

RE:EX16.1

# Developing Toronto's Transit Network Plan to 2031

Executive Committee Meeting

June 28, 2016

# March 2016 City Council Direction

## **SmartTrack:**

- Approved SmartTrack/GO Regional Express Rail (RER) Integration options C and D for further study and removed from consideration the separate and parallel SmartTrack option, option A and option B.
- Removed heavy rail options on the western corridor for SmartTrack from consideration and requested a review of the Eglinton West LRT extension from Mount Dennis to Mississauga Airport Corporate Centre (MACC) and Pearson International Airport.

## **Scarborough Subway Extension:**

- Removed from consideration the Bellamy and Scarborough Express Rail (SmartSpur) corridors for the Scarborough Subway Extension (SSE)

## **Relief Line:**

- Approved the Pape to Downtown via Queen/Richmond as the preferred corridor for the Relief Line project.

## **Other:**

- Council directed staff to report back in June 2016 on funding and financing discussions.

# Report Recommendations

## **SmartTrack (Recommendations #1-2)**

- SmartTrack/RER Integration scenario with up to six new stations on the Stouffville/Lakeshore East GO corridor (Finch, Lawrence, Gerrard, and Unilever) and the Kitchener GO Corridor (Liberty Village and St. Clair West); and
- An Eglinton West LRT extension with 8 to 12 stops between Mount Dennis and Renforth Gateway, as the western corridor for SmartTrack.

## **Scarborough Transit Network (Recommendations #3-6)**

- Remove from further consideration the 3-stop SSE,
- Retain third party expert to review cost estimate for Express McCowan option, and other express subway options;
- Advance to Transit Project Assessment Process (TPAP) for express subway.
- Undertake additional technical and planning analysis for the Eglinton East LRT.

## **Relief Line (Recommendations #7-9)**

- Approve the Pape-Eastern-Queen alignment for the first phase of Relief Line and advance to TPAP.

# Transit Expansion Project Development Process

Typical Transit Project Lifecycle and Phases of Work

EXPLORATION	PROJECT & DESIGN DEVELOPMENT	DELIVERY	OPERATIONS
<ul style="list-style-type: none"> <li>Feasibility Review</li> <li>Initial Service Concept and Infrastructure Plan development</li> <li><b>Initial Business Case</b></li> </ul>	<ul style="list-style-type: none"> <li>Initial Design Work ( less than 30%)</li> <li>Environmental Assessment/TPAP</li> <li>Funding &amp; Financing Strategy</li> <li>Project Delivery Assessment/ Procurement Options Analysis</li> <li>Intermediate/Full Business Case</li> </ul>	<ul style="list-style-type: none"> <li>Procurement</li> <li>Detailed Design</li> <li>Construction</li> </ul>	<ul style="list-style-type: none"> <li>Transition to operations</li> </ul>
Design (less than 10%)	Design (10% to 30%)	Design (30% to 100%)	N/A
Class 4 or 5 Cost and Schedule Estimates	Class 3 or 4 Cost and Schedule Estimates	Class 1 or 2 Cost and Schedule Estimates	



We are here

# Project Status Summary

Project	Lead / Partnership	Current Status	EA / TPAP Status	Funding Status
SSE	City, TTC	Initial Business Case Class 4 Estimate	Pre-TPAP. Project Assessment underway	\$3.56B (YOE/Escalated\$) committed
Relief Line	City, TTC	Initial Business Case Class 5 Estimate	Pre-TPAP. Project Assessment underway	Unfunded
SmartTrack	City, TTC, Metrolinx	Initial Business Case Class 4/5 Estimate	Pre-TPAP. Project Assessment underway	Unfunded
Eglinton West LRT	City, TTC, Metrolinx	Initial Business Case Class 4/5 Estimate	EA Approved (2010). Amendment required	Unfunded
Eglinton East LRT	City, TTC, Metrolinx	Preliminary Options Analysis- Class 5 Estimate	EA Approved (2009). Amendment required	Unfunded

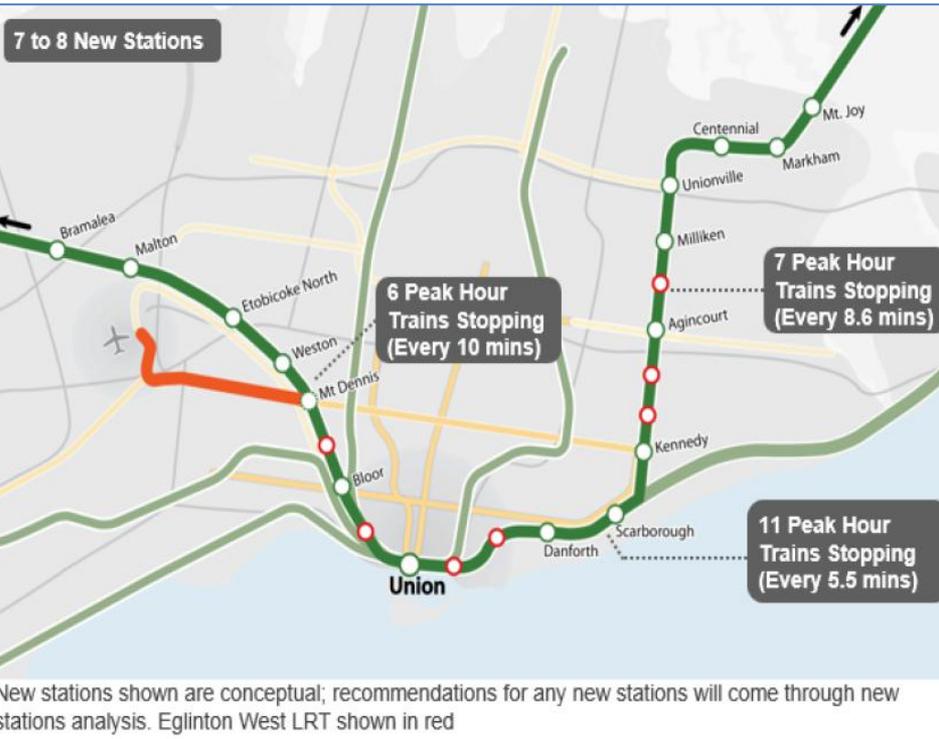
# PROJECT UPDATES AND RECOMMENDATIONS

# SmartTrack

SmartTrack/GO RER Integration  
SmartTrack Stations  
Eglinton West LRT

# SmartTrack/RER Integration Options

## Integration Option C



## Integration Option D



# Recommended SmartTrack/ GO RER Integration



GO Corridor	Recommended New SmartTrack Stations	Existing GO Stations
<b>Stouffville/ Lakeshore East GO Corridor</b>	<ol style="list-style-type: none"> <li>1. Finch East</li> <li>2. Lawrence East</li> <li>3. Gerrard</li> <li>4. Unilever/Don Yards</li> </ol> <p><b>Not Included:</b></p> <ul style="list-style-type: none"> <li>• Ellesmere</li> <li>• Queen/Degrassi</li> </ul>	<ol style="list-style-type: none"> <li>1. Unionville*</li> <li>2. Milliken</li> <li>3. Agincourt</li> <li>4. Kennedy</li> <li>5. Scarborough</li> <li>6. Danforth</li> </ol>
<b>Union Station Rail Corridor</b>		<ol style="list-style-type: none"> <li>7. Union</li> </ol>
<b>Kitchener GO Corridor</b>	<ol style="list-style-type: none"> <li>5. Liberty Village</li> <li>6. St. Clair West</li> </ol> <p><b>Not Included:</b></p> <ul style="list-style-type: none"> <li>• Spadina***</li> </ul>	<ol style="list-style-type: none"> <li>8. Dundas West/Bloor</li> <li>9. Mount Dennis**</li> </ol>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>*Outside jurisdiction</li> <li>** Planned station</li> <li>***Recommended on Barrie Corridor</li> </ul>		

# SmartTrack Western Corridor: Eglinton West LRT

An Eglinton West LRT Extension with 8 to 12 new stations between Mount Dennis and Renforth Gateway, and potential grade separations located at Martin Grove Road, Kipling Avenue and the Eglinton Flats is being recommended.



# SmartTrack Capital Cost Estimates (\$Billions)

	Estimate Class Level	Constant 2014\$
SmartTrack/RER with up to 6 new stations	4/5	0.7 – 1.1
Eglinton West LRT with 8-12 stops and 3 potential grade separations.	4/5	1.5 – 2.1
	<b>Total:</b>	<b>\$2.2 – 3.2</b>

Notes:

- Cost estimates prepared by Metrolinx, and have not been validated by the City. Cost estimates require reconciliation with the individual station costs outlined in each new station initial business case.
- Costs are described in 2014 figures, and do not include escalation, financing, lifecycle and operations/maintenance. See attachments 1 to 3.
- Province of Ontario has committed \$13.5 billion (2014\$) in capital costs for RER, including an estimated \$3.7 billion (2014\$) in capital costs to support key infrastructure for SmartTrack
- Eglinton West LRT directly benefits the City of Mississauga and the Greater Toronto Airport Authority
- Cost estimates for the incremental components of SmartTrack have been developed at 0% design and are a Class 5 cost estimate. Base components associated with RER are at a higher level of design.

For more information: Financial Impact Section (Page 7) of Developing Toronto's Transit Network Plan to 2031 Report

# Recommendations

1. City Council approve the following components which comprise the SmartTrack project scope, and request the Province of Ontario and Metrolinx to partner with the City of Toronto and the Toronto Transit Commission, to complete the remaining technical and planning analysis and undertake any required Environmental Assessment/Transit Project Assessment Process:
  - a. SmartTrack/Regional Express Rail (RER) Integration scenario with up to six new stations located at Finch, Lawrence, Gerrard and Unilever on the Stouffville/Lakeshore East GO corridors and Liberty Village and St. Clair West on the Kitchener GO corridor; and
  - a. Eglinton West LRT extension with between 8 to 12 stops between Mount Dennis and Renforth Gateway, and potential grade separations located at Martin Grove Road, Kipling Avenue and the Eglinton Flats.
2. City Council request the City Planning Division and the Toronto Transit Commission, in partnership with Metrolinx, the City of Mississauga and the Greater Toronto Airport Authority (GTAA) to further develop options for extending the Eglinton West LRT between Renforth Gateway and Pearson International Airport.

# Next Steps

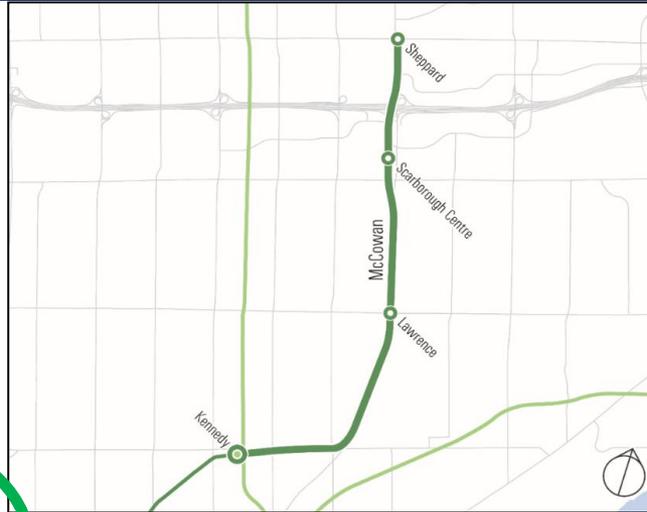
- Advancing further technical and planning work in order to undertake the EA/TPAP processes required for the recommended SmartTrack/RER Integration scenario, the new SmartTrack stations, and the Eglinton West LