

Yonge North Subway Extension

# Markham Development Services Committee

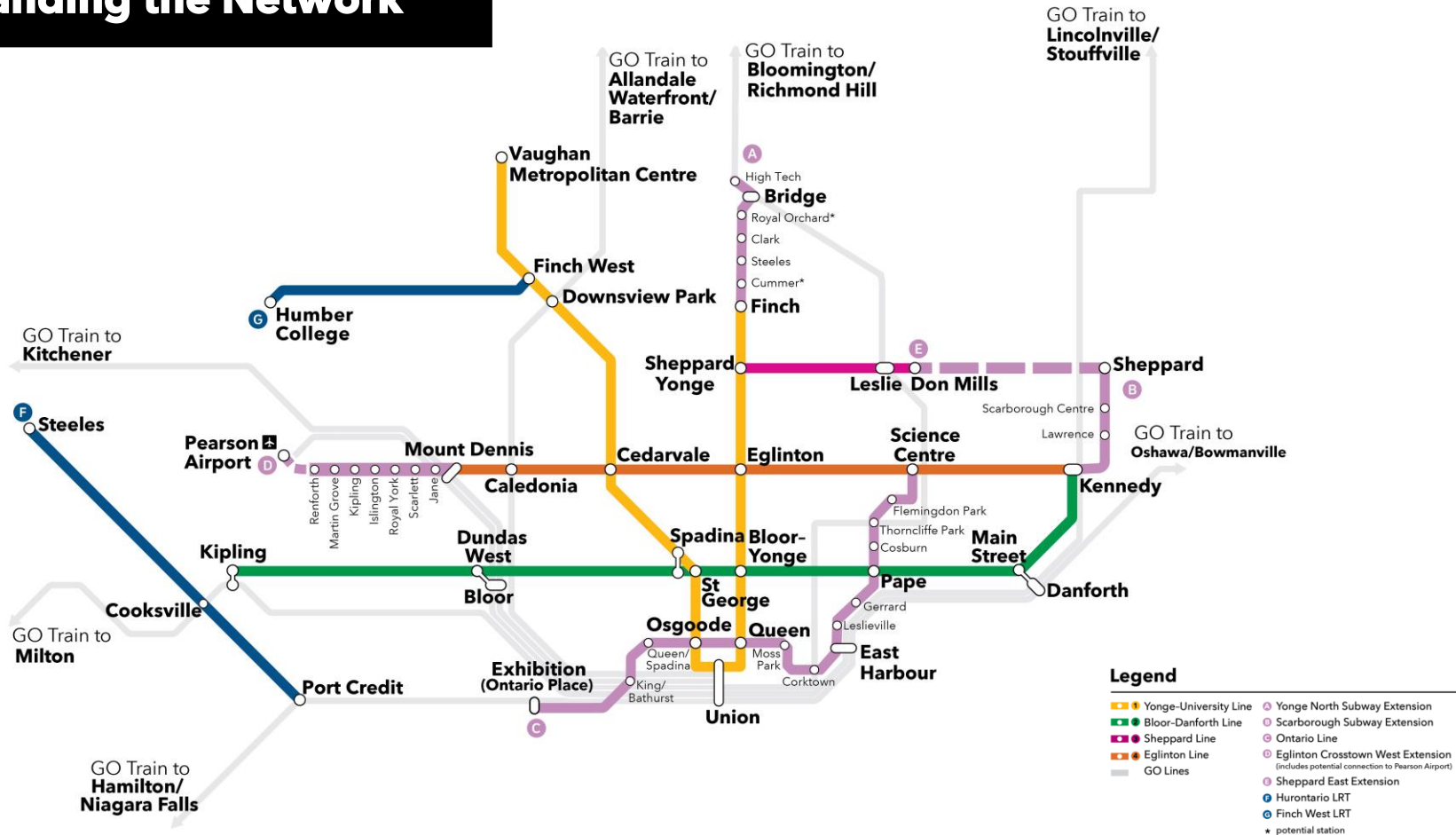


January 18, 2022

 **METROLINX**



# Expanding the Network



# Subway Program Progress

## Eglinton Crosstown West Extension

**7 stops, 9.2 km**

### Recent milestones

- Excavation of tunnel launch site and arrival of TBMs

### Upcoming milestones

- Identifying teams to build the tunnel and elevated section
- Tunnelling to start this spring

## Ontario Line

**15 stops, 15.6 km**

### Recent milestones

- Last of five early works EA reports finalized

### Upcoming milestones

- Early works to begin in shared rail corridor
- Execution for two major contracts; RFQ for last major contract to be issued

## Scarborough Subway Extension

**3 stops, 7.8 km**

### Recent milestones

- Excavation of tunnel launch site and arrival of TBMs

### Upcoming milestones

- Procurement for stations, rail and systems contract will wrap this year
- Tunnelling to start later this year

**Scarborough Subway Extension Tunnel Launch Site**



# Yonge North Subway Extension

## By the Numbers



**~8 km route**



**4\* new stations**



**94,100 daily riders**



**Up to 22 minutes saved on a trip from York Region to downtown Toronto**



**4,800 tonnes in yearly greenhouse gas emission reductions**

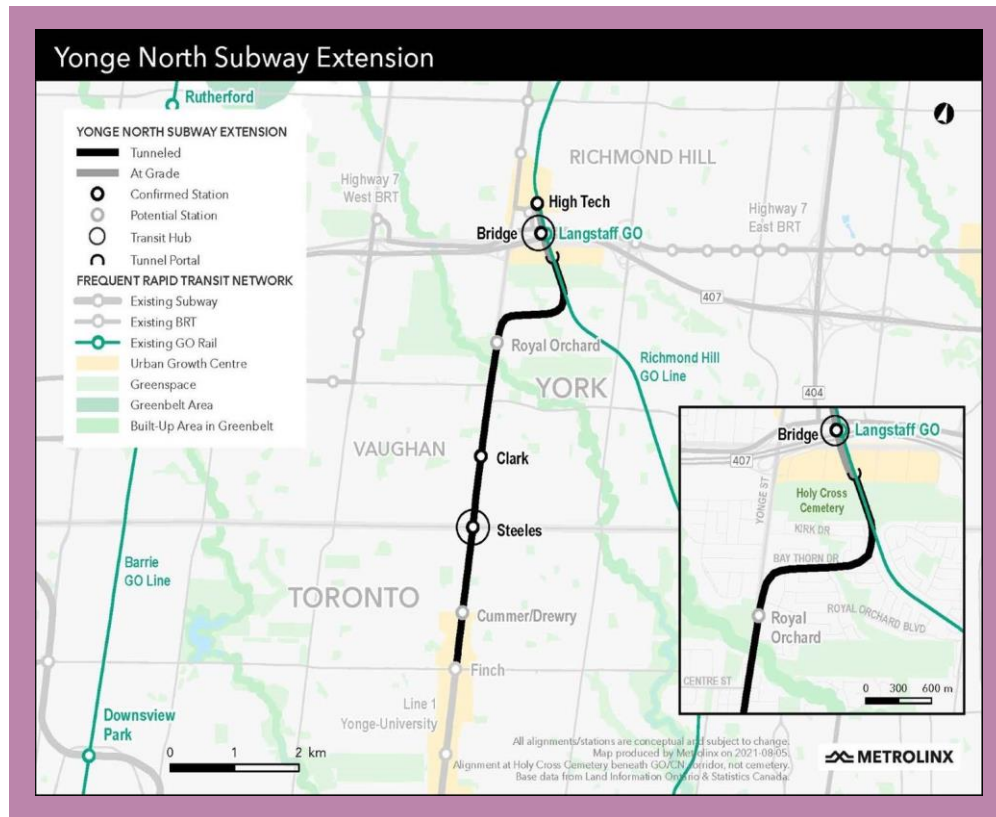


**26,000 more people with in 10-minute walk to transit**



**7,700 fewer km traveled by cars during morning rush hour**

- We're continuing to explore opportunities with our project partners that could support additional stations.



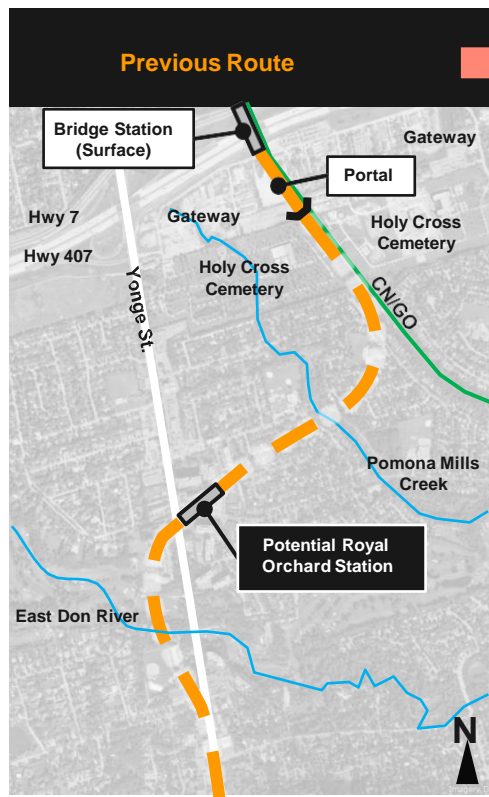
# The Adjusted Route

We've adjusted the route of the Yonge North Subway Extension through the Royal Orchard community to travel deeper and under fewer single-family homes.

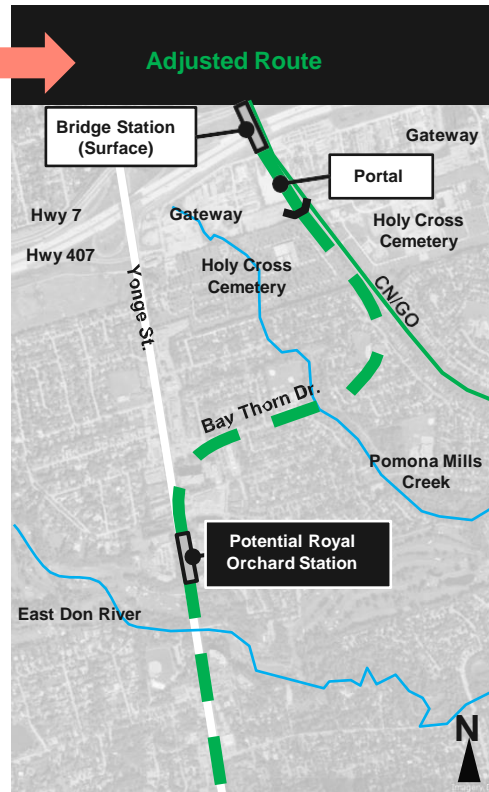
- The route will travel under Bay Thorn Drive instead of directly under single-family homes, wherever possible.
- In the shallowest section of tunnels that will run below single-family homes and a local school, our current designs have the bottoms of the tunnels at a minimum depth of 21 metres (19.5 metres to where the train wheels interact with the tracks).



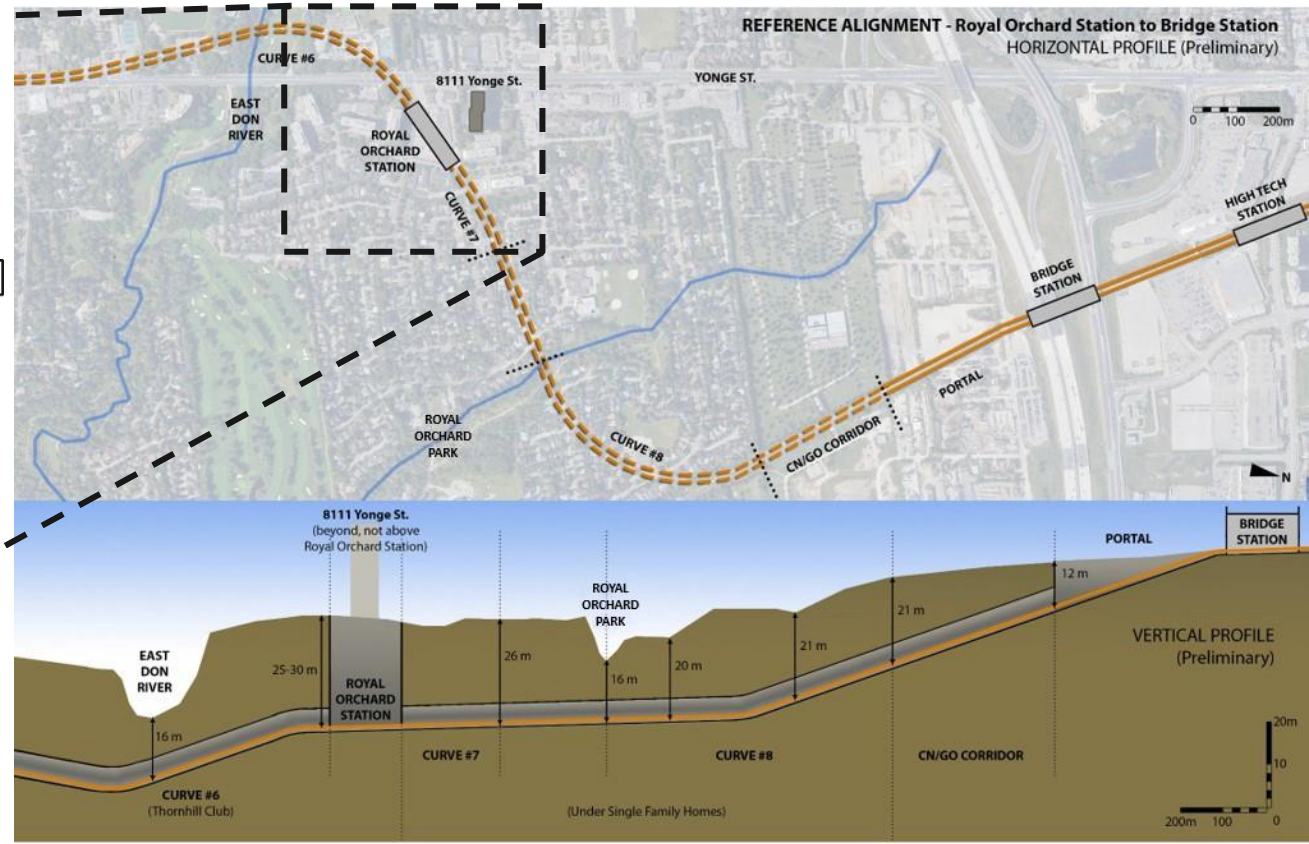
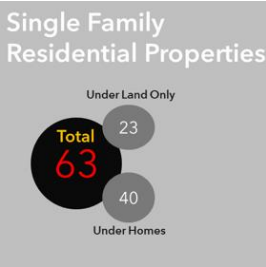
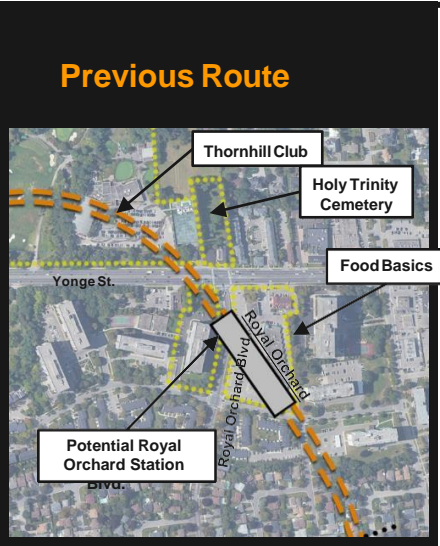
# Route Update - Overview



- Why did we shift from the previous route to the adjusted route?
- Reduce number of single-family residential properties tunnelled under
  - Placed tunnels even deeper below the community
  - Maintained project benefits within approved budget

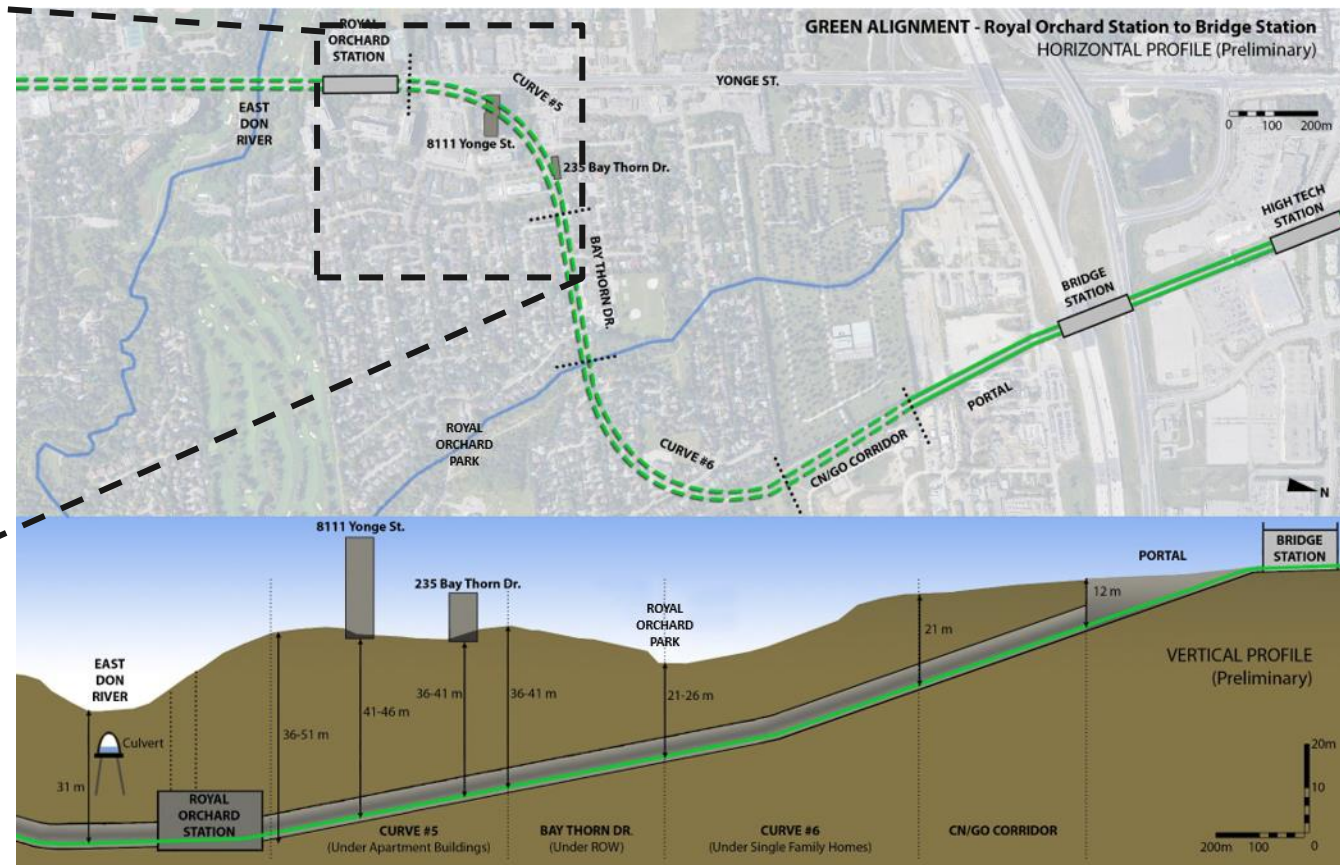
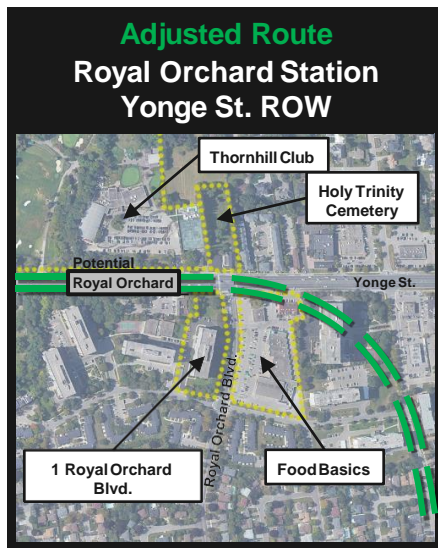


# Previous Route



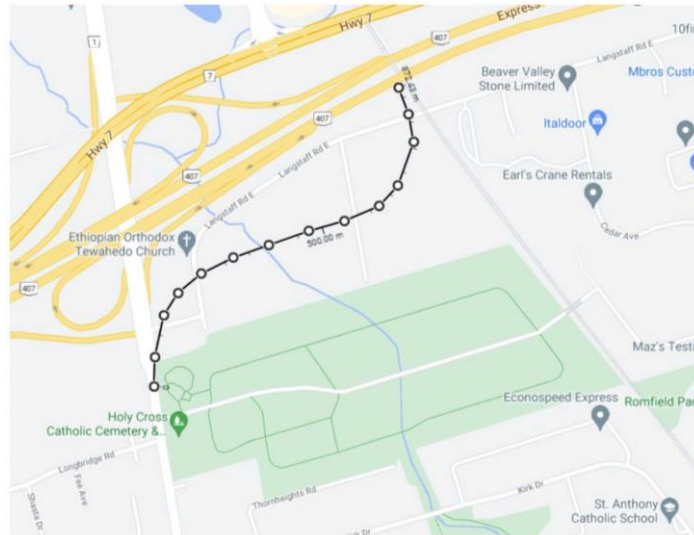
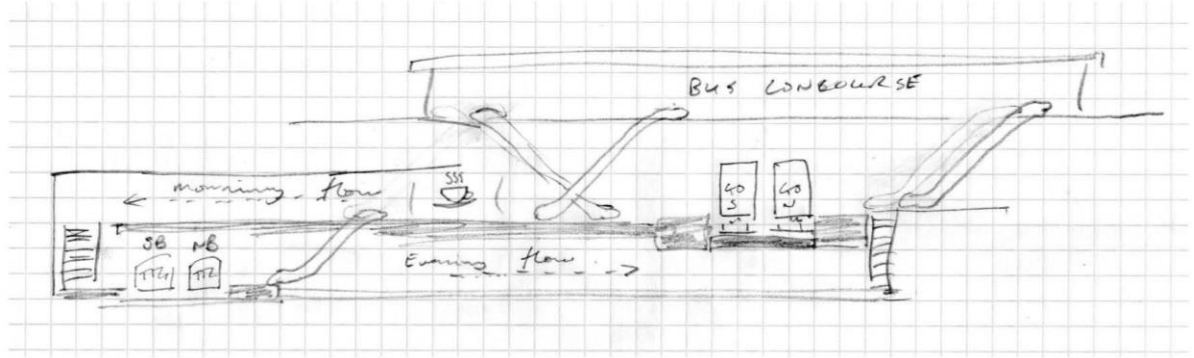
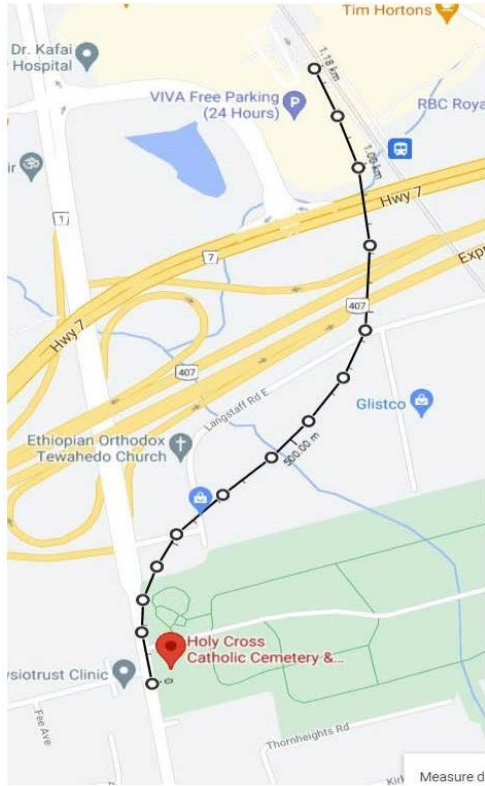


# Adjusted Route



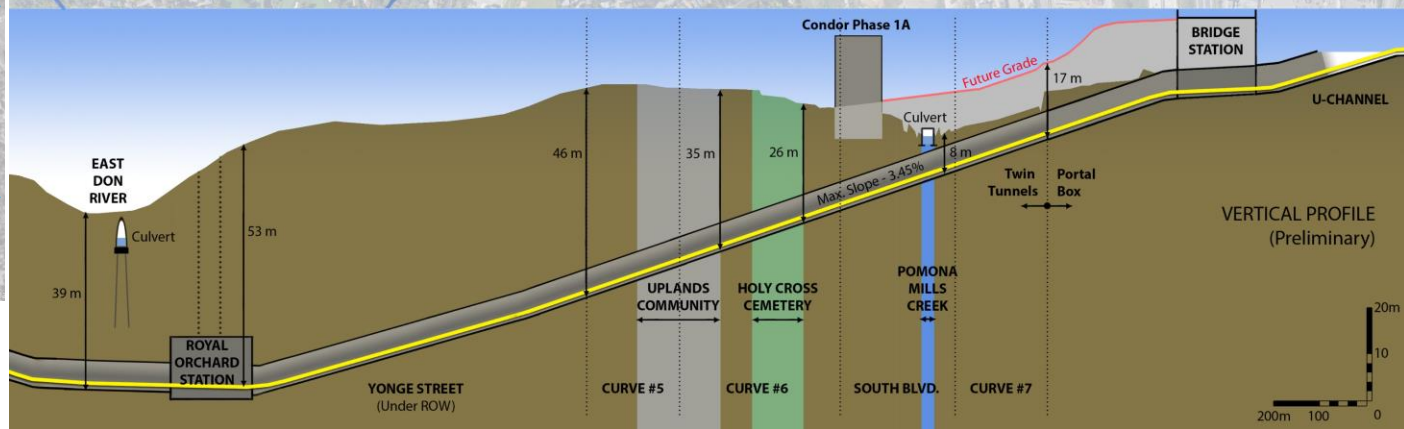
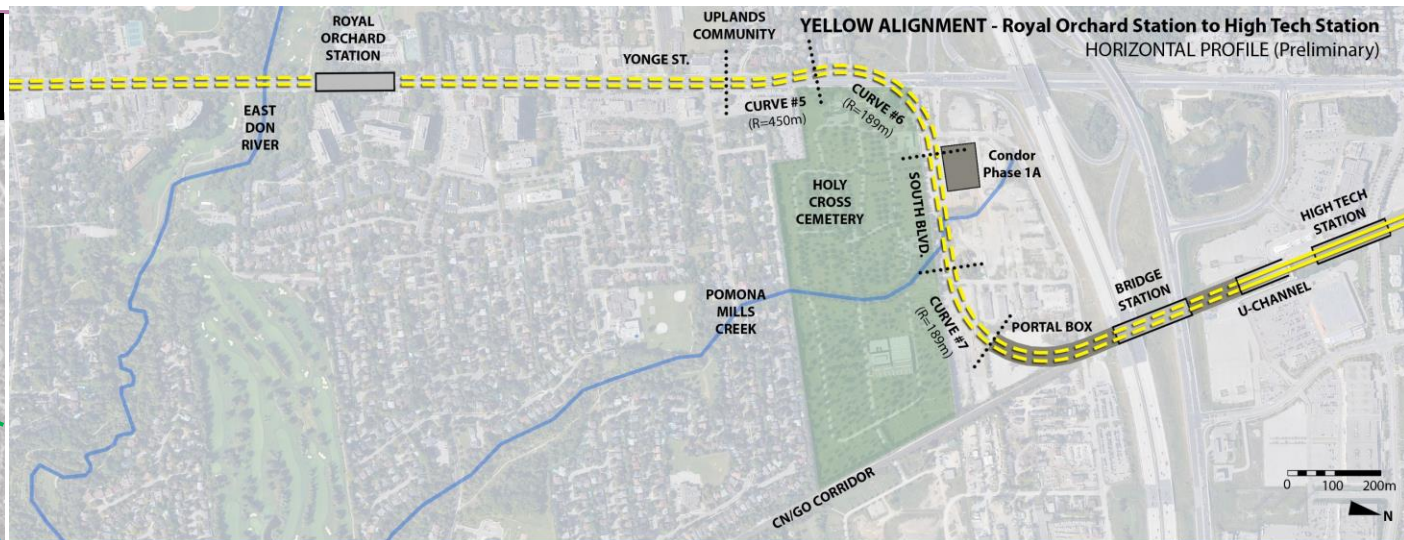
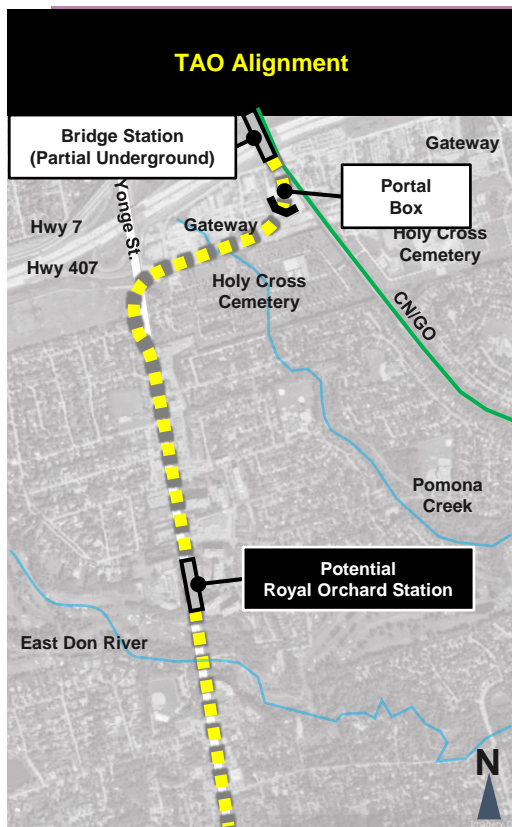


# Transport Action Ontario Alignment Proposal



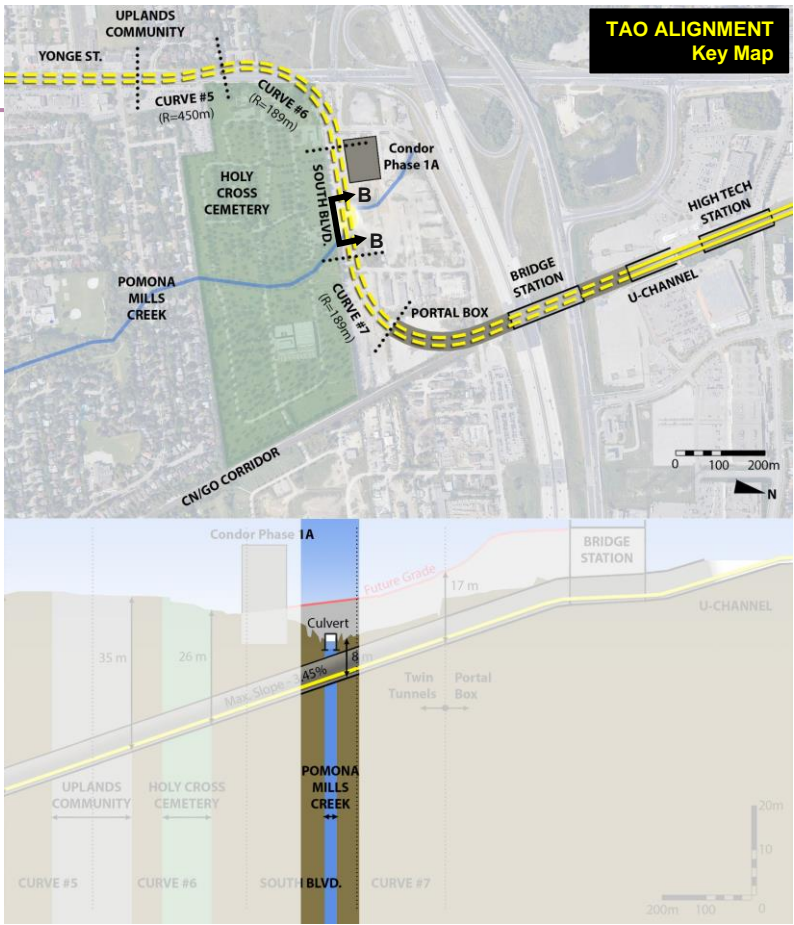
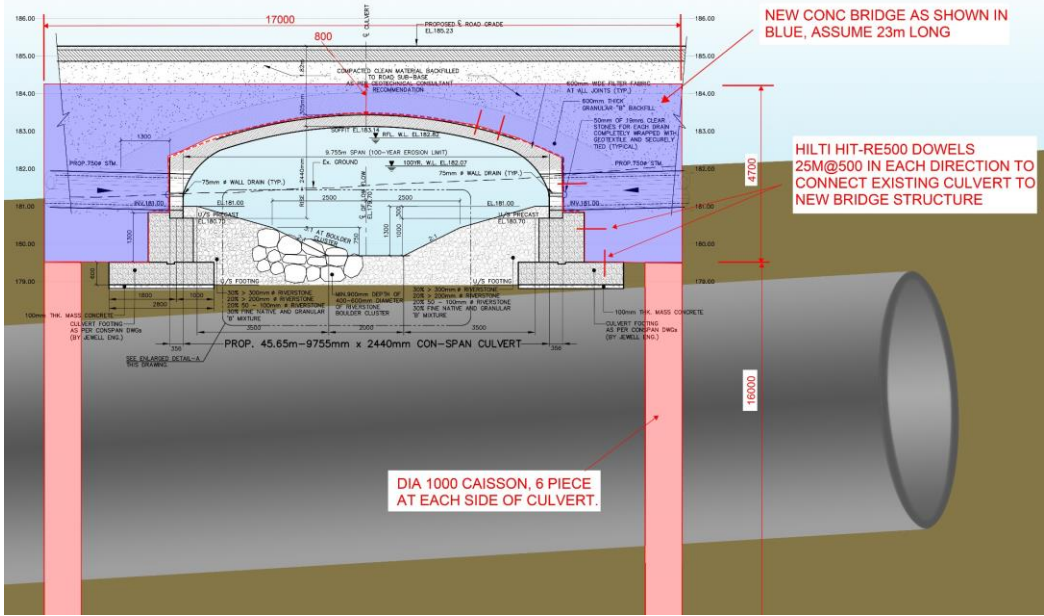
Images submitted by  
Transport Action Ontario

# Metrolinx Review of TAO Proposal



# TAO Proposal - Pomona Creek

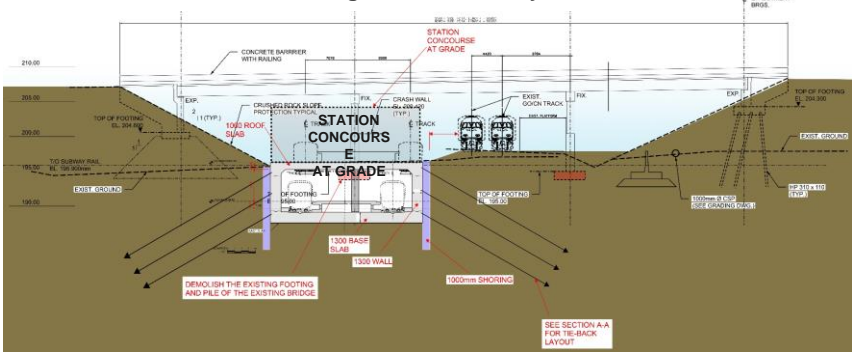
Section BB – Twin Tunnels under Pomona Creek Culvert



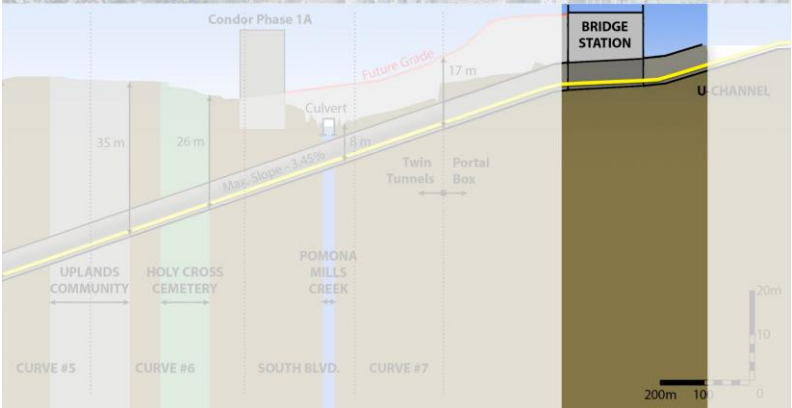
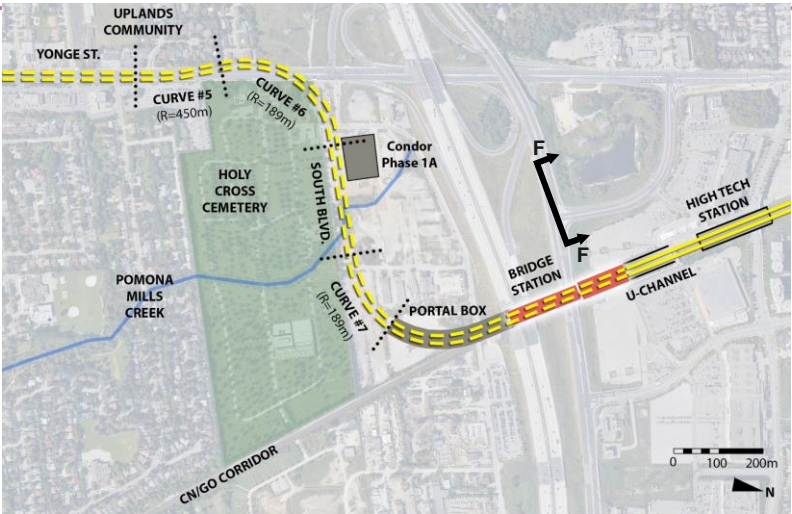
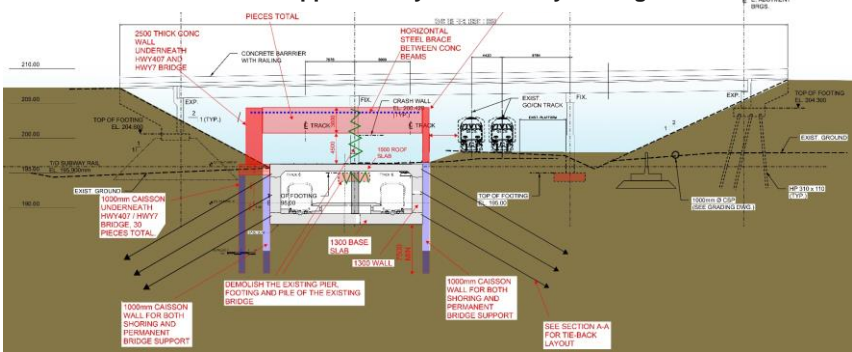


# TAO Proposal - Bridge Station

Section FF1 – Below Grade Bridge Station Subway Platform



Section FF2 – Structural Support – Hwy 407 and Hwy 7 Bridges



# Transport Action Ontario Proposal – Summary of Findings

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## Significant cost increases

- Minimum incremental total project cost of \$230million over and above traffic impacts and other project considerations
- Limits important benefits (e.g. fourth station and potential for additional stations)
- Reduces opportunity to create highly liveable/connected communities

## Complex and costly construction

- Partially underground Bridge Station would require significant modifications to Highways 407 and 7 bridge foundations.
- Pomona Creek impacts
- Specialized tunnel boring machines and precast tunnel liners
- Relocation/protection of major utilities

## Technical constraints from tighter turns, steeper inclines and slower train speeds

- Trains would need to slow down to safely negotiate tighter curves: Reduced travel time savings
- Higher operating costs due to more wear and tear on trains and track through tight curves
- Customer experience impacts - increased noise and vibration from trains traveling on tight turns with steeper inclines

# Environmental Assessment Timeline

- 2009** : York Region, York Region Rapid Transit Corporation, the City of Toronto and the Toronto Transit Commission completed an Environmental Project Report (EPR) to identify potential effects and mitigation measures for a 6.8-kilometre subway extension from the existing Finch Station to Richmond Hill Centre.
- 2014**: An Addendum to the 2009 EPR was undertaken in 2014 to assess design changes that included a train storage facility (TSF) required for subway operations.
- 2022**: Metrolinx EPR Addendum Report assessing changes since the completion of the 2009 and 2014 studies





# Proposed Changes<sup>1</sup> Assessed in Updated EPR Addendum

- Construction of an at-grade segment of the subway alignment from south of Langstaff Road East, in the City of Markham, to the northern limit of the Train Storage Facility at Moonlight Lane, in the City of Richmond Hill
- Proposed station locations and corresponding bus facilities, including Cummer Station and bus loop (Potential), Steeles Station and bus terminal (Confirmed), Clark Station and bus terminal (Confirmed), Royal Orchard Station (Potential), Bridge Station and bus terminal (Confirmed), and High Tech Station (Confirmed)
- Additional features such as traction power substations and emergency exit buildings along the extension
- Required modifications at Finch Station
- Changes in the locations of the launch and extraction shafts, as well as the addition of the proposed tunnel portal structure
- Location and design changes of the proposed at-grade train storage facility



# EPR Addendum Findings Summary

Environmental Component	Findings Summary
Air Quality	When the subway is in operation, air quality in the study area is expected to improve as a result of reduced traffic and reduced greenhouse gas emissions. During construction, air quality will be continuously monitored and managed using proven methods such as frequent watering of construction zones to decrease dust generation, following anti-idling procedures and controlling the amount of simultaneously operating equipment on-site.
Traffic	Currently personal vehicles are the main means of transportation within the YNSE study area. The project is expected to increase demand toward transit and active transportation (walking and cycling). Construction-related traffic impacts will be temporary and managed through traffic control plans developed in advance. No long-term impacts to traffic are anticipated.
Socio-Economic & Land Use Characteristics	The Extension would effectively connect two Urban Growth Centres that have been identified for transit, and transit-supportive development. Plans for permanent project structures will consider location, building materials, architectural design, and surrounding landscape treatments to reduce visual effects. Temporary, construction-related impacts will be managed through proven solutions such as temporary lighting, clear wayfinding signage and screened enclosures along construction site boundaries where necessary.

# EPR Addendum Findings Summary

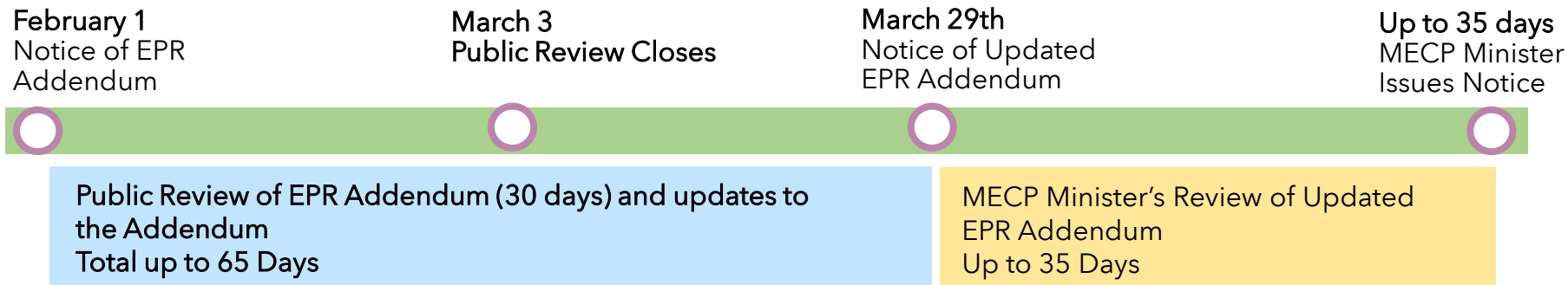
Environmental Component	Findings Summary
Soil & Groundwater	No long-term operational impacts were identified. Temporary impacts related to tunnel construction and excavations at the launch, extraction shafts, below grade stations and emergency exit buildings will be thoroughly assessed prior to works starting. Plans will be developed to guide the handling, management, and disposal of groundwater encountered during construction and in accordance with applicable regulatory requirements. Excavation support systems will be employed as required, along with appropriate ground treatment to reduce the risk of ground loss during construction.
Noise & Vibration	Using proven and readily available mitigation measures (e.g., floating slab track, ballast mats, resilient fasteners), ground-borne vibration and ground-borne noise levels are predicted to meet or be lower than required standards. During construction, noise and vibration levels will be continuously monitored and carefully managed through proven mitigation measures (e.g., equipment in good working order, temporary noise barriers, and acoustic enclosures where necessary)
Natural Environment	Urban area, natural environment limited to parks and waterways. During operation there is potential to disturb vegetation and/or wildlife for maintenance activities, so nest searches and wildlife surveys will be completed prior to work as required. Construction will be planned to avoid or minimize potential impacts and meet all regulatory requirements, including, the Fisheries Act and Species at Risk requirements. Tree and vegetation removal compensation will be provided in accordance with the Metrolinx Vegetation Guideline (2020).



# EPR Addendum Findings Summary

Environmental Component	Findings Summary
Cultural Heritage	A total of 86 heritage potential and confirmed heritage properties, including built heritage resources and cultural heritage landscapes, were identified within the Study Area. There are no expected impacts related to subway operations. During construction, where indirect vibration is expected in proximity, mitigation based on final construction methodology and a detailed study of local conditions will be implemented, along with monitoring. Where demolition or alteration is expected, further assessments will be completed to provide conservation guidance and property specific solutions.
Archaeology	Though there are very few areas of archaeological potential in the study area, further archaeological assessment(s) will be completed where required in advance of any ground disturbance. Indigenous Field Liaisons will be invited to participate in this work and archaeological assessment report(s) will be circulated to First Nations and Indigenous Communities for review. If archaeological materials/artifacts are encountered (or suspected) during construction activities, all work will stop. The site will be protected from impact and additional assessment will be undertaken.

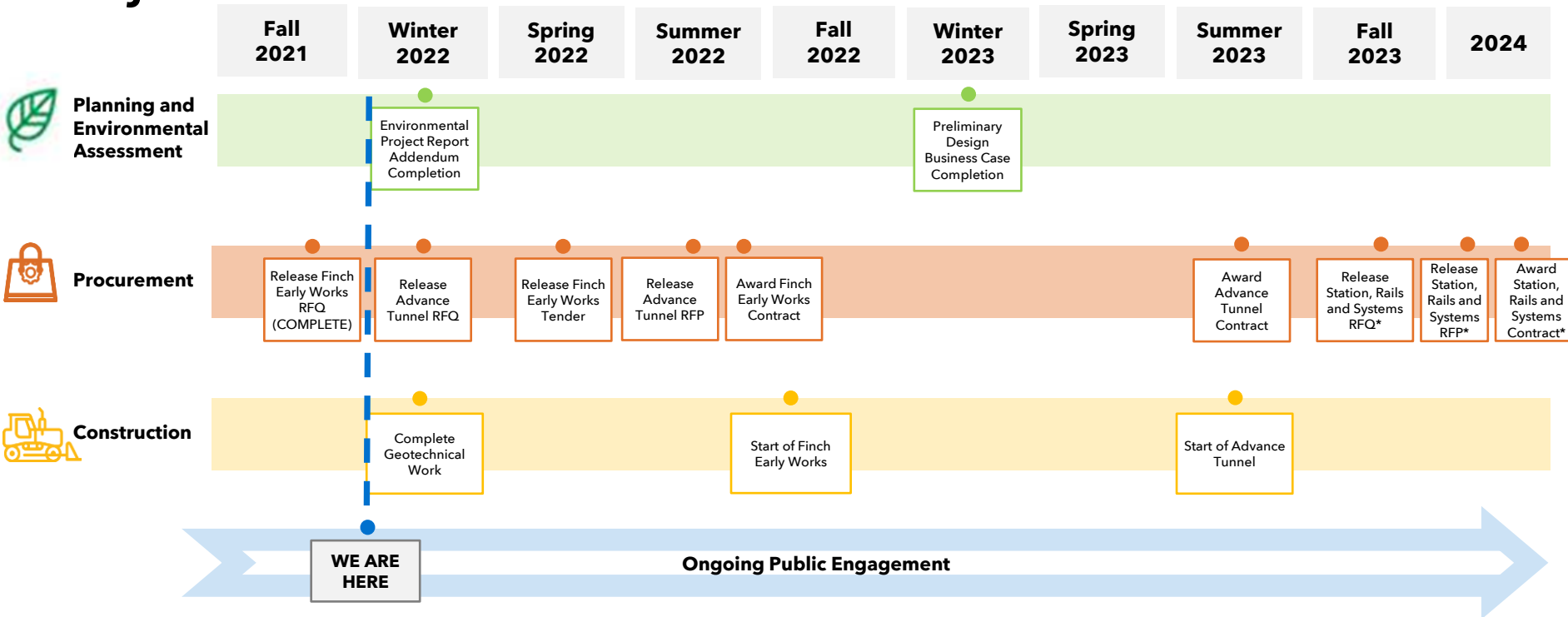
# EPR Addendum Review



- Public review on YNSE Metrolinx Engage
- Public can also email questions to [YongeSubwayExt@metrolinx.com](mailto:YongeSubwayExt@metrolinx.com)

*\*All dates are subject to change*

# Project Timeline



# Public Engagement and Stakeholder Outreach

- Project postcard distributed to **30,000 homes** along alignment. Second flyer distribution underway.
- **7 virtual open house meetings: 2633 attendees, 1577 questions** answered on Mx Engage, Zoom Room, and in Teams.
- Previous virtual open house #7 was **January 5, 6:30pm**.
- **1500 notification flyers distributed, 23 stakeholder briefings, 36 elected official briefings, 15 eNews**, biweekly meetings with Communications Working Group (municipal staff), community walks, canvassing.
- Small table meetings, including **Willowdale BIA** and **Yonge Corridor Condominium Association, Royal Orchard Community Table**.
- **6 Council presentations** York Region Council and municipal councils.
- Open letter from CEO Phil Verster to the Royal Orchard community, December 15.





## Yonge North Subway Extension

# Community Office

Metrolinx has identified a potential location for a community office near the northern end of the extension. Once open, the Yonge North Subway Extension Community Relations team will be available from the community office, as well as the other usual channels.



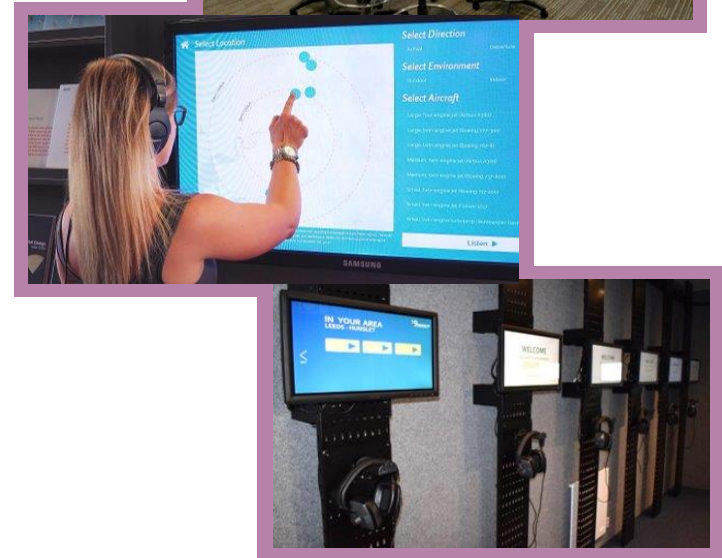
# Noise and Vibration Mitigation Experiential Program

### Local Subway Tours and Visuals

- Infographics and posters
- Portable 'scale model' demonstration of train and track vibration isolation

### Sound Demonstrations

- Installation will offer attendees an opportunity to experience current and projected levels of sound when the subway is in operation
- Baseline for comparison will be current noise levels experienced in the Royal Orchard and Bayview Glen Communities, in various locations within a home
- Audio and visual demonstrations using state-of-the-art technology used internationally to test planned noise and vibration mitigation



# Next Steps – Stakeholder and Community Engagement

- York Region Council special meeting on YNSE February 3
- Vaughan Region Council
- Richmond Hill Council
- Continued community consultation and opportunities for input, including:
  - EPR Addendum public review (virtual open house, February 10)
  - Station design, Train Storage Facility considerations, Emergency Exit Building and Traction Power Substation design elements

# Share your feedback!

Thank you for taking the time to learn more about the project. Your input is vital to the work we do and will help us move the Yonge North Subway Extension forward in the best way possible.

Please visit **Metrolinx Engage** to submit your comment or question on our *Ask A Question* forum.

You can reach us anytime:

- [YongeSubwayExt@metrolinx.com](mailto:YongeSubwayExt@metrolinx.com)
- 416-202-7000
- Visit our website:  
**Metrolinx.com/YongeSubwayExt**
- Participate online:  
**MetrolinxEngage.com/YongeSubwayExt**

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To Hear  
From You**

