407 TRANSITWAY
FROM EAST OF HIGHWAY 400 TO KENNEDY ROAD

GWP 252-96-00

Planning & Preliminary Design

Town of Markham
Development Services Committee

Tuesday, March 9, 2010

407 Transitway Background

- MTO has protected a ROW from Burlington to the Highway 35/115 interchange – 150 km.
- The protection includes runningway, stations, park and ride and transit interface facilities.
- The protected ROW provides for either BRT or LRT operation.
- A technology assessment determined, (due to physical corridor constraints and demand levels from corridor land use) that high capacity (subway) was not compatible and that the likely technology would be BRT with possible conversion to LRT in the future.
- Previous studies identified Hwy 400 to Kennedy as the initial priority section.

Central Section Study Purpose & Scope

Ontario

The purpose of the study is to:

- Design a high-speed cross-regional transit facility to be constructed on a separate right-of-way that parallels Highway 407 ETR. The facility is to include:
  - Accommodation of the appropriate technology while addressing demand and physical fit
  - Transit runningways;
  - Stations including amenities such as Passenger Pick Up/Drop Off (PPUDO), bus transfer bays, park-and-ride areas, passenger information and fare collection systems;
  - An Operations and Maintenance Facility to accommodate an initial bus rapid transit (BRT) fleet with provision for future conversion to light rail transit (LRT) and
- Develop a safe, innovative and cost-effective preliminary design for BRT service to standards permitting conversion to LRT;
- Recommend a phased implementation strategy; and,
- Obtain environmental approval using the new Transit Project Assessment process.

407 Transitway Objectives

Transportation

- Enhance east-west cross-regional mobility >5-10 km
- Offer a faster, safer and more efficient way of moving people
- Maximize utilization of protected 407 Corridor
- Improve integration with regional transportation network
- Ability to increase capacity to meet additional travel demand

Land Use

- Improve accessibility to existing/planned major urban centres/nodes
- Increase support for a more compact urban structure

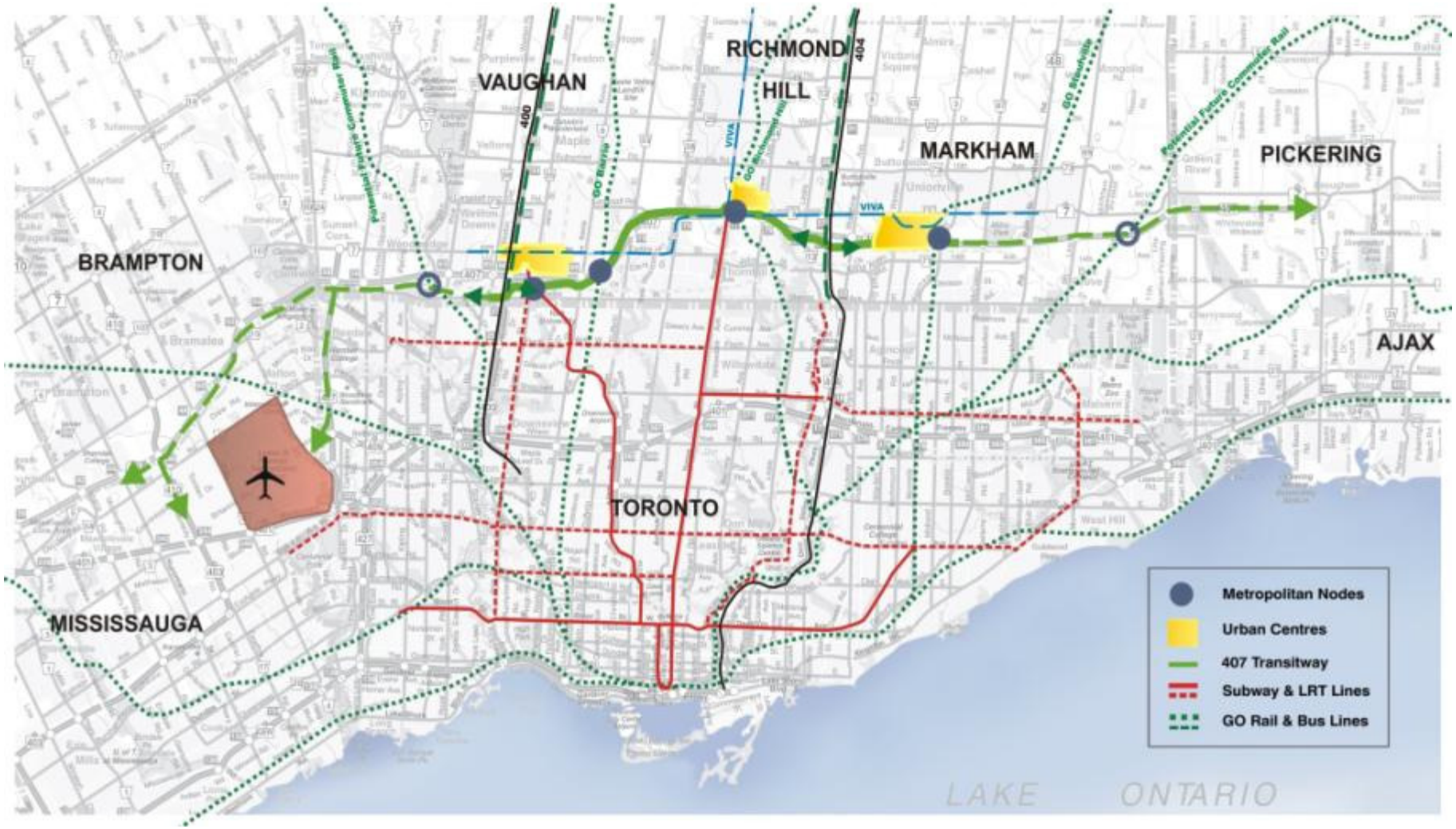
Natural and Social Environments

- Minimize adverse effects on the natural environment
- Minimize adverse effects on the social environment
- Reduce reliance on energy resources, reduce automobile dependence and gas emissions

Costs

- Increase cost-effectiveness of moving people in corridor

Role of 407 Transitway in the GTA



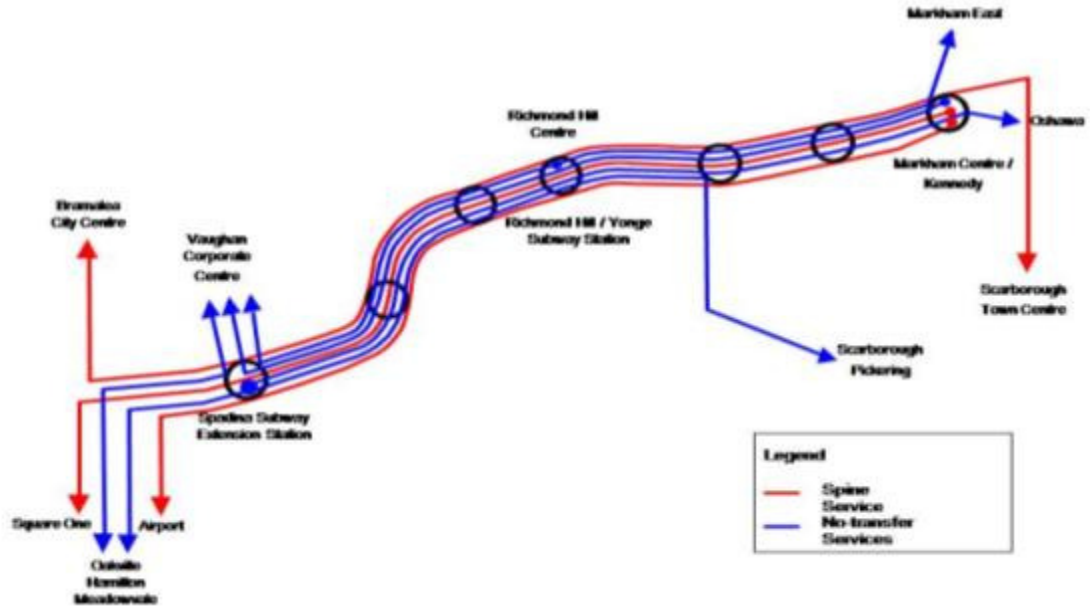
How Station Locations were identified

A functional needs analysis, including modeling, indicated that seven stations within the central segment will achieve the 407 Transitway objectives.

SELECTED STATION NODES	FUNCTION
➢ Jane Street	Connects with TTC Spadina Subway and serves the Vaughan Corporate Centre
➢ GO-Barrie (Concord)	Connects with GO Rail Line
➢ Bathurst Street	Serves Vaughan and Richmond Hill residential growth areas and provides 'park and ride' capacity near the Yonge Street mobility hub
➢ Yonge Street - Richmond Hill / Langstaff Centre	Connects with the TTC Yonge Street Subway and Richmond Hill Rail GO Line at the Richmond Hill Regional Centre
➢ Leslie Street	Serves the Beaver Creek and Commerce Valley Business Parks and connection to City of Toronto LRT
➢ Woodbine Avenue/Rodick Road	Provides 'park and ride' from Markham residential growth area and access to the West Markham Centre and the Woodbine/404 Business Park
➢ Kennedy Road – Markham Centre	Connects with the Stouffville GO Rail Line and serves the Markham Regional Centre

Transitway Ridership Forecasting Method

- **The Greater Golden Horseshoe Travel Demand Model developed in 2008 for MTO was used.**
- **Transitway Service Characteristics Assumed For Ridership Forecasting:**
  - **Bus-based technology will be operated initially to provide routing flexibility;**
  - **Two primary types of service will be offered:**
    1. A base spine service – Services that operate exclusively on the Transitway, including some express services
    2. One-seat ride (No-transfer) services – Direct services between major nodes or residential areas and other major employment nodes or intermodal stations. Routes comprised of portions both on and off of the Transitway and include both express and all-stop service along the Transitway (i.e., interlining)



- **The Transitway infrastructure design will allow buses to achieve a speed of 100 km/hr between stations and an average speed of 65 km/hour including station stop time;**

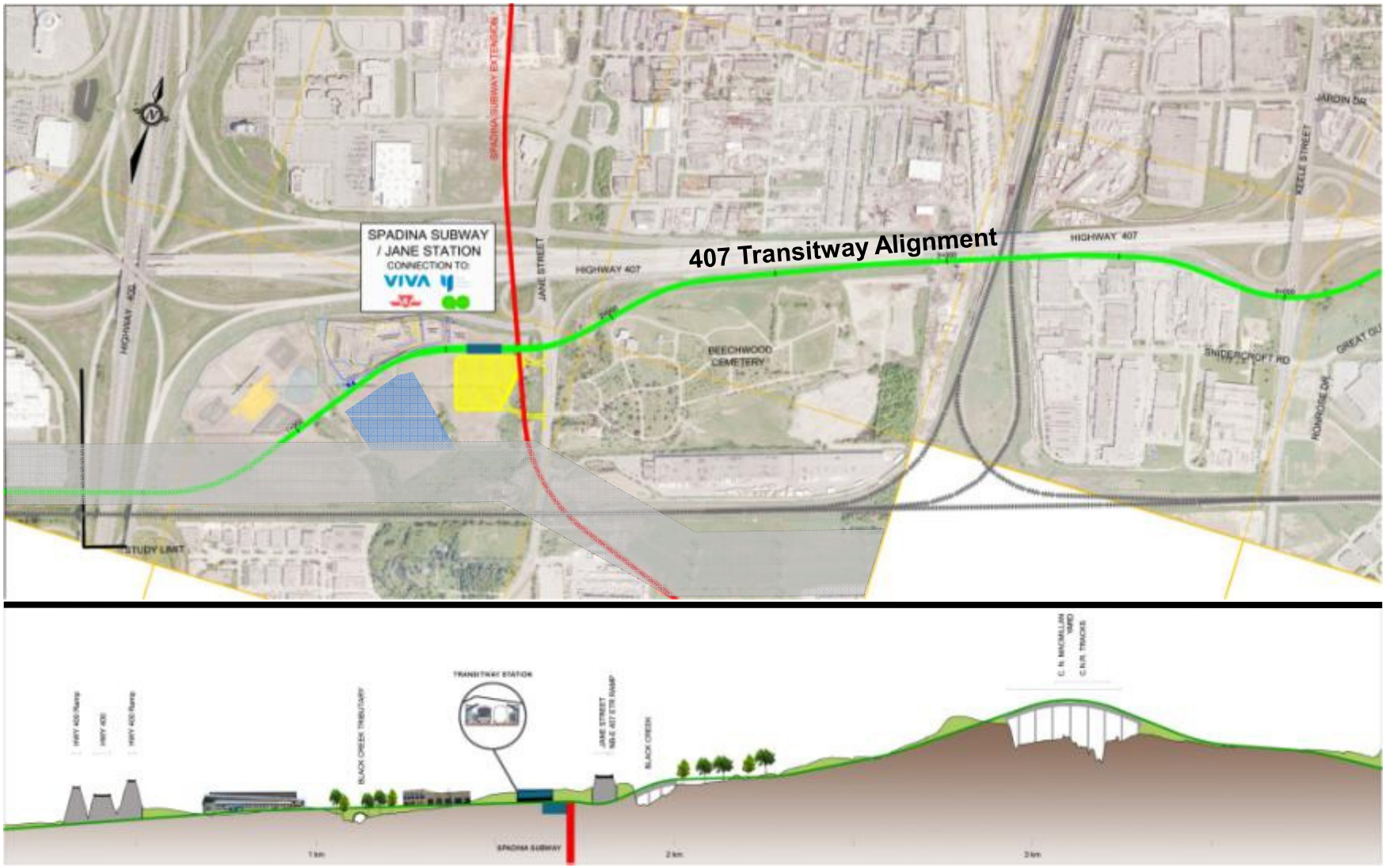
Transitway Ridership Forecasting Results (7 stations)

• **2031 Weekday Trips** A.M. peak hour	**70,000-80,000** **13,800 boardings**
• **2031 Peak hour ridership at peak load point** (immediately east of Yonge Street) in peak direction(WB)	**5,400**
• **Riders from 407 Transitway transferring to:**	
➢ **Yonge Subway in AM peak period** i.e., 30% of all subway boardings at Yonge/RHC station	**4,600 (over 80% of 407TW arrivals)**
➢ **GO Richmond Hill Line**	**200 (approx. 20% of GO boardings at RHC)**
• **Riders from 407 Transitway transferring to:**	
➢ **Spadina Subway in AM peak period** i.e., 50% of all subway boardings at Jane/407 station	**3,300 (over 90% of 407TW arrivals)**

- **AM Peak-hour, Peak Point, Peak Direction Passenger Volumes by Segment:**
  - Markham Centre (Kennedy Road) to Yonge Street WB: **4,500-5,400**
  - Jane Street (Spadina Subway) to Yonge Street WB: **2,200-2,500**
  - West of Jane Street (Spadina Subway) **1,400-2,200**
  - East of Kennedy Road (Markham Centre) **1,300-3,900**
- **Proportion of riders accessing Transitway by:**
  - Other transit: **81%** - Walk-in: **7%**
  - Park-and-ride : **12%**

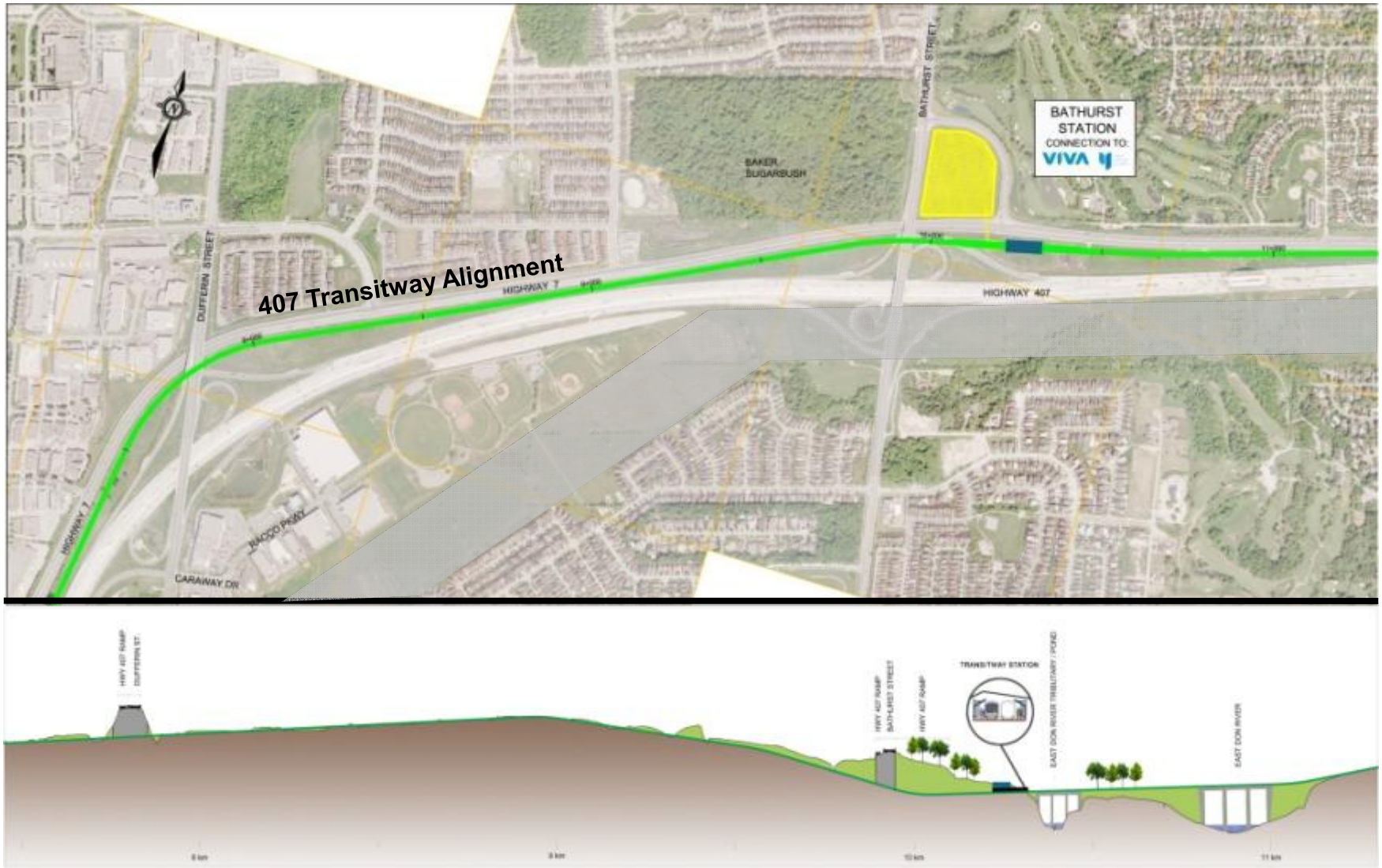
2031 AM Peak hour passenger volumes by segment

Preferred 407 Alignment & Station Location (1 of 7)



Preferred 407 Alignment & Station Location (2 of 7)

Preferred 407 Alignment & Station Location (3 of 7)



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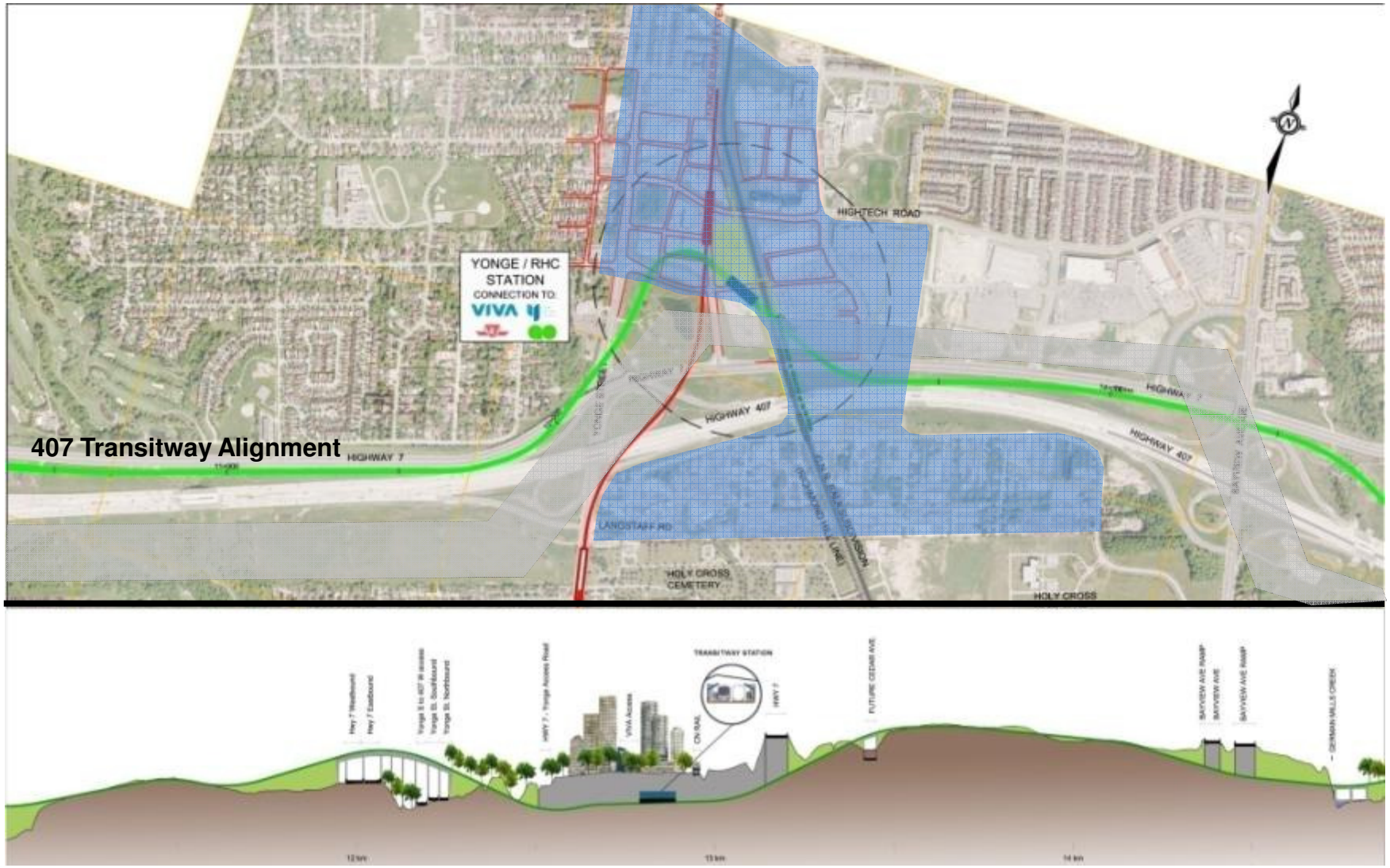
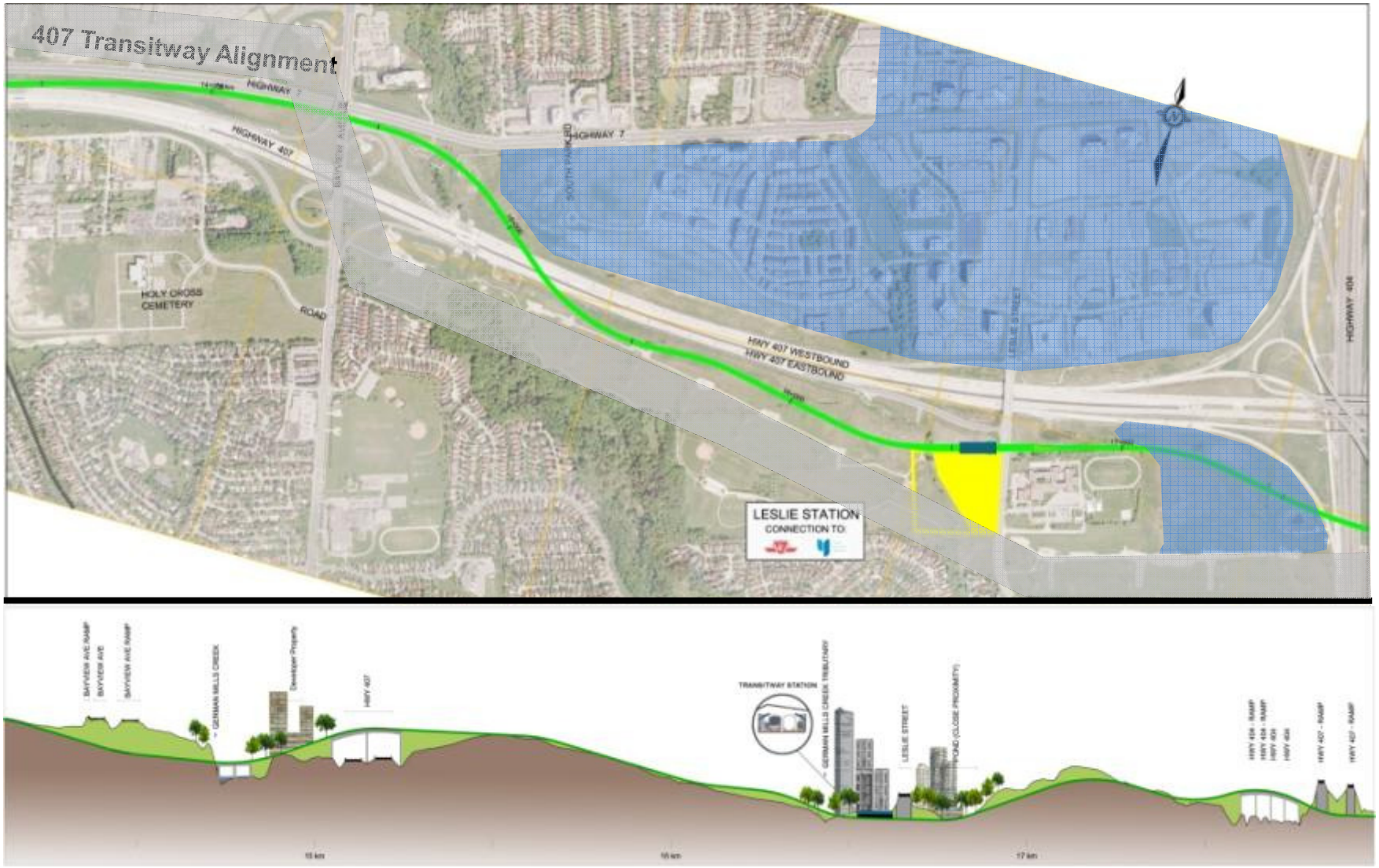
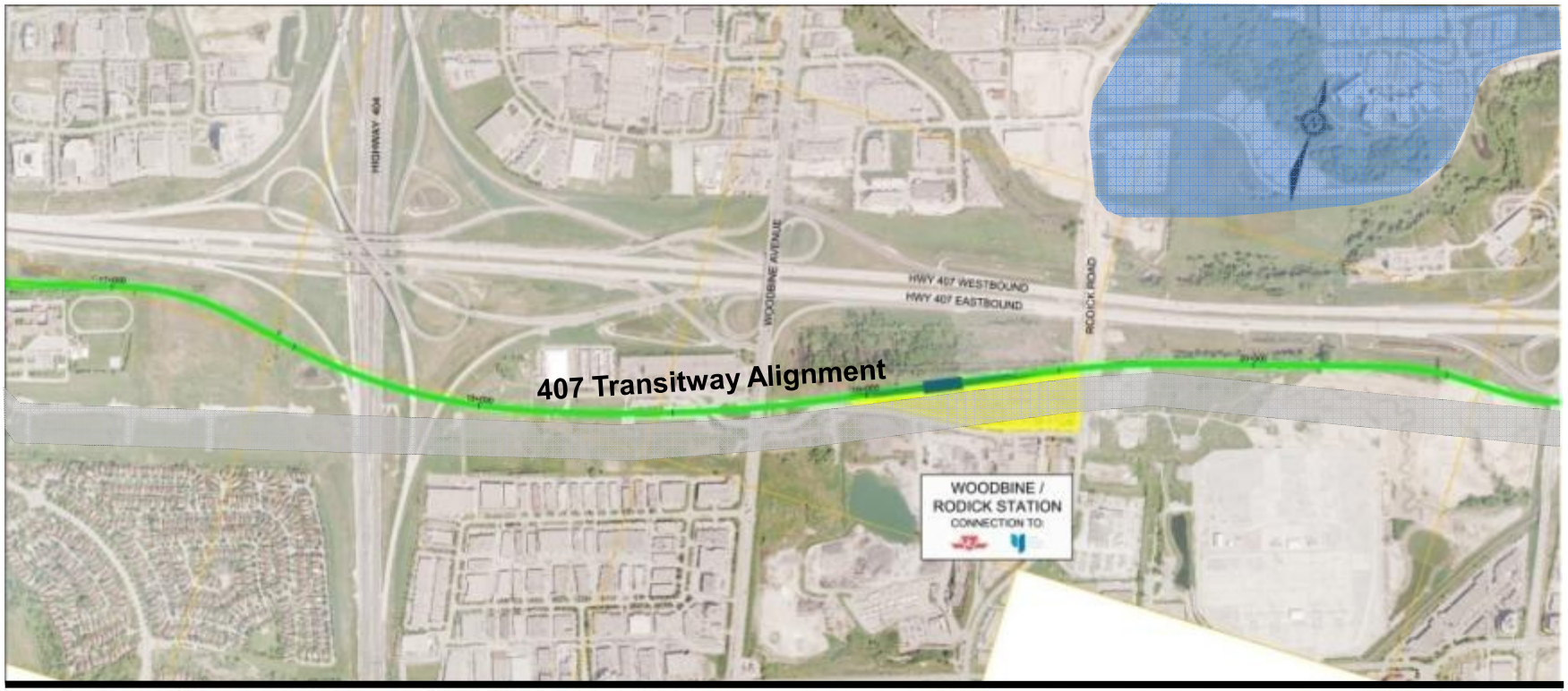
Preferred 407 Alignment & Station Location (4 of 7)

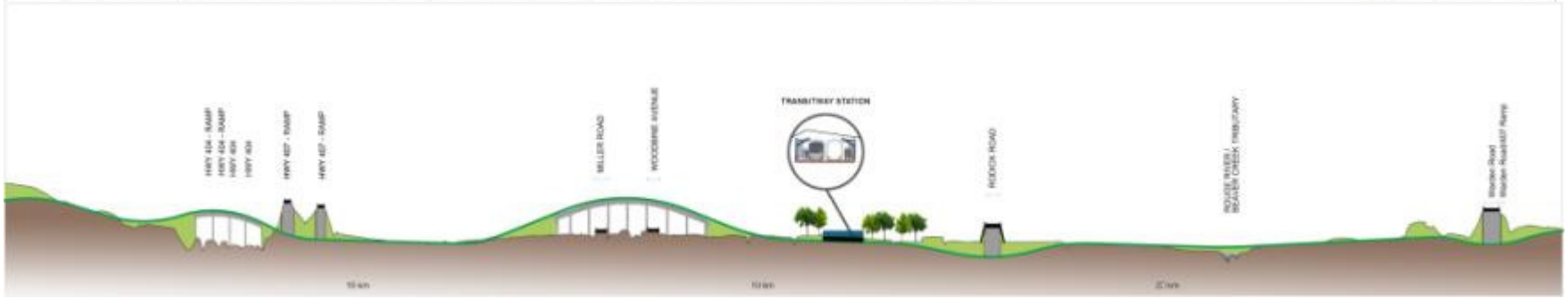


Preferred 407 Alignment & Station Location (5 of 7)

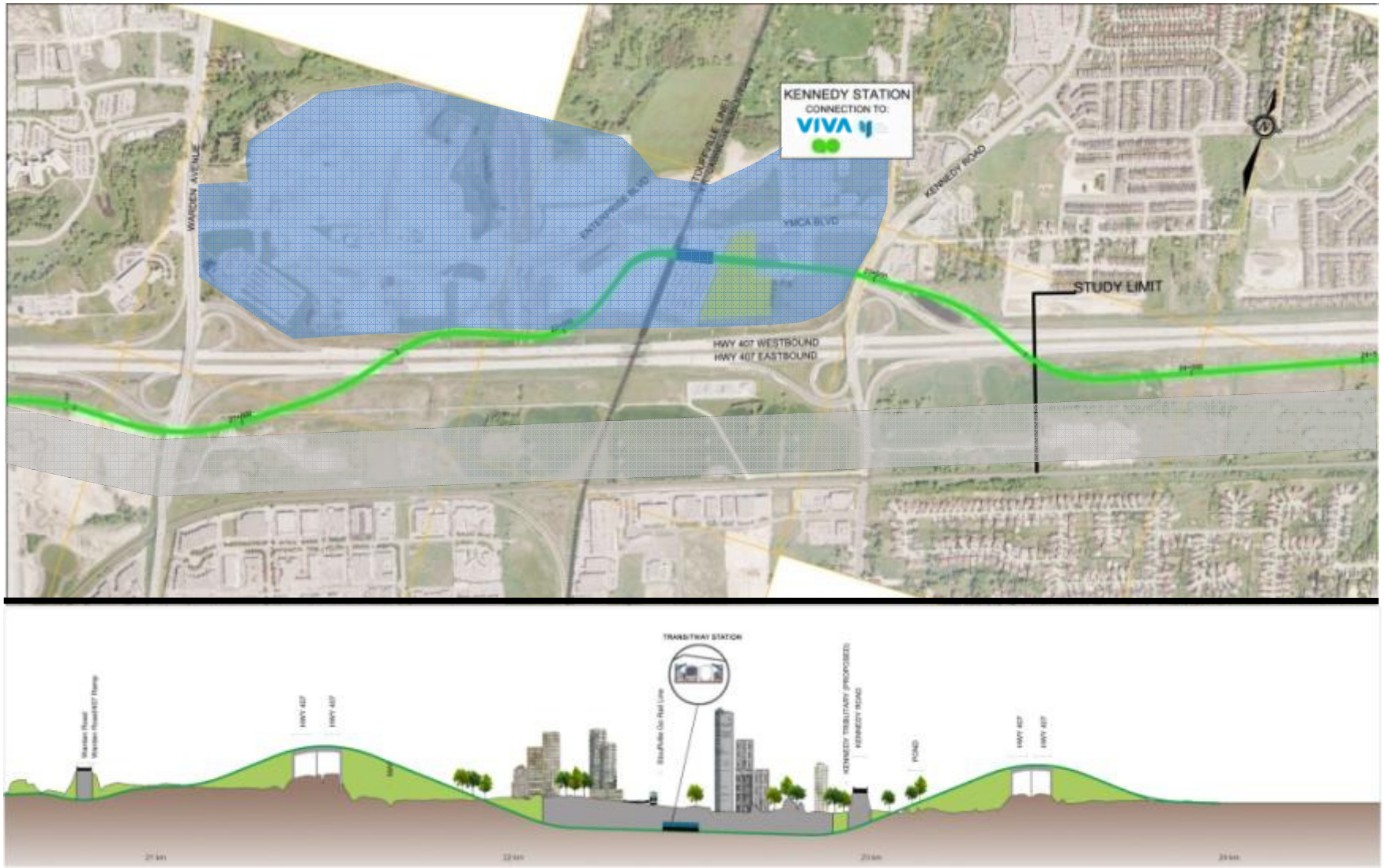


Preferred 407 Alignment & Station Location (6 of 7)

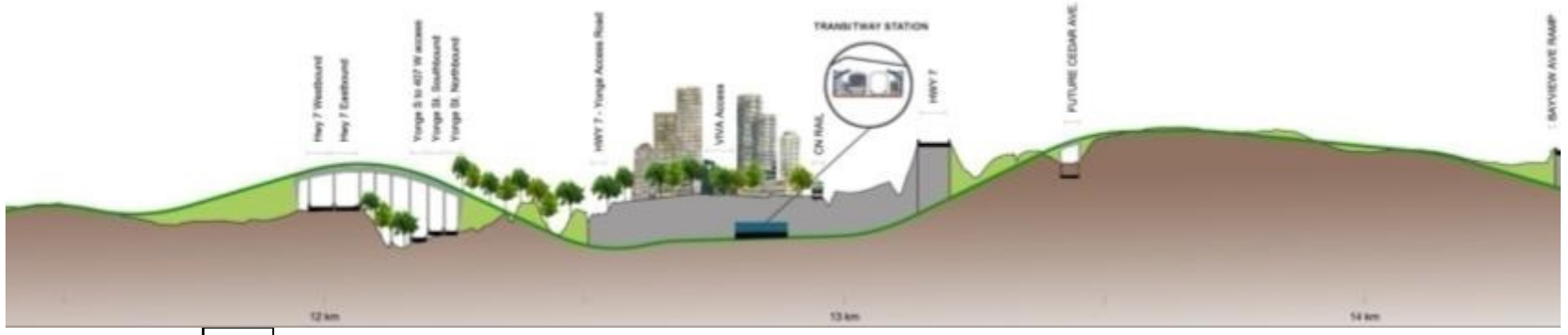




Preferred 407 Alignment & Station Location (7 of 7)



Richmond Hill Centre Station and Mobility Hub



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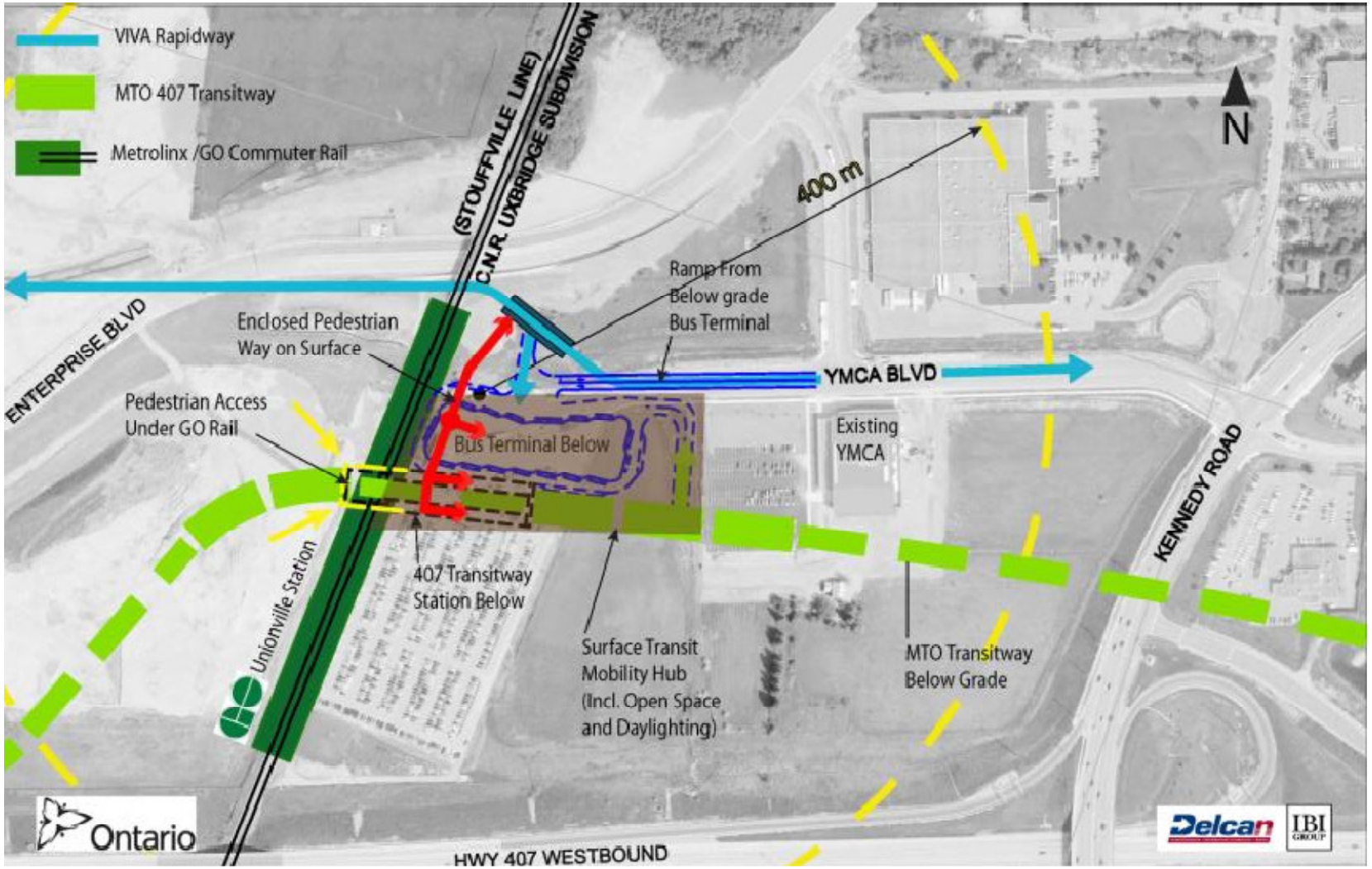
Markham Centre Station and Mobility Hub



Planning & Preliminary Design

Next Steps

Preliminary Design Phase:	Timeline
Develop Preliminary Design	Spring 2010
2nd PIC (Notice of Commencement of EA)	June 2010
Environmental Project Report	Summer 2010
Environmental Approval	End of 2010

Implementation	Timeline
Current RTP Plan (Earliest Operation)	2023