METROLINX

YONGE NORTH SUBWAY EXTENSION

Project Update

Stephen Collins, Program Sponsor, Yonge North Subway Extension

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EXECUTIVE SUMMARY

The Yonge North Subway Extension (YNSE) alignment provides significant benefits to transit users and adjacent communities, achieving the optimal station locations to serve the current and future Richmond Hill Centre/Langstaff Gateway urban growth centre.

The current preliminary construction estimate for the project is $5.6 billion as announced in the 2019 Provincial budget. The YNSE will also be a critical enabling project for the future build out of the Richmond Hill Centre/Langstaff Gateway Provincially designated Urban Growth Centre and complement the significant integrated transit hub in this area.

YNSE benefits:

- attract at least 94,000 daily riders
- enhance rapid transit connections to 26,000 more people within a 10-minute walk
- bring 22,900 more employees within a 10-minute walk of rapid transit
- save up to 22 minutes per trip when commuting to downtown Toronto
- reduce yearly green house gas emissions by 4,800 tonnes
- reduce vehicle kilometers travelled by 7,700 kilometres

PROJECT SCOPE

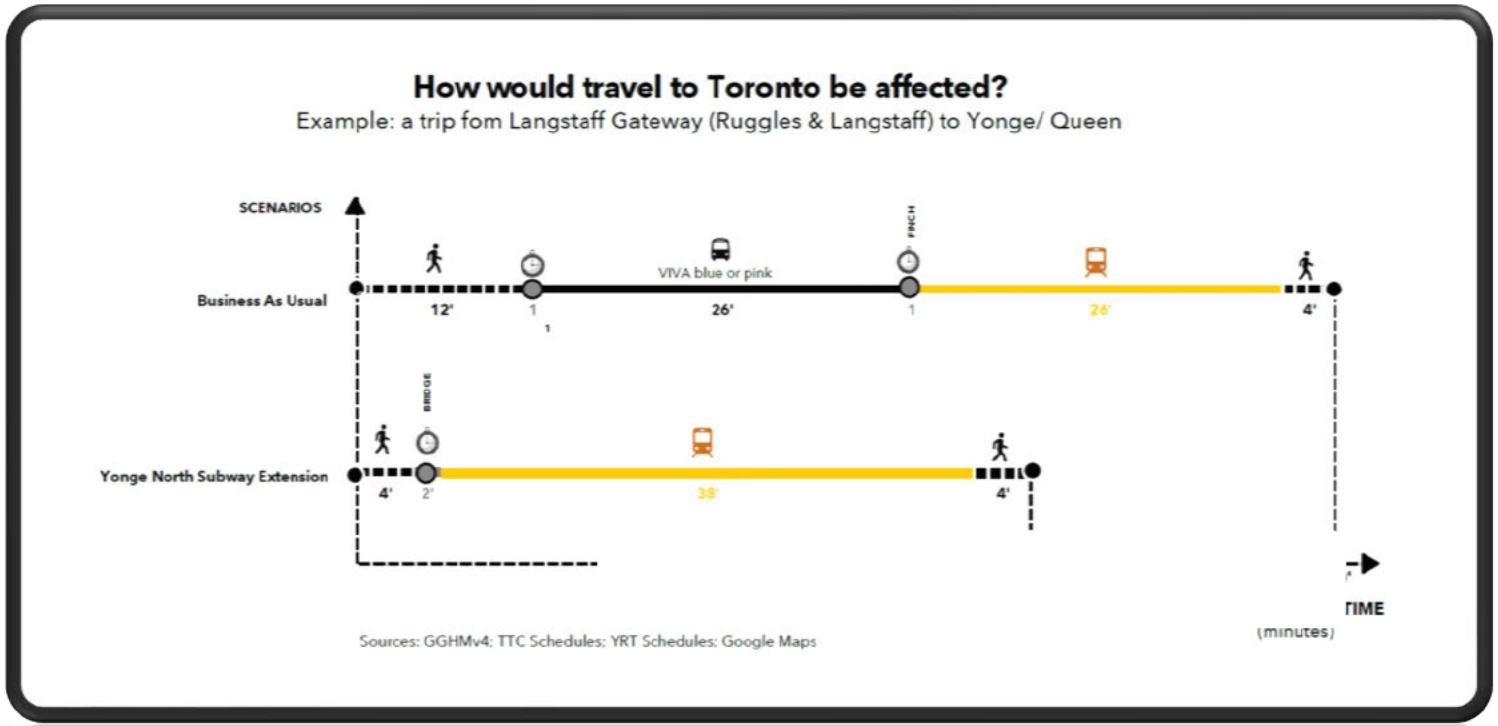
- **Four new stations** along an **approximately eight-kilometre extension** of TTC Line 1, from Finch Station north to Richmond Hill.
- Steeles Station will be a hub for local bus routes as well as a **future rapid transit line** along Steeles Avenue.
- Bridge Station will **conveniently connect** with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

- 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.
- We will work with partners and stakeholders to **explore innovative funding partnerships** that could add benefits to the project as the analysis is refined.

BY THE NUMBERS

Route length	~8 km
Ridership	94,100 daily boardings
Improved access to transit	26,000 more people within walking distance to transit
Improved access to jobs	22,900 employees within walking distance 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 Markham 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**.

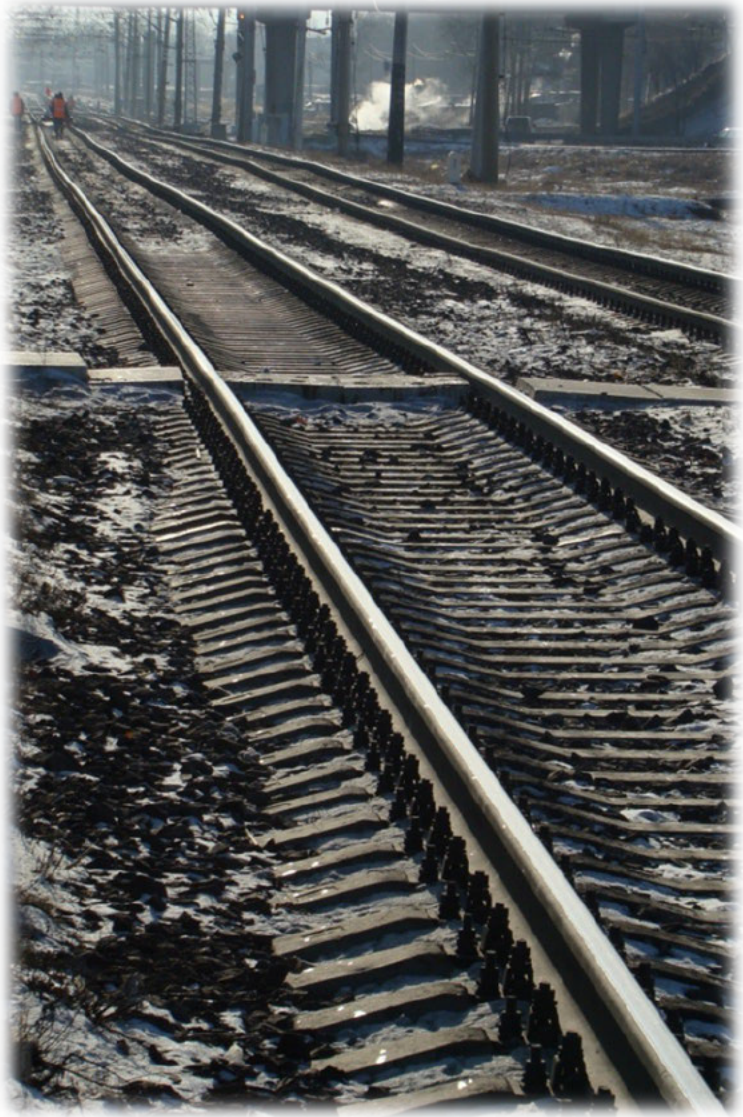
At-Grade Benefits

AT-GRADE ALIGNMENT

Running the extension at-grade along the existing CN railway corridor means we can finish the project sooner.

- This approach reduces the need for **complex, time-consuming, and costly** construction of tunnels and underground stations by using a dedicated rail corridor that already exists.

- Limits construction work to areas that are more out of the way will also help **cut down on disruptions** of hydro, natural gas, and water service as we bring you more transit.

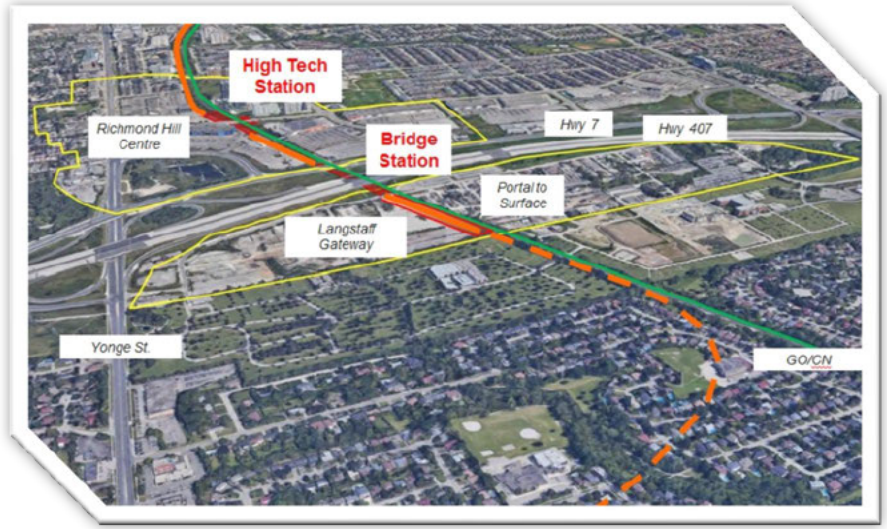


AT-GRADE STATIONS

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

- At-grade stations **cut down on travel time** by avoiding lengthy descents into underground tunnels.
- Building Bridge Station at surface level instead of underground will make transferring from the subway to a GO train, GO bus, or local transit **fast and hassle-free**.
- This location will bring **convenient access** to the subway to the heart of Richmond Hill Centre and Langstaff Gateway, two areas that are poised for growth and development.
- High Tech Station will put the subway within **walking distance** for more than half of the residents expected to live in the Richmond Hill Centre area by 2041.
- By shifting the location of the planned northern transit hub south to Bridge Station, more space will be available within the core of Richmond Hill Centre allow this area to evolve into a **thriving urban centre**.

Source: City of Markham 2009 Langstaff Gateway Master Plan



Reducing Noise & Vibration

MITIGATION

Metrolinx is committed to addressing any noise and vibration due to construction and operation of the extension to ensure our project improves the quality of life for our neighbours.

- The tunnels along the underground portion of the alignment will be deep enough that noise and vibration noticeable at the surface is expected to be minimal.

We will work with communities to ensure a comprehensive array of measures are in place to address noise or vibration impacts.

These measures include but are not limited to:

- **Rail dampers** attach to the side of rails and use a spring mechanism with steel and rubber components to dissipate vibration.
- **Resiliently supported rail ties** have an elastic pad under them to prevent from them from coming into direct contact with the crushed rock that forms the track bed.
- **Ballast mats** provide a continuous layer of material that prevents vibration from being transmitted into the ground.
- **Floating slabs of concrete** are mounted on pads or steel springs and effectively reduce vibration because they are separated from the primary tunnel structure.
- **Highly resilient fasteners** hold the track onto the under-rail foundation and compress to absorb vibration.
- **Noise walls** are barriers that block the sound path between source and receiver. For example, a combination of solid and transparent panels can be installed between the railway corridor and residential areas.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