The Yonge subway extension is part of a GTA-wide transit system.
Metroline | the big move

15-Year Plan for Regional Rapid Transit and Highway Improvements

Top 15 Priorities
Within the first 15 years of the Regional Transportation Plan’s implementation, the top 15 priorities for early implementation are:

- Yonge subway extension to Richmond Hill Centre
- Eglinton rapid transit from Pearson Airport to Scarborough Centre
- Upgrade/extension of Scarborough rapid transit line
- Finch/Sheppard rapid transit from Pearson Airport to Scarborough Centre and Meadowvale
- Express Rail on Lakeshore line from Hamilton to Oshawa
- Rapid transit in Hamilton from McMaster University to Centennial Parkway
- Hurontario rapid transit from Port Credit to Brampton
- 403 Transitway from Mississauga Centre to Renforth Gateway
- Rail link between Union Station and Pearson Airport
- Rapid transit service along Hwy 2 in Durham
- Improvements/extension of GO Rail service to Bowmanville
- Early phases of bus rapid transit service on Dundas St in Halton and Peel
- Viva rapid transit on Hwy 7 and Yonge St through York Region
- Brampton’s Queen St Acceleride
- Spadina subway extension to Vaughan Corporate Centre

Yonge subway extension ~ a key priority
To develop recommendations for the Yonge subway extension project, we assessed options and obtained public input for:

- Alignment
- Numbers and locations of stations
- How the subway will cross the East Don River
- The location of the terminus of the subway at Highway 7, its features and how it works
Where are we today?

- Notice of study commencement
- Project approval: In time for consideration with provincial budget

2008
- October: PCC
- November: PCC
- December: PCC

2009
- January: PCC
- February: PCC
- March: PCC
- April: Project approval

Design and Construction

Be involved
- Visit vivayork.com for updates
## What are the major phases of planning and building a subway?

<table>
<thead>
<tr>
<th></th>
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<td>[6 months duration] October 2008 – April 2009</td>
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<td>May 2009</td>
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<tr>
<td>Set-up: 1 year, mid 2010</td>
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<td>Property</td>
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<td>[12 months duration] 2009-2011</td>
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<td>Design/Engineering</td>
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<td>2010-2013 [multiple projects starts and completion]</td>
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<td>2012-2016 [multiple projects starts and completion]</td>
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<tr>
<td>[1 year duration] Throughout 2016</td>
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<td>In-service</td>
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<td>2016/2017</td>
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</tbody>
</table>

### Key targets

- Project begins: 2009
- Design/Engineering: 2009
- Construction: 2012
- Open: 2016/2017
What comes with a subway?

- Passenger pick up and drop off
- Pedestrian entrance
- Bus terminal
- Parking facility
- Substation
- Emergency exit building
### Yonge subway capacity improvements

<table>
<thead>
<tr>
<th>Improvement</th>
<th>% Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>New subway cars have increased capacity</td>
<td>+10%</td>
</tr>
<tr>
<td>Closer spacing between trains</td>
<td>+36%</td>
</tr>
<tr>
<td>Full train</td>
<td>n/a</td>
</tr>
<tr>
<td>Empty train</td>
<td>n/a</td>
</tr>
<tr>
<td>7th car added to train</td>
<td>+10%</td>
</tr>
<tr>
<td>Transfer to Spadina Subway</td>
<td>+4%</td>
</tr>
<tr>
<td>New parking spaces on Spadina Subway extension</td>
<td>n/a</td>
</tr>
</tbody>
</table>

*Every other train makes a short turn at Finch station in morning peak period.*
Timeline for Yonge subway capacity/ridership milestones

- Funding of new signalling system for YUS line
- Yonge Bloor station capacity study complete
- Subway railyard needs study complete
- Yonge subway EPR to MOE
- Toronto Rocket cars in service (10% increase in Yonge capacity)
- Sheppard East LRT opens
- ATO complete Yonge-University-Spadina line
- Eglinton LRT opens (Stage 1)
- Finch West LRT opens
- Eglinton LRT opens (Stage 1)
- ATO complete Finch/Union
- ATO complete Finch/Downview (10% increase in Yonge subway speeds/capacity)
- Spadina subway opens to Vaughan Corporate Centre with ATO (diversion of 4% of peak hour Yonge riders to Spadina)
- Don Mills LRT opens
- Jane LRT opens
- Scarborough Malvern LRT opens
- Downtown relief line (future)

Legend:
- New signalling for Yonge-University-Spadina line
- Toronto-York Spadina subway extension
- Toronto Rocket cars
- Subway railyard needs study complete
- Yonge subway EPR to MOE
- Yonge Bloor station capacity study complete
- Increased GO service levels on Richmond Hill, Stouffville and Barrie GO lines
- ATO: Automatic Train Operation
- EPR: Environmental Project Report
- LRT: Light Rail Transit
- MOE: Ministry of Environment
- YUS: Yonge University Spadina line

Earliest possible opening of Yonge subway extension to Richmond Hill Centre

Improved headways to 105 seconds with full ATO in place
AM peak hour / peak direction subway volumes

1985 – 2007, with selected modal splits

- Yonge line passenger volumes southbound to Wellesley Station
- University-Spadina line passenger volumes southbound to Museum Station

Central Business District bound TTC modal split for AM peak period:

- 1985: 54%
- 1987: 51%
- 1990: 46%
- 1991: 49%
- 1995: 46%

Sources: TTC subway count surveys, Cordon Count surveys

1996 – 2007, projected to 2031

- Yonge line passenger volumes southbound to Wellesley Station

- 1996: 37,000
- 2001: 42,000

- University-Spadina line passenger volumes southbound to Museum Station

- 1996: 37,000
- 2001: 42,000

To 2031
**Yonge-Bloor station**

- Key to improving Yonge Subway capacity
- Bottleneck to adding more trains, with existing or new signalling system
- Must cut train ‘dwell’ time in half
- Add a third platform at Yonge Subway level
  - Train doors will open on **both** sides
  - Unload to new centre platform
  - Load from relocated side platform
  - Unloading/loading at the same time
  - Will cut theoretical dwell time by 50%
- Could also add platforms on BD level

**Capacity Study**
- Initiated in January 2009
- To be completed by Fall 2009
- Confirm previous concepts for expansion
- Identify other operational strategies to increase capacity
- $450 million project
- Currently not funded
- 4-5 years to design/construct
- Station will be operational throughout construction
How is a subway built?

- Utility location and piling
- Installation of decking
- Excavation and soil removal
- Construction of subway structure
- Removal of decking/street restoration
Construction principles

Our goal is to minimize disruption and inconvenience to the community during subway construction. Every effort will be made to:

• Use tunnelling, wherever possible
• Ensure the design of subway related structures is sensitive to existing neighbourhoods
• Maintain property access at all times
• Ensure appropriate number of lanes of traffic are always available in the peak direction
• Minimize the size of construction work areas
• Contain work areas to maintain community and pedestrian safety
• Provide timely construction updates to the community
• Complete construction as quickly as possible
Yonge subway extension: station planning

- Finch
- Cummer/Drayton
- Steeles
- Clark
- Royal Orchard
- Langbridge/Leyuguaff
- Richmond Hill Centre

<table>
<thead>
<tr>
<th>Construction Method</th>
<th>Existing*</th>
<th>Cut &amp; Cover</th>
<th>Tunnel</th>
<th>Cut &amp; Cover</th>
<th>Tunnel</th>
<th>Cut &amp; Cover</th>
<th>Tunnel</th>
<th>Bridge</th>
<th>Cut &amp; Cover</th>
<th>Tunnel</th>
<th>Cut &amp; Cover</th>
<th>Tunnel</th>
<th>Cut &amp; Cover</th>
</tr>
</thead>
</table>

Surface facilities/connections

- 13-bay TTC bus terminal (existing)
- 6-bay after subway extension**
- 17-bay Regional bus terminal (existing)
- 4-bay after subway extension
- Proposed Finch West LRT
- PPUDD
- 3214 park-n-ride (existing)
- Substation

Station Planning

<table>
<thead>
<tr>
<th>Screening criteria</th>
<th>80</th>
<th>85</th>
<th>110</th>
<th>80</th>
<th>30</th>
<th>40</th>
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<tbody>
<tr>
<td>Existing densities</td>
<td>110 - 120</td>
<td>280 - 520</td>
<td>145 - 180</td>
<td>100 - 130</td>
<td>144 - 266</td>
<td>295 - 550</td>
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<tr>
<td>Planned densities†</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>Transportation connection</td>
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<td>✔</td>
<td>✔</td>
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<td>✔</td>
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<tr>
<td>Natural environment</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>Cultural environment</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

Tail track: ❌
Cross track: ❌

* Some reconstruction of existing tail tracks will be required
** 4-bay after Finch LRT is completed
† Persons and jobs per hectare

Not to scale
Preliminary construction methodology

While significant lengths of the subway extension will be tunnelled, the construction of subway stations and special track work structure is done using the cut and cover method.
Cummer/Drewry station

Legend
- Subway station
- Subway line
- Entrance
- Limit of surface elements
- Underground walkway
- Full property acquisition
- Partial property acquisition for surface elements only
- Vent structure
- Bus loop
Steeles station
Steeles station | level by level

1. station overview all levels

2. street level

3. bus platform 1 level below street

4. subway level 2 levels below street

Legend
- Street Level
- Entrance
- Bus Platform Level
- Concourse Level
- Future Connections
- Subway Platform Level
- Vertical Movement
- Fare Paid Zone
East Don River crossing

- Heritage features will be designed into the bridge in consultation with the community.
East Don River proposed traffic staging

- Careful removal of existing culvert and embankments will minimize local disruption.

1. **Stage 1** temporary lanes to the west

2. **Stage 2** temporary northbound lanes on partially constructed bridge

3. **Stage 3** final bridge in service
Crossing the East Don River

1. Restore the valley to its natural state
2. Level Yonge Street to provide continued access to adjacent sites
3. Ensure the bridge design includes heritage features in context with the community
4. Ensure lighting is designed to be sensitive to adjacent uses in the community
5. Provide a safe pedestrian environment to cross between the heritage community north and south of the bridge
6. Meet Ministry of Environment guidelines for attenuating traffic and subway noise

South aerial view from York Condominium 300
Artists rendering – concept only
Royal Orchard station
Langstaff / Longbridge station

Legend

- Subway station
- Subway line
- Electrical substation
- Entrance
- Limit of surface elements
- Underground walkway
- Full property acquisition
- Partial property acquisition for surface elements only
- Vent structure
- Limit of PPUDO, Park 'n' Ride, and associated roads.
Langstaff/Longbridge parking

Design features that address community concerns:

- Noise buffers
- Maintaining a green corridor connection
- Bio swales
- Sustainable treatments for the parking area

Legend

- High-rise residential
- Mid-rise residential
- Low-rise residential
- Main street retail
- Elementary School
- Open space
- Woodlot
- Green roof
- Site boundary
- Office
- Civic

Conceptual design, to be further developed in consultation with the community.
Richmond Hill Centre alignment

Legend
- 407 Transitway preliminary routes under study
- Community connector
- Hydro corridor
- Existing GO parking
- Bus terminal
- 407 transitway station
- Limits of PPUDO, PNR and associated roads

- Richmond Hill Centre Terminal works in conjunction with Langstaff/Longbridge station

Image courtesy of Calthorpe

Richmond Hill Centre alignment

Bus terminal
CNR Bala Subdivision (Richmond Hill line)
Pedestrian bridge

Holy Cross Cemetery
Langstaff GO station

Yonge Street
Langstaff/Longbridge Station

scale: 1:2000
Major project costs

<table>
<thead>
<tr>
<th>major project elements</th>
<th>cost M$</th>
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<tr>
<td>stations and area facilities</td>
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<td>Finch improvements</td>
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<td>Cummer/Drewry</td>
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<td>engineering and other costs</td>
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<td>property</td>
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**project cost estimate, 2008 dollars**  $2.4 billion
Next steps

January/February 2009
- Issue Notice of Completion
- Submit Environmental Project Report to Ministry of the Environment for 30-day public review
- Ministry of the Environment review period [up to 35 days]

March/April 2009
- Issue Statement of Completion

Spring 2009
- Project ready to proceed