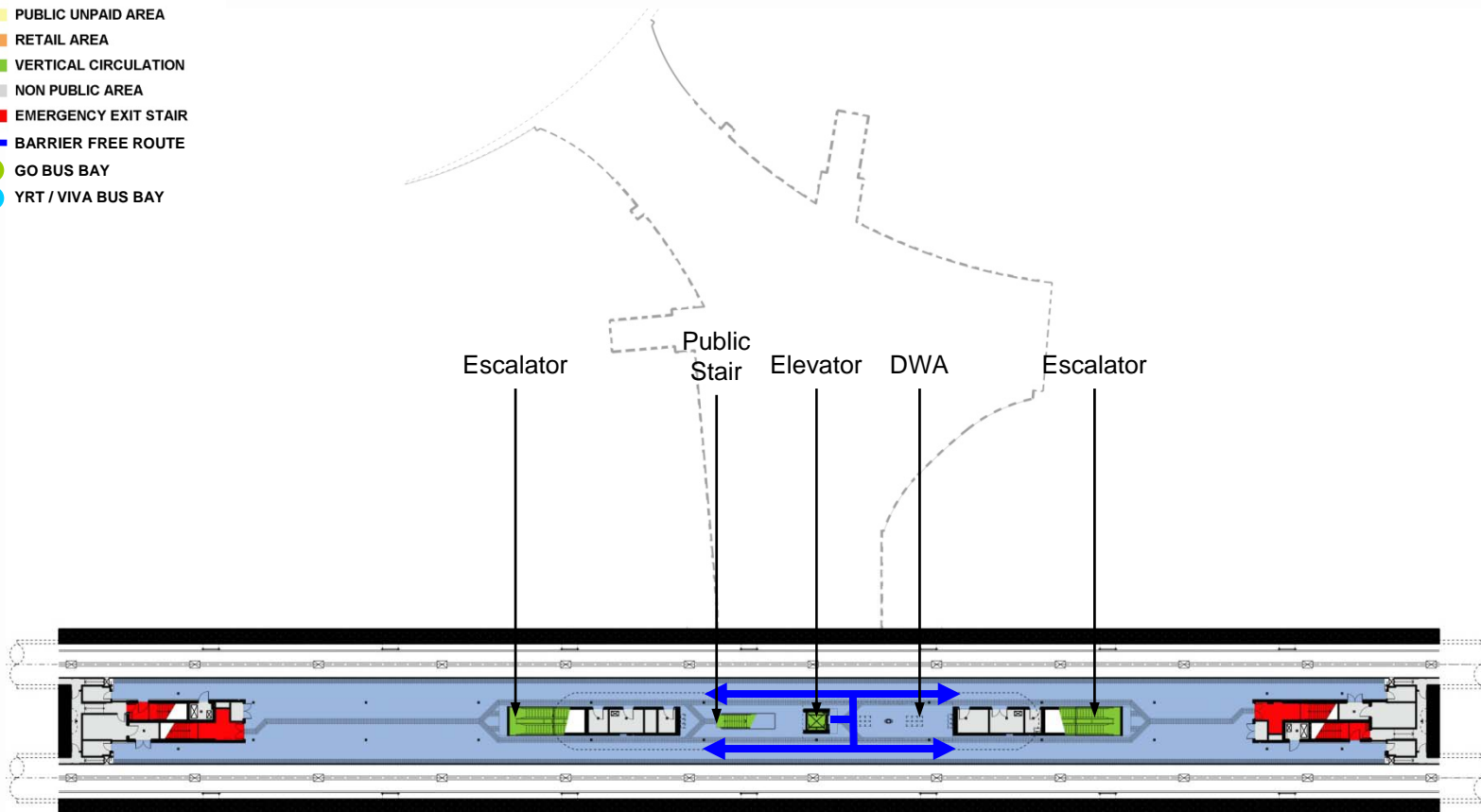
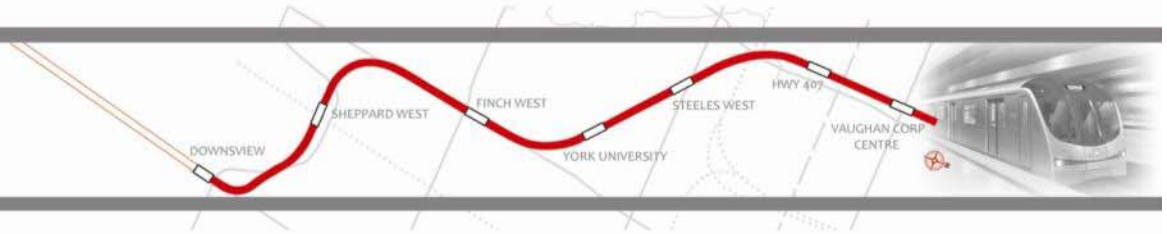


Exhibit 13 – Platform Level



Toronto-York Spadina  
Subway Extension



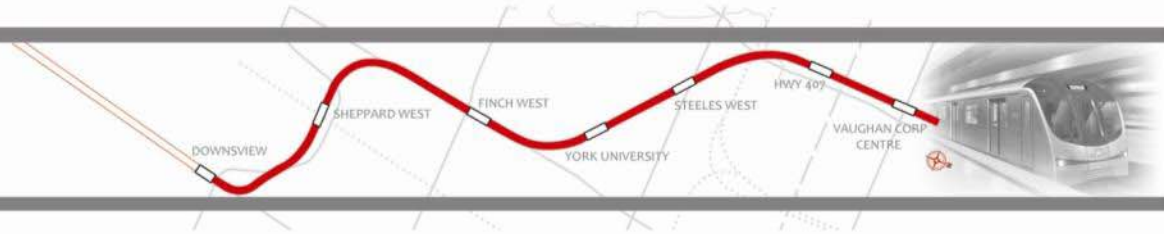
## Highway 407 Station



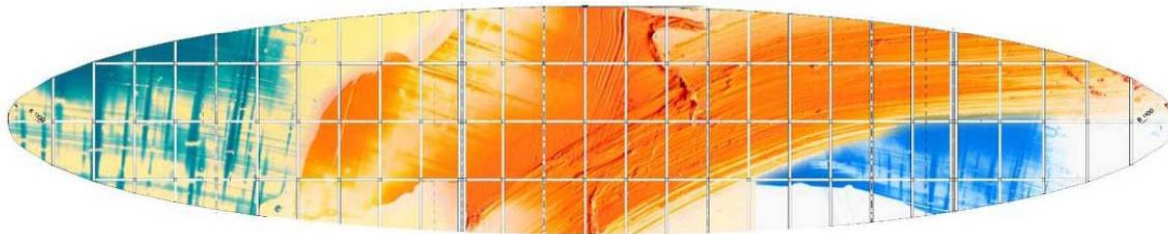
Exhibit 14 – Interior View – Platform



Toronto-York Spadina  
Subway Extension



## Highway 407 Station



David Pearl has been working with the Highway 407 Station team to provide public art at the station.

The art is integrated into the glazing at two locations: the subway box skylight and the bus terminal glazing. The locations have been chosen in order to anchor the connection between the terminal elements while providing a focal point for internal and external users of the station, visible from internally, the parking lot and Jane Street.

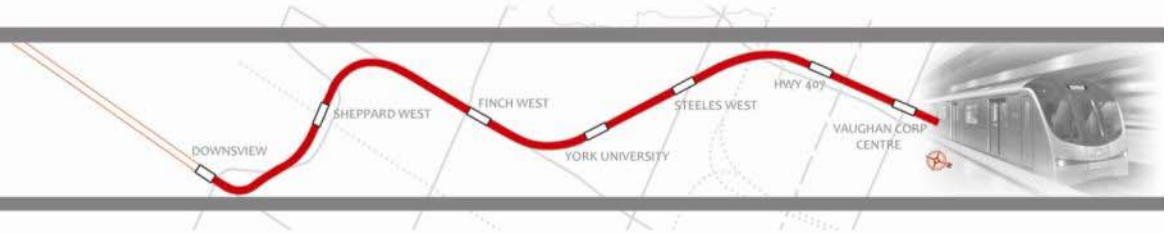
***“The moving projections of colour will animate the entire subway station, but as you see the glazing plane, the surface has to be dynamic to the eye as well. The brush stroke/palette knife texture of the colour application is an essential character of the work. It would be different if the light and colour was spilling in from somewhere above not seen, but here the colour needs a graphic language.”***

***David Pearl***

## Exhibit 15 – Artwork



Toronto-York Spadina  
Subway Extension



## Highway 407 Station



*"I wanted to find a colour and form that harmonized with the spirit of the building: an extension of it into direct expression. I am reminded of Peter Cook's recent book 'Drawing – the motive force of architecture': that drawing, the hand, lies at the heart of all our creativity. There is a narrative here, one of colour: and the delight of the gesture, but at a scale and simplicity that embrace an entire space in one move. And there is the narrative of the user also, in motion through the building. This is why I would like to make connections between spaces with the work, to participate in how the space is performed"*

David Pearl



## Exhibit 16 – Artwork