



## Electronic Special Development Services Committee Meeting Agenda

Meeting No. 9  
April 26, 2021, 6:30 PM  
Live streamed

**Note:** Members of Development Services Committee will be participating in the meeting remotely.

Due to COVID-19, our facilities are closed to the public.  
Access is not permitted to the Markham Civic Centre and Council Chamber.

Members of the public may submit written deputations by email to  
[clerkspublic@markham.ca](mailto:clerkspublic@markham.ca)

Members of the public who wish to make virtual deputations must register by completing an online [\*\*\*Request to Speak Form\*\*\*](#) or e-mail [clerkspublic@markham.ca](mailto:clerkspublic@markham.ca) providing full name, contact information and item they wish to speak to. Alternatively, you may connect via telephone by contacting the Clerk's office at 905-479-7760 on the day of the meeting.

Development Services Committee meetings are video and audio streamed on the City's website at:

<https://pub-markham.escribemeetings.com/>



# Electronic Special Development Services Committee Agenda

Meeting Number 9

April 26, 2021, 6:30 PM - 8:30 PM

Live streamed

Alternate formats for this document are available upon request.

Development Services meetings are live video and audio streamed on the City's website. Closed captioning during the video stream may be turned on by clicking the **[cc]** icon located at the lower right corner of the video screen.

Please bring this Special Development Services Committee Agenda to the Council meeting on May 4, 2021.

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## Pages

### 1. CALL TO ORDER

### 2. DISCLOSURE OF PECUNIARY INTEREST

### 3. DEPUTATIONS

#### 3.1. DEPUTATION REGARDING THE METROLINX - YONGE NORTH SUBWAY EXTENSION UPDATE (13.0)

Representatives from Royal Orchard Ratepayers Association will provide a presentation to Committee regarding the “Metrolinx – Yonge North Subway Extension.”

### 4. COMMUNICATIONS

### 5. PRESENTATIONS

#### 5.1. METROLINX - YONGE NORTH SUBWAY EXTENSION UPDATE (13.0)

4

Note: On March 22, 2021 General Committee requested an evening Special Development Services Committee meeting to allow for further public consultation.

Darryl Lyons, Manager, Policy, City of Markham, Mary-Frances Turner, President, York Region Rapid Transit Corporation, Phil Verster, CEO, Metrolinx, Stephen Collins, Program Sponsor, Subways and Rajesh Khetarpal, Vice President, Community Engagement 905 will provide presentations on this matter.

**City of Markham, YRRTC and Metrolinx presentations attached.**

1. That the presentations on the Yonge North Subway Extension Update be received.

**6. ADJOURNMENT**

**Information Page**

**Development Services Committee Members: All Members of Council**

**Development and Policy Issues**

Chair: Regional Councillor Jim Jones

Vice-Chair: Councillor Keith Irish

**Transportation and Infrastructure Issues**

Chair: Deputy Mayor Don Hamilton

Vice-Chair: Councillor Reid McAlpine

**Culture and Economic Development Issues**

Chair: Councillor Alan Ho

Vice-Chair: Councillor Khalid Usman

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Alternate formats for this document are available upon request.

**Consent Items:** All matters listed under the consent agenda are considered to be routine and are recommended for approval by the department. They may be enacted on one motion, or any item may be discussed if a member so requests.

**Please Note:** The times listed on this agenda are approximate and may vary; Council may, at its discretion, alter the order of the agenda items.

**Note: As per the Council Procedural By-Law, Section 7.1 (h)  
Development Services Committee will take a 10 minute recess after  
two hours have passed since the last break.**





# Yonge North Subway Extension Update

**Special Development Services Committee Meeting**  
**April 26, 2021**



## Purpose

- Overview of growth planning in Markham
- Overview of Yonge Street Corridor and Langstaff Gateway
  - Planning
  - Development activity
  - Development potential



# Planning for Growth in the GTHA



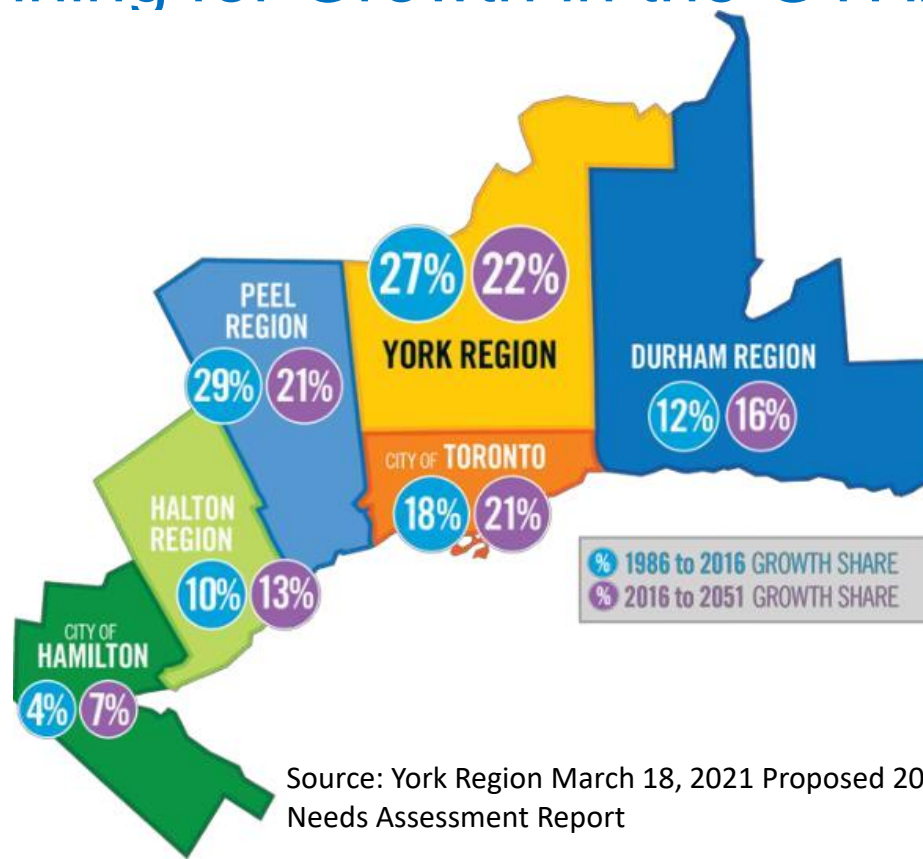
**Distribution of Population and Employment for the Greater Golden Horseshoe**

|                       | 2051<br>Population | % 2051<br>Population | 2051<br>Employment | % 2051<br>Employment |
|-----------------------|--------------------|----------------------|--------------------|----------------------|
| Toronto               | 3,650,000          | 33%                  | 1,980,000          | 37%                  |
| Peel                  | 2,280,000          | 20%                  | 1,070,000          | 20%                  |
| <b>York</b>           | <b>2,020,000</b>   | <b>18%</b>           | <b>990,000</b>     | <b>18%</b>           |
| Durham                | 1,300,000          | 12%                  | 460,000            | 9%                   |
| Halton                | 1,100,000          | 10%                  | 500,000            | 9%                   |
| Hamilton              | 820,000            | 7%                   | 360,000            | 7%                   |
| <b>GTHA<br/>Total</b> | <b>11,170,000</b>  | <b>100%</b>          | <b>5,360,000</b>   | <b>100%</b>          |

Source: Schedule 3, A Place to Grow, Growth Plan for the Greater Golden Horseshoe



## Planning for Growth in the GTHA

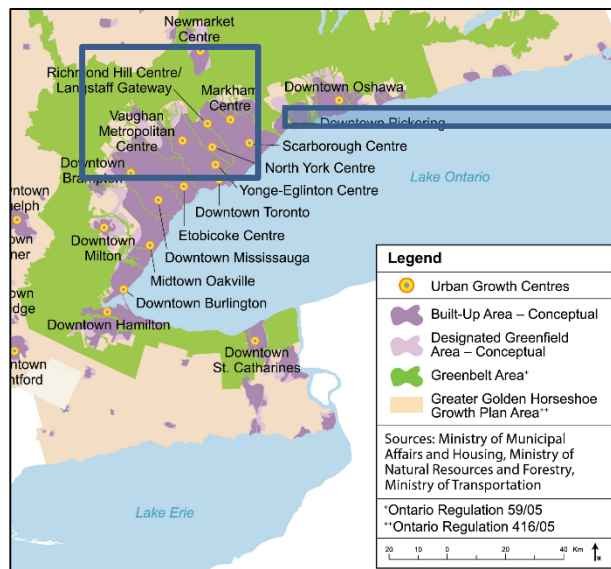


Source: York Region March 18, 2021 Proposed 2051 Forecast and Land Needs Assessment Report



# Focusing Development in Urban Growth Centres

## Urban Growth Centres



Source: Schedule 4, A Place to Grow, Growth Plan for the Greater Golden Horseshoe



## York Region's Proposed Forecasts to 2051

**MUNICIPAL COMPREHENSIVE REVIEW**  
TARGETED WORK PLAN

**2021 REPORTS** (Targeted Quarter)

- REGIONAL OFFICIAL PLAN UPDATE - HOUSING CHALLENGES AND OPPORTUNITIES (Q1)
- THE REGIONAL OFFICIAL PLAN UPDATE POLICY DIRECTIONS REPORT (Q1)
- PROPOSED 2051 FORECAST AND LAND NEEDS ASSESSMENT REPORT (Q1)
- MUNICIPAL COMPREHENSIVE REVIEW UPDATE REPORT (Q2)
- DRAFT REGIONAL OFFICIAL PLAN (Q4)

**CONTINUAL ENGAGEMENT**

Extensive consultation will occur following Council being presented the Draft Official Plan in Q4 2021, and is expected continue into 2022. Engagement with the public, stakeholders, indigenous communities and local municipalities is ongoing during the Municipal Comprehensive Review (MCR) process.

Visit [york.ca/haveyoursay](http://york.ca/haveyoursay) for opportunities to get involved and have your say in the MCR.

UPDATED: APRIL 8, 2021

**York Region**

Source: York Region Municipal Comprehensive Review website

| Municipality             | Population       | % Population | Employment     | % Employment |
|--------------------------|------------------|--------------|----------------|--------------|
| <b>Markham</b>           | <b>619,200</b>   | <b>31%</b>   | <b>309,200</b> | <b>31%</b>   |
| Vaughan                  | 568,700          | 28%          | 352,000        | 36%          |
| Richmond Hill            | 317,000          | 16%          | 122,600        | 12%          |
| Newmarket                | 110,700          | 5%           | 57,600         | 6%           |
| East Gwillimbury         | 105,100          | 5%           | 37,400         | 4%           |
| Whitchurch-Stouffville   | 92,900           | 5%           | 31,900         | 3%           |
| Aurora                   | 84,900           | 4%           | 41,000         | 4%           |
| Georgina                 | 71,900           | 4%           | 21,900         | 2%           |
| King                     | 49,600           | 2%           | 16,400         | 2%           |
| <b>York Region Total</b> | <b>2,020,000</b> | <b>100%</b>  | <b>990,000</b> | <b>100%</b>  |

Source: York Region Council Meeting Report March 18, 2021



## Markham Official Plan, 2014

### Regional Centres:

Markham Centre (MC)  
Langstaff Gateway (LG)

### Regional Corridors/Key Development Areas:

Yonge Steeles Corridor  
Yonge North Corridor  
Commerce Valley/ Galleria  
Woodbine/404  
Markville  
Cornell Centre

### Local Centre:

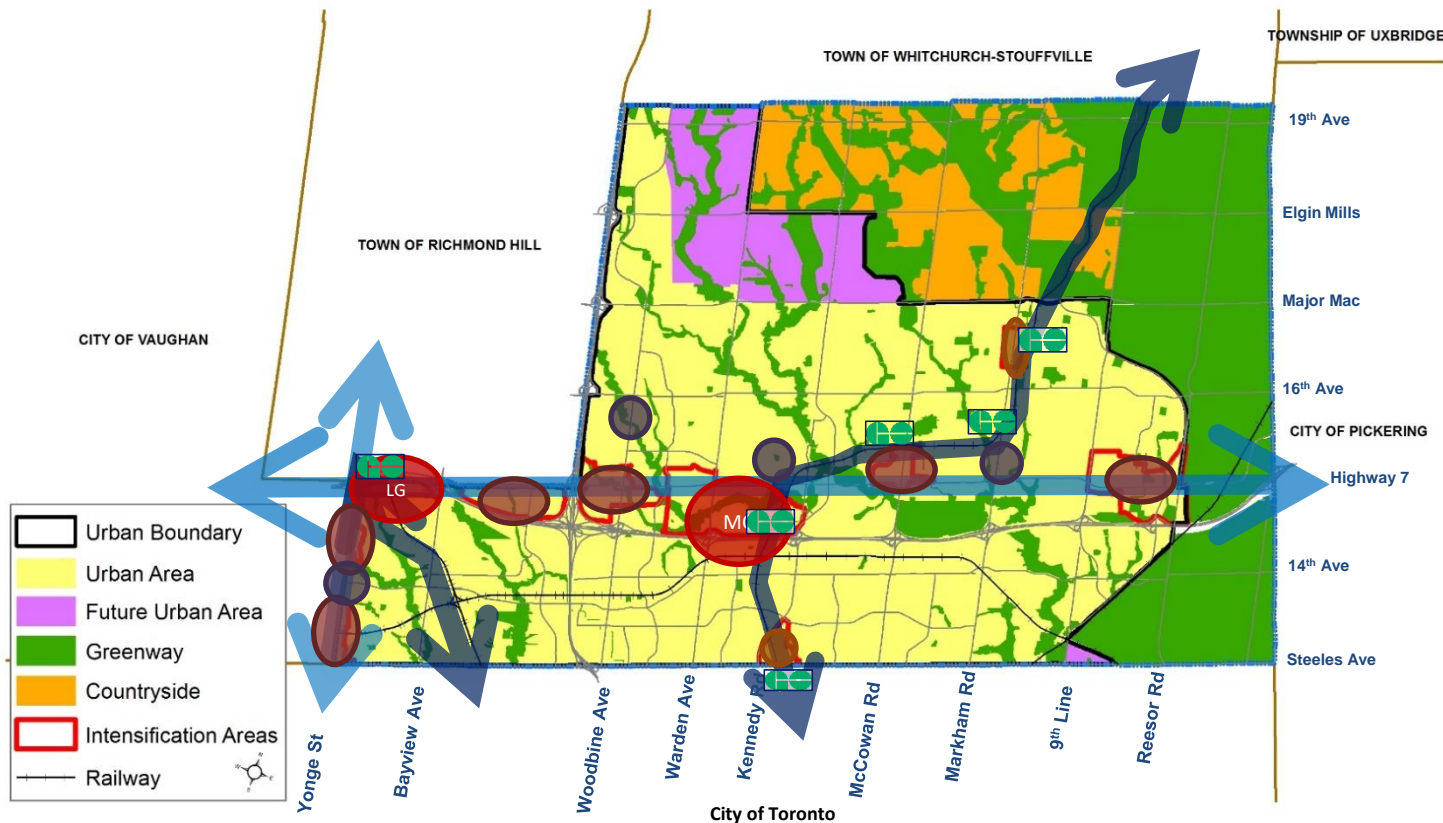
Milliken Centre

### Local Corridor:

Markham Rd/Mount Joy

### Heritage Centres:

Thornhill  
Buttonville  
Unionville  
Markham Village







## Langstaff Gateway







# Current Development Applications



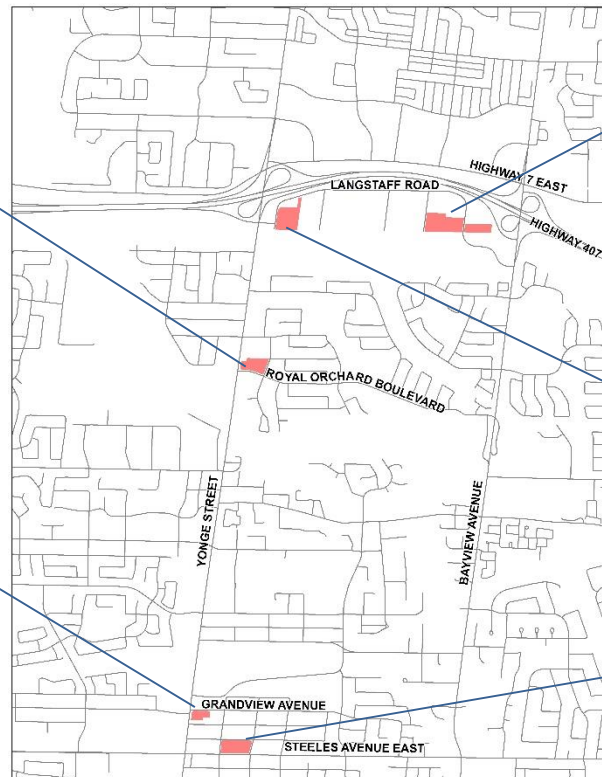
## **10 Royal Orchard Blvd** Greencapital Limited Partnership

- OPA and ZBA, 4 buildings, 25 to 59 storeys, 1560 units



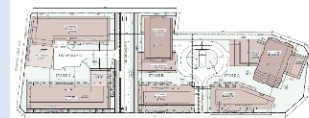
## **7089 Yonge St** Yonge Grandview Corp.

- Site Plan, 27 storeys, 212 units



## **201-206 Langstaff Rd E** Langstaff Land Holdings Ltd.

- ZBA & Subdivision, 6 buildings, 7 to 49 storeys, 1668 units



## **5-25 Langstaff Rd E** Condor Properties

- ZBA & Subdivision, 50 & 45 storeys, 1090 units



## **36-60 Steeles Ave E** Zonix Group Inc.

- OPA & ZBA, 4 buildings, 8 to 13 storeys, 877 units





# Input to Metrolinx's Initial Business Case

- Markham's 2020 intensification analysis indicates Royal Orchard, Clark, Steeles, and Langstaff support a subway station at build-out
- The analysis is consistent with development applications in process

|               | 500 Metre Radius from Station    | 800 Metre Radius from Station    |
|---------------|----------------------------------|----------------------------------|
| Station       | Population / Employment Estimate | Population / Employment Estimate |
| Steeles       | 32,500<br>5,000                  | 43,000<br>8,500                  |
| Clark         | 12,300<br>2,700                  | 22,900<br>5,100                  |
| Royal Orchard | 13,500<br>1,500                  | 19,200<br>2,000                  |
| Langstaff     | 10,000<br>4,000                  | 17,800<br>6,700                  |

Royal Orchard – Intensification Scenario with Floor Space Index



Source: 2020 City of Markham and Sajecki Planning





# Input to Metrolinx's Initial Business Case Cont'd

Clark – Intensification Scenario with Lands South of Rail Corridor



Source: 2020 City of Markham and Sajecki Planning

Steeles – Intensification Scenario



Source: 2020 City of Markham and Sajecki Planning



Thank You





**City of Markham Development Services Committee  
Yonge North Subway Extension Update  
April 26, 2021**

# York Region's Rapid Transit Network



1 Newmarket Centre



2 Vaughan Metropolitan Centre

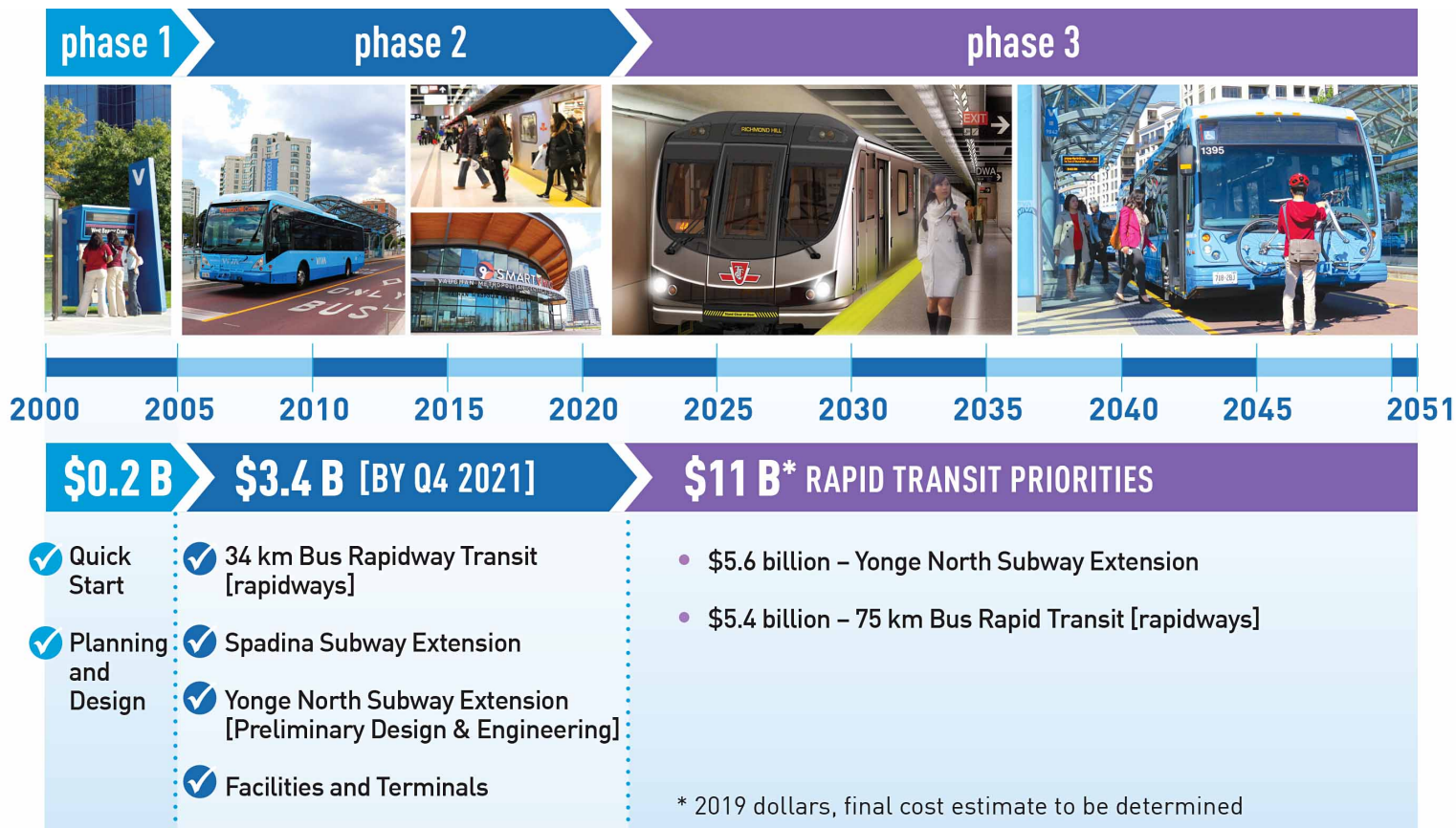


3 Richmond Hill Centre



4 Markham Centre

# Delivering rapid transit infrastructure that supports growth





## Fast, convenient travel options across York Region



100% of funded rapidways complete

34 km

38 stations

over \$2 billion in assets across the Region



# Union Station of the North



# The demand already exists



# Investment in the YNSE will create new jobs, build a stronger economy and improve quality of life in the GTHA



**supports the environment.**

The YNSE will remove **3,300** buses per work day from Yonge Street by the time it opens for service.



**the Yonge North Subway Extension will boost Canada's long-term economic growth.**



**bringing new jobs and residents.**

the Yonge North Subway Extension will create **52,000** construction jobs.




**connecting 2 employment megazones!**

over **54,000** employers in Markham and Vaughan will be connected by the Yonge North Subway Extension.



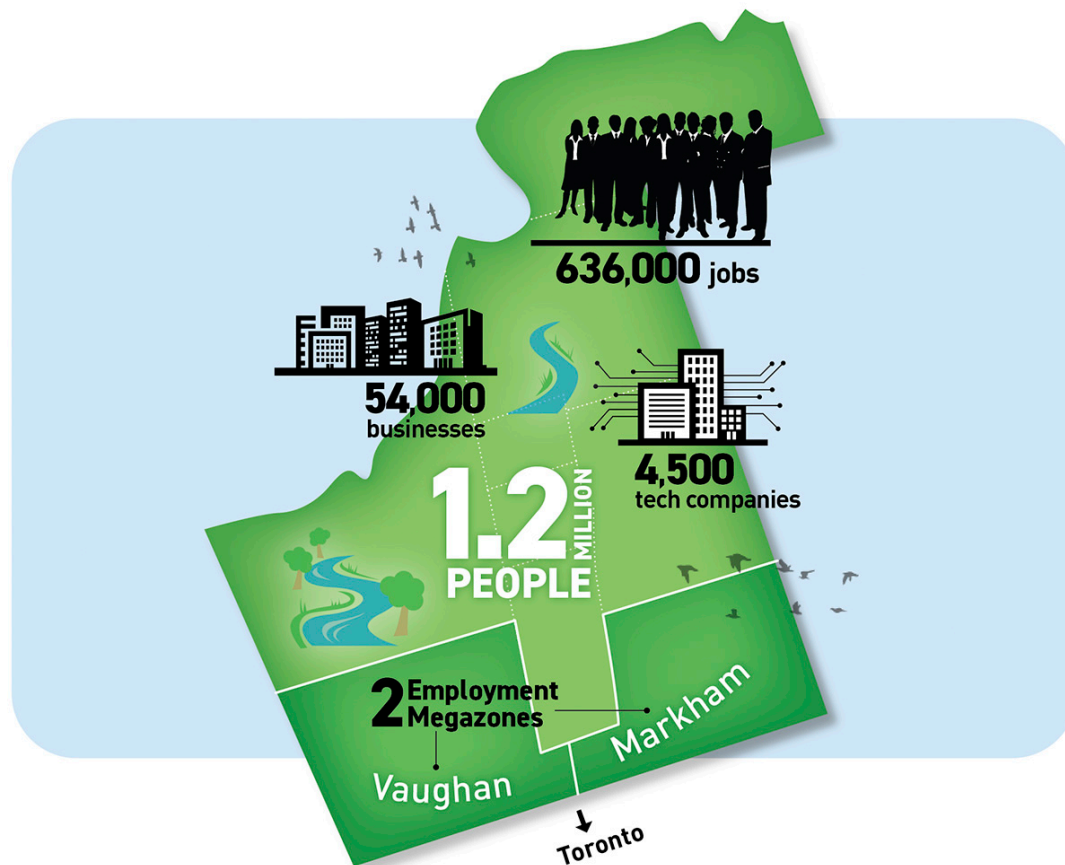
**supporting a sustainable future.**

the Yonge North Subway Extension will save **4,800** tonnes of greenhouse gas emissions per year.



**Yonge North Subway Extension will generate over \$7.8 billion in gross domestic product.**

## York Region needs the Yonge North Subway Extension





## The YNSE is York Regional Council's top transit priority



# Thank You!

YORK  
REGION  
RAPID  
TRANSIT  
CORPORATION



@ vivaNext



# YONGE NORTH SUBWAY EXTENSION

## Project Update

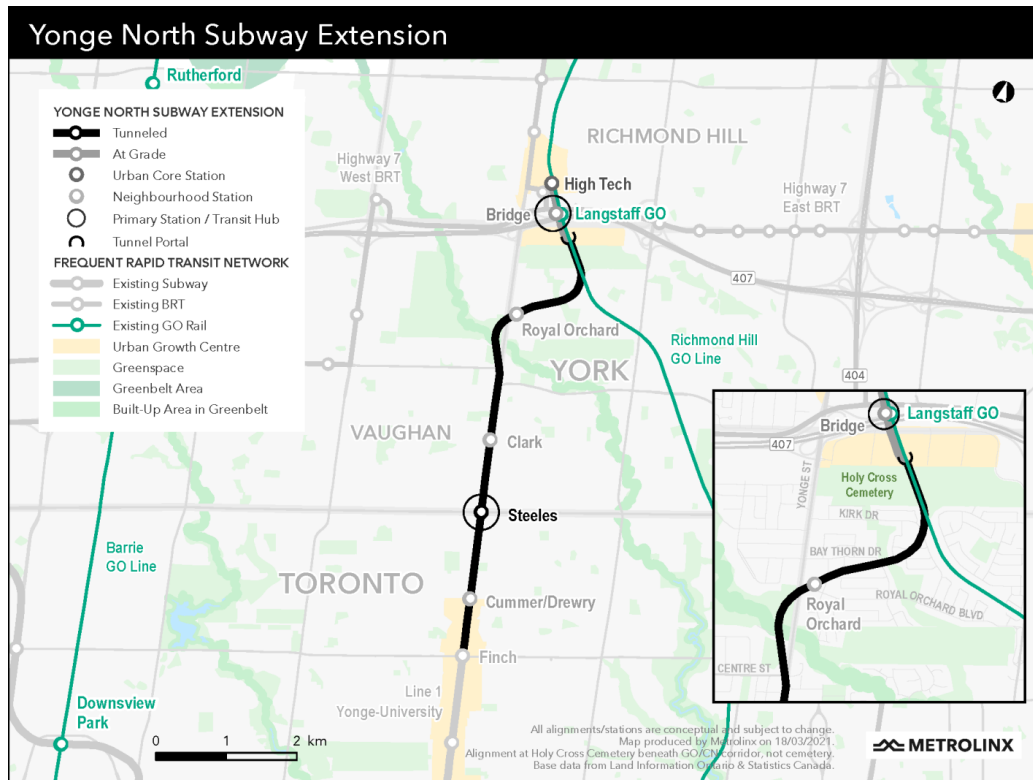
Stephen Collins, Program Sponsor, YNSE  
Rajesh Khetarpal, Vice President, Community Engagement

April 26, 2021



# BETTER TRANSIT CONNECTIONS FOR YORK REGION & TORONTO

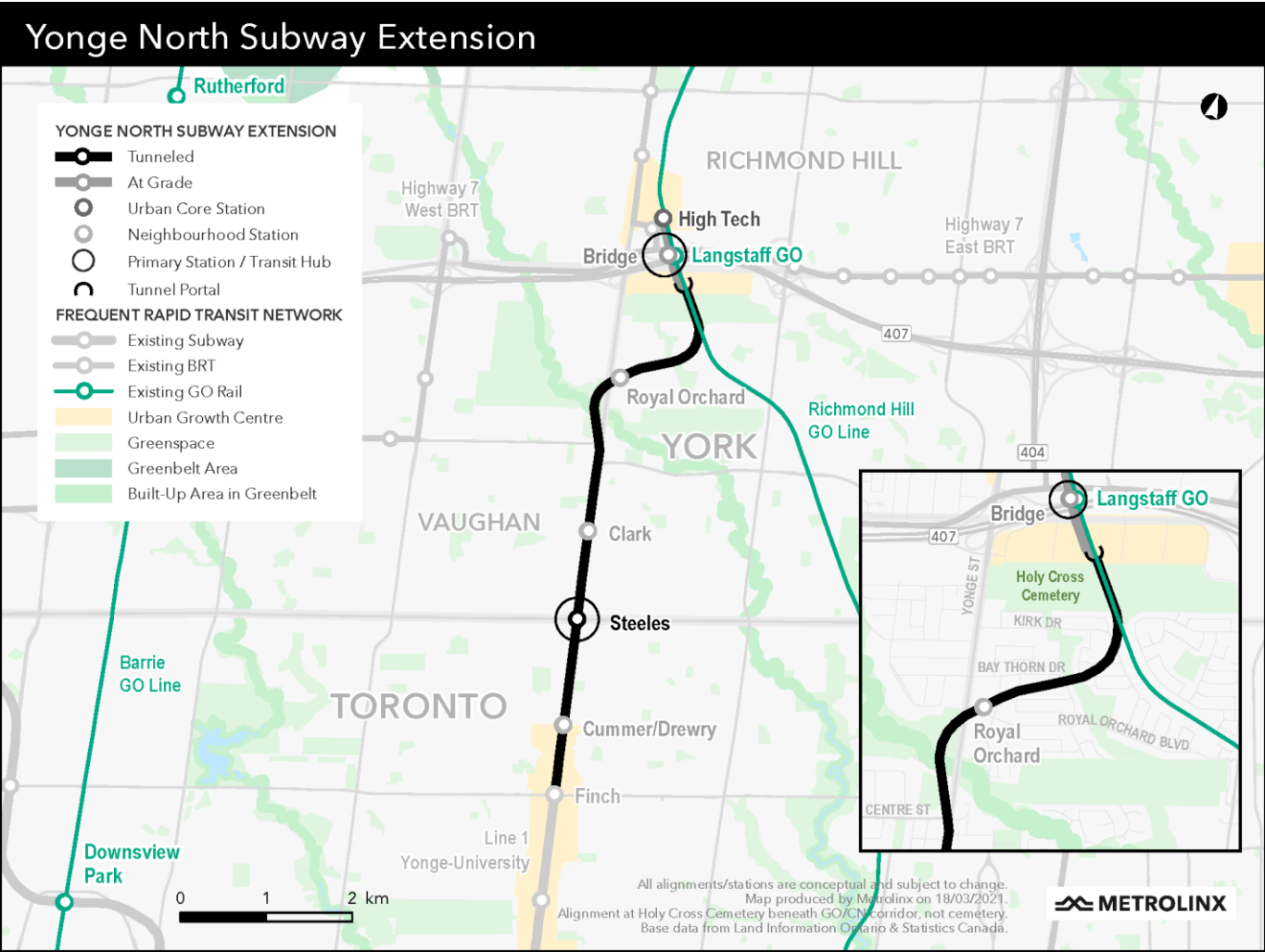
- **Four new stations** along an **approximately eight-kilometre extension** of TTC Line 1, from Finch Station north to Richmond Hill.
- Steeles Station will be a hub for local bus routes as well as a **future rapid transit line** along Steeles Avenue.



- Bridge Station will **conveniently connect** with GO train, GO bus, and local transit service, including VIVA BRT.
- High Tech Station will **serve future communities** envisioned within the Richmond Hill Centre area.
- Metrolinx is working with municipal partners to **evaluate and determine** the best location for the fourth station as planning work continues.

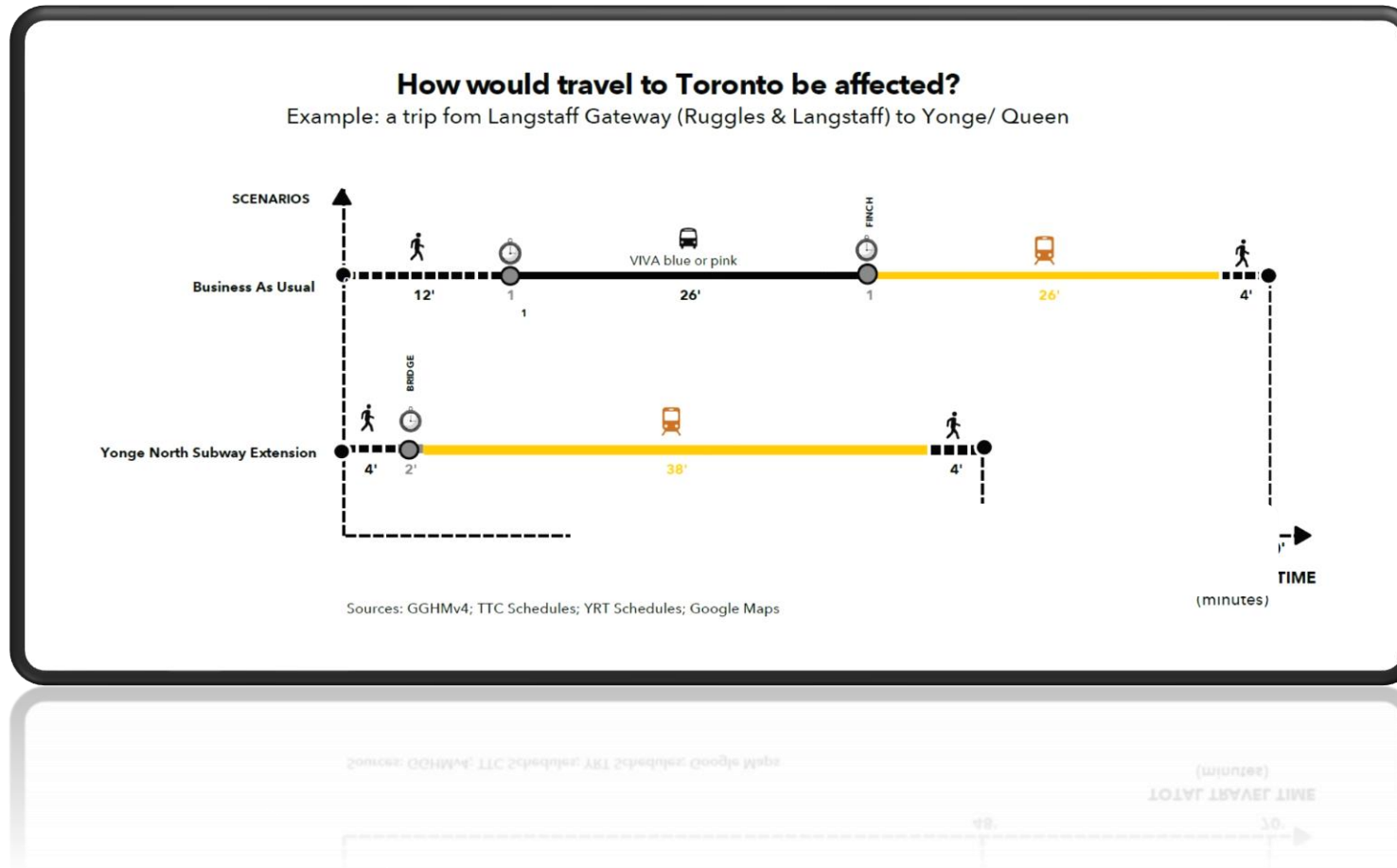


BY THE NUMBERS



|   |   |
|---|---|
| Route length                                  | ~8 km   |
| Ridership                                     | 94,100 daily boardings                                |
| Improved access to transit                    | 26,000 more people within a 10-minute walk to transit |
| Improved access to jobs                       | 22,900 employees within a 10-minute walk to transit   |
| Daily reductions in traffic congestion        | 7,700 km in vehicle kilometres traveled               |
| Yearly reductions in greenhouse gas emissions | 4,800 tonnes  |

# KEY BENEFITS



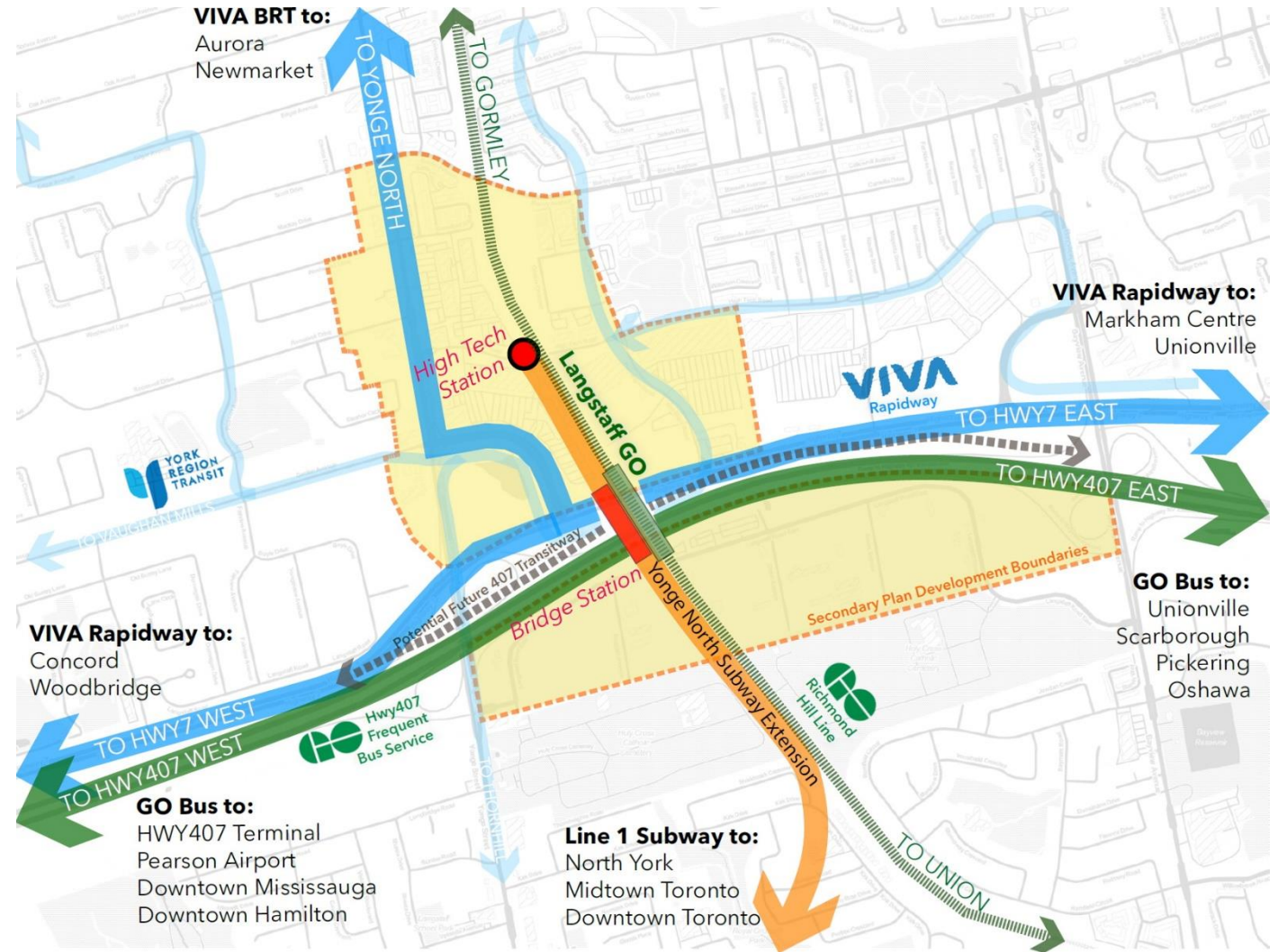
The extension will save riders as much as 22 minutes on a trip from York Region to downtown Toronto

- Bridge Station **maximizes TOC opportunities** by connecting two communities in Markham & Richmond Hill that are poised for growth.
- Shifting the alignment in the northern section **reduces construction timelines and property needs** by using a dedicated rail corridor that already exists.
- The project will serve **94,100 riders each day** by 2041, cutting the time spent commuting in Toronto and York Region by a combined **835,000 minutes daily**.

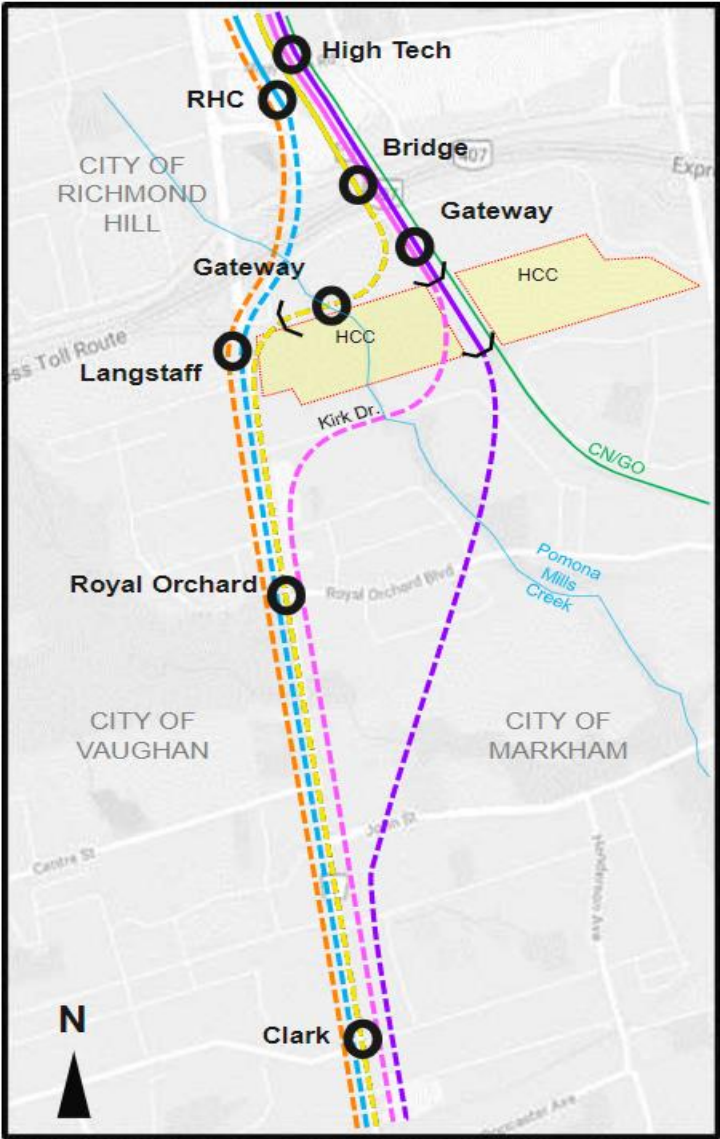
# BRIDGE STATION AND HIGH TECH STATION

Bridge Station and High Tech Station will serve the highest density areas to make it faster for riders to use the subway, and better for supporting growth and curbing local traffic congestion.

- **Fast and hassle-free** transfers to GO train/GO bus/local transit
- **Convenient access** to the subway at the heart of Richmond Hill Centre and Langstaff Gateway development areas
- More than half of Richmond Hill Centre residents will live within **walking distance** of High Tech Station by 2041
- Bridge Station site preserves nearby development space to allow the area to evolve into a **thriving urban centre**



# ALTERNATE ALIGNMENT OPTIONS CONSIDERED DURING REVIEW



Alternate alignments were screened out as they had similar community impacts and did not protect for Royal Orchard Station, or did not meet the minimum geometric requirements.



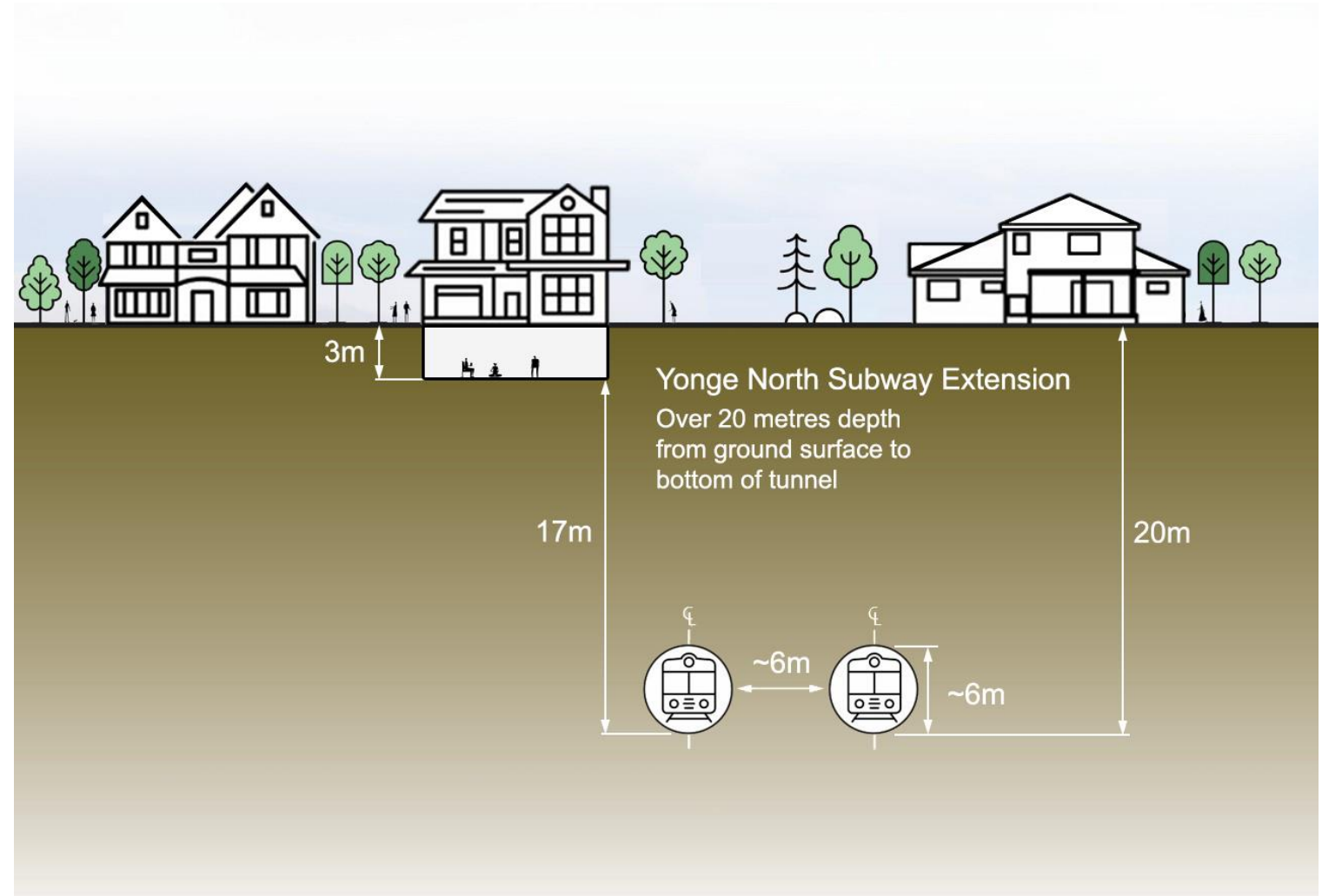
We are refining designs as we conduct and consult on environmental assessments for the project, and our goal will be to minimize impacts to communities as much as possible as we deliver major transit benefits to them.



# TUNNEL DEPTH - ROYAL ORCHARD COMMUNITY

At every turn, Metrolinx considers the latest technology and proven solutions to keep neighbourhoods as quiet and peaceful during construction and operation as before.

- Tunnels are proposed to be built at a depth where there would be **no direct impact** on the homes above
- **Modern, innovative tunneling technology** is available to help minimize impacts through construction and operations
- Exact tunnel depths will be determined through further study.



More detailed information about potential impacts and mitigations will be available as further design work is refined

# NOISE AND VIBRATION SOLUTIONS - ENVIRONMENTAL STUDIES

We are preparing an addendum to the existing **environmental assessment** (EA) that will cover off any changes to existing conditions since that EA was completed and evaluate the updated route.

|   |   |   |   |
|---|---|---|---|
|    | <b>The EA will study things like...</b> |  |  |
| <ul style="list-style-type: none"><li>• Noise and vibration solutions</li><li>• Soil and groundwater quality</li><li>• The natural environment</li><li>• Land use</li></ul> |   |   |   |

- Crews are already **collecting ground samples** along the route to inform this work.
- Data and **public input** will help Metrolinx make sure all the necessary solutions are put in place to keep things as quiet and peaceful as possible in each neighbourhood.

# NOISE AND VIBRATION SOLUTIONS - LATEST TECHNOLOGY

We will work with your community to ensure a comprehensive array of solutions are in place to address noise or vibration impacts. These solutions can include, but are not limited, to:



## Resiliently supported rail ties

An elastic pad under the rail ties that prevents vibration caused by coming into direct contact with the crushed rock that forms the track bed



## Rubber rail dampers

Discs that tend to look a lot like oversized hockey pucks attach to the rails and help soak up the vibration energy to reduce the sound of passing trains



## Ballast mats

A continuous layer of material that reduces the vibration transmitted into the ground as trains pass over



## Noise walls

These walls can be designed with a combination of solid and transparent panels, and have been installed across many parts of the Metrolinx rail network



## High-grade rail fasteners

These fasteners keep all the track parts tightly together and compress to absorb vibration



## Floating concrete slabs

The rails would be attached to large concrete slabs that are cushioned below by thick rubber pads that soak up vibrations.

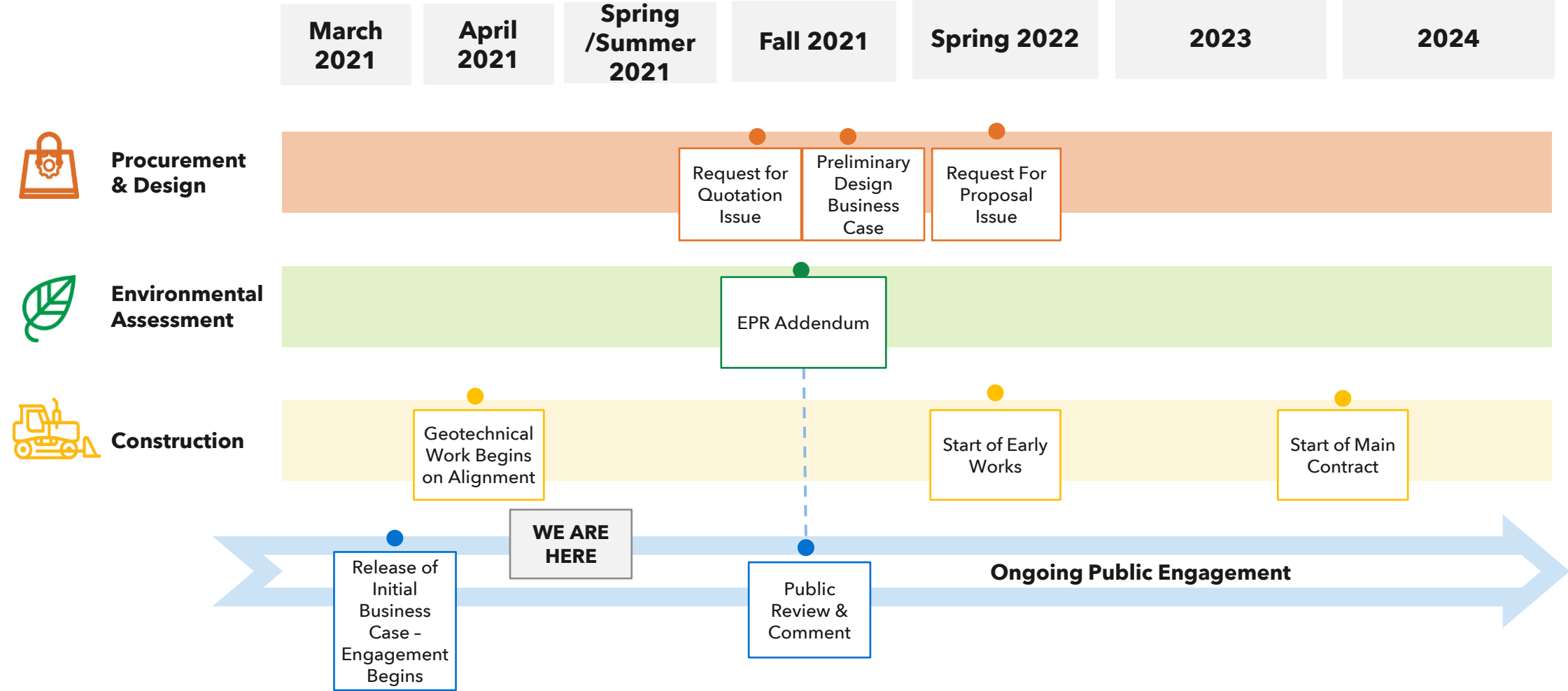
# EXAMPLES OF SUBWAYS NEAR AND UNDER RESIDENTIAL AREAS

There are many existing and future rapid transit lines that run near and beneath homes (measurements taken from ground surface to bottom of tunnel).

- **Westside Subway Extension Metro Purple Line - Los Angeles, California (opening 2025)**
  - Tunnels directly below single family homes and challenging geologic conditions
  - Tunnel depth 21m to 24m
- **Northgate Link Extension - Seattle Washington (opening 2022)**
  - Tunnels directly below single family homes and Washington University Campus
  - Tunnel depth 26m under residential area
- **Canada Line - Metro, Vancouver, British Columbia (2009)**
  - Passes under private residential properties adjacent to False Creek
  - Tunnel depth shallowest 13m to 23m
- **TTC Sheppard Subway - Toronto (2002)**
  - Tunnels along residential property lines
  - Tunnel depth 21m to 24m



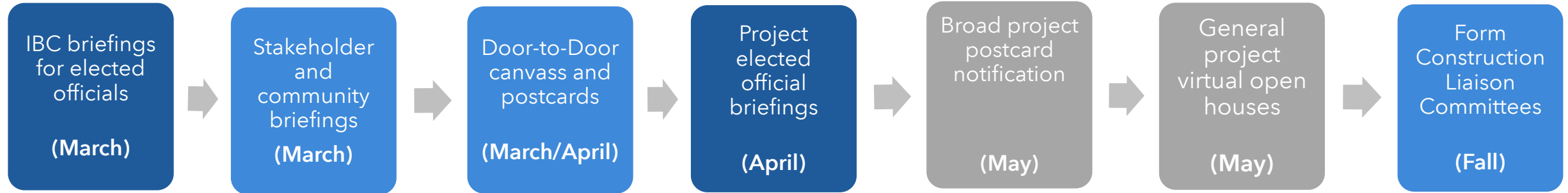
# PROJECT MILESTONES



Timelines are subject to change

# Communications, Community and Stakeholder Engagement

# COMMUNITY & STAKEHOLDER ENGAGEMENT



## OFFICIALS BRIEFINGS

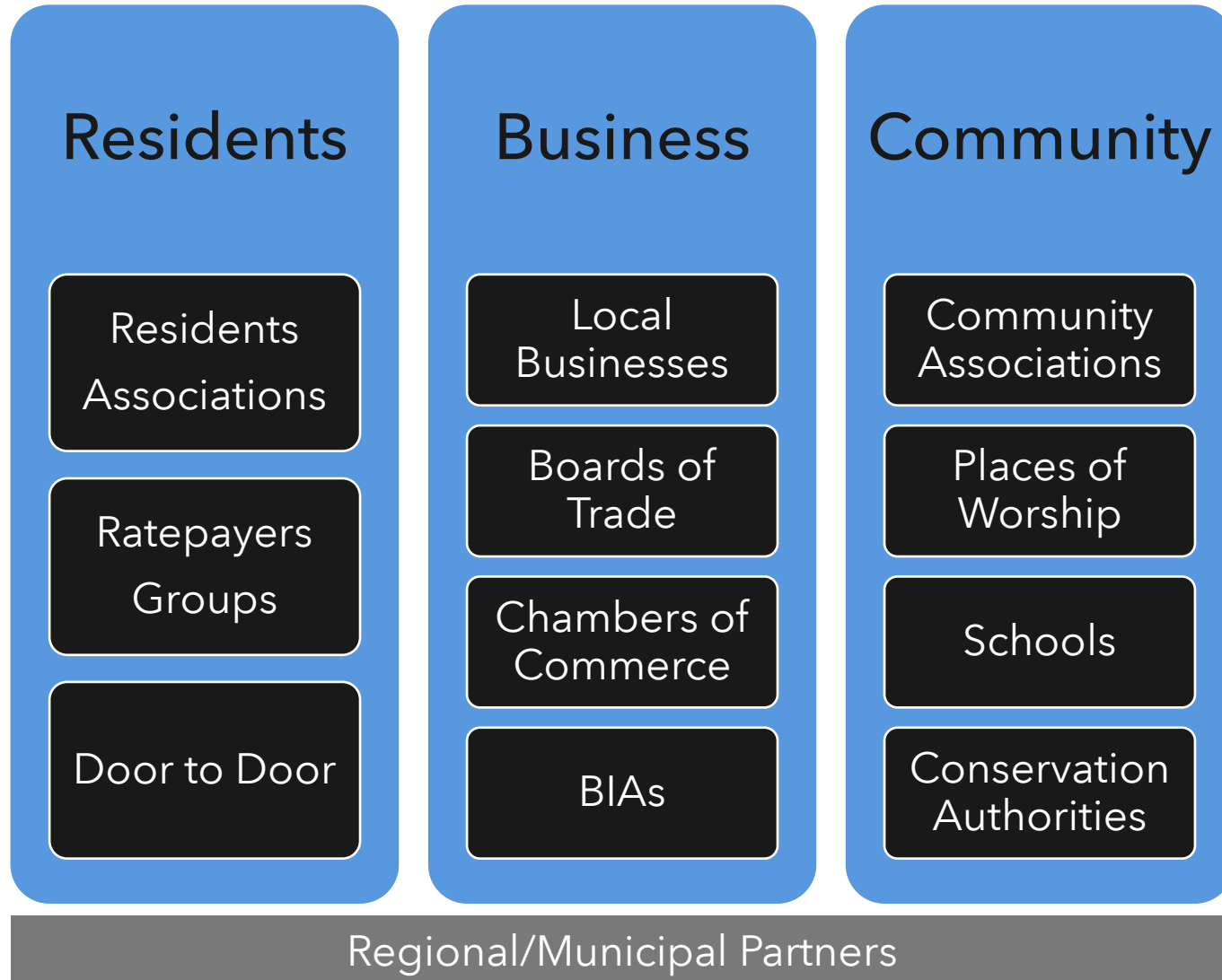
- IBC Briefings for Elected Officials **Ongoing**
- Council Presentations
  - Markham **March 22**
  - Richmond Hill **March 24**
  - York Region **March 25**
  - Vaughan **April 7**
  - Markham DSC **April 26**
- Briefings Elected Officials **Ongoing**
- Project Presentations **May 2021**
  - Municipal Partners, Councils, TEO, TTC
- Update Briefings **June 2021-Jan 2022**

## COMMUNITY ENGAGEMENT

- Project Briefings to Community Groups **Ongoing**
  - Resident Groups, BIAs, Chambers of Commerce
  - Indigenous Communities
- Door-to-Door Canvasses **March/April 2021**
  - Royal Orchard & Bayview Glen communities
  - Willowdale-Newtonbrook community
- Community Virtual Open Houses **April 2021**
  - Royal Orchard & Richmond Hill communities
- Project Meetings/Introductory Post Card **May 2021**
- Stakeholder Briefings **April-Aug 2021**
- Project Virtual Open Houses **May-Aug 2021**
- Project E-Newsletters **Bi-weekly**
- Form Construction Liaison Committees **Fall 2021**
- Community Walking Tours **Fall 2021**

Collaboration with Communications Partners (Municipal/Regional Communicators, TTC, YRRTC)

# ONGOING COMMUNITY & STAKEHOLDER ENGAGEMENT



## Week of April 19:

- Richmond Hill Virtual Open House
- Project postcard mail distribution

## Week of April 26:

- Markham Development Services Committee meeting
- Elected official briefings

## Week of May 3:

- Northern municipalities Virtual Open House
- Elected official briefings

## Week of May 10:

- Ongoing briefings for resident, business and community groups

*Ongoing Metrolinx News articles*

## Field work begins this spring:



- Noise & vibration monitoring
- Natural Environment/Archeology surveys
- Exploratory work for tunnels & launch shaft
- Utility investigations

## Our commitment to keeping communities informed

Residents near planned field work and natural environment/archeology surveys will receive **notification flyers** at least two weeks in advance

Updates on major field work, and natural environment/archeology surveys will be distributed regularly via **email newsletter**

Major notices of work will be posted on the **Metrolinx Engage** website

**Construction Liaison Committees** will open the lines of communication about all aspects of the project

## UPCOMING ENGAGEMENT AND FIELD WORK IN MARKHAM

- Upcoming Engagement
  - Northern York Region Communities Virtual Open House (May 5)
  - York Region and City of Toronto Virtual Open House; introduction to EA (May 19)
  - EA MetrolinxEngage online portal (May-onwards)
  - Project Information Postcard mail distribution (ongoing)
- Upcoming Field Work
  - Noise and vibration testing and Utility Scans (ongoing)
  - Geotechnical Surveying in Royal Orchard Community (upcoming)
  - Archaeological, built heritage and natural environment surveys (upcoming)

# STAY CONNECTED - WE'RE HERE FOR YOU!




## Subscribe:

- [YongeSubwayExt@metrolinx.com](mailto:YongeSubwayExt@metrolinx.com)
- 416-202-7000
- Bi-weekly E-Blast (subscribe via email)

## Project Information:

- [Metrolinx.com/YongeSubwayExt](https://metrolinx.com/YongeSubwayExt)
- Virtual Open House link:  
[www.metrolinxengage.com/YongeSubwayExt](https://www.metrolinxengage.com/YongeSubwayExt)

## Follow:

-  [@YongeSubwayExt](https://twitter.com/YongeSubwayExt)
-  [@YongeSubwayExt](https://www.instagram.com/YongeSubwayExt)
-  [Yonge North Subway Extension](https://www.facebook.com/YongeNorthSubwayExtension)







# Appendix

# CREATING CONNECTIONS IN MARKHAM

## UNIONVILLE GO STATION

### Improving Station Access & Enhanced Accessibility

- 300 new parking spots, replacing stairs with ramps
- Safe pedestrian walkways through the parking lot
- More bicycle storage and New pedestrian tunnels

### Enabling More Service

- A second track and a turnaround track so trains can travel both ways on the Stouffville line

### Platform Improvements

- Canopies over the platforms with shelters
- A new island platform and a relocated east platform with new snow-melting systems

### FORECAST COMPLETION 2021



## MOUNT JOY GO STATION

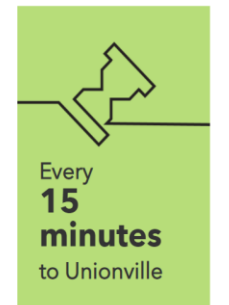
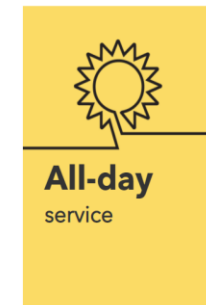
### Early Station Improvements

- Enhanced safety and communication features now complete
- Installation of tactile yellow tiles at the edge of the train platform
- New digital signs on the train platform



## GO EXPANSION IN MARKHAM

- Future service on the Stouffville line includes **two-way all-day service** between Mount Joy and Union Station, and fifteen minute service or better between Unionville GO Station and Union Station.
- Metrolinx is currently pursuing road-rail grade separations at Kennedy Road and Denison Street.
- Proposed Unionville Storage Siding as part of the New Track and Facilities TPAP



# CREATING CONNECTIONS IN YORK REGION

## In Construction:

- Bloomington GO Station (new)
- Rutherford GO Station and Grade Separation
- Unionville GO Station
- Lincolnville GO Station
- York vivaNEXT BRT
- Steeles Grade Separation

## In Procurement:

- Barrie Contract 2 (Maple GO Upgrades)
- Barrie Contract 3 (King City GO Upgrades)
- Station upgrades at Aurora GO, Centennial GO, Markham GO, Mount Joy GO, East Gwillimbury GO, Stouffville GO
- GO Bus Expansion; Keswick to 404 Terminus at Woodbine



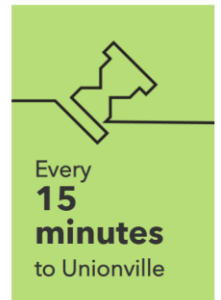
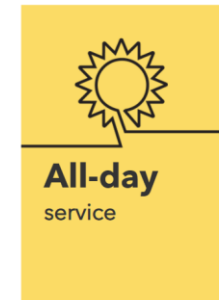
## In Early Design:

- McNaughton Grade Separation (Vaughan)
- Wellington Grade Separation (Aurora)
- Network Electrification and infrastructure
- New rolling stock and locomotives



## GO EXPANSION IN YORK REGION

- On the Stouffville line, **two-way all-day service** between Mount Joy and Union Station, and fifteen minute service or better between Unionville GO Station and Union Station.
- On the Barrie line, **two-way, all-day fifteen minute service** or better between Aurora GO Station and Union Station
- Parking expansions, station enhancements, grade separations, electrification.





# APPROVED REFERENCE ALIGNMENT

| Refined Option 3 Alignment                                |   |
|---|---|
| <b>Strategic Case</b>                                     |   |
| Strong Connections  | <ul style="list-style-type: none"> <li>94,100 daily riders<sup>1</sup></li> </ul>   |
| Complete Travel Experiences                               | <ul style="list-style-type: none"> <li>835,000 person-minutes daily travel time savings compared to BAU</li> <li>22 minutes saving on a trip from Langstaff Gateway area (Langstaff/Ruggles) to Downtown Toronto (Yonge/Queen) compared to BAU</li> </ul>   |
| <b>Economic Case</b>                                      |   |
| Total Economic Impacts (Benefits) (\$2020, Present Value) | \$3666.5 M  |
| Total Costs (\$2020, PV)                                  | \$4386.3 M to \$5135.5 M  |
| Net Present Value (\$2020, NPV)                           | \$-1358.6 M to \$-607.9 M   |
| Benefit-Cost Ratio  | 0.74 to 0.86  |
| <b>Financial Case (\$2020, PV)</b>                        |   |
| Total Revenue Adjustment                                  | 114.4 M   |
| Capital Costs <sup>2</sup>                                | \$4,625.0 M   |
| Operating and Maintenance Costs                           | \$ -39.0 M  |
| Total Costs   | \$4,447.1 M   |
| <b>Deliverability and Operations</b>                      |   |
| Constructability Matters                                  | <ul style="list-style-type: none"> <li>Coordination with the York Durham Sewage System (YDSS) at Steeles</li> <li>East Don River Crossing</li> <li>Construction within the busy Yonge Street corridor</li> <li>Maintaining services on Line 1 during construction</li> <li>Interface with the Highway 7 and 407 Corridor</li> </ul> |
| Property Impacts  | <ul style="list-style-type: none"> <li>No tunneling under Holy Cross Cemetery</li> </ul>  |
| Operations  | <ul style="list-style-type: none"> <li>Integrated into current Line 1 Operations</li> <li>Fully automated operation allows for higher service frequencies</li> </ul>  |

# PROPOSED MAJOR CHANGES TO PROJECT ELEMENTS CONSIDERED IN IBC

## Steeles Station

Moving Steeles Bus Terminal from Below Steeles Avenue to at-grade integrated with development

- Original proposal planned the bus terminal below Steeles Avenue perpendicular to and above the subway station
- Value engineering recommended relocating to at-grade to reduce costs and minimize impacts to YDSS and construction disruption

## East Don River

Tunneling below instead of bridging over the East Don River

- Original proposal planned a two level (upper for road - lower for subway) bridge spanning the river valley
- Value engineering recommended tunneling below the watercourse to reduce costs and disruptions during construction

## Train Storage Facility

Moving the YNSE Train Storage Facility north of High Tech Road from below ground to at-grade

- Original proposal planned a 3-track, 12 train below ground storage facility
- Value engineering recommended bringing the facility to at-grade in order to reduce costs while maintaining similar functionality

## YNSE Alignment

Changing the point where the subway alignment shifts off of Yonge Street

- Original proposal for the alignment to shift east of Yonge Street north of Holy Cross Cemetery
- Value engineering and peer review identified potential benefit increases and cost reductions from bringing the subway to at-grade adjacent to the CN corridor, which will also better serve the central portions of the Richmond Hill Centre and Langstaff Gateway Urban Growth Centre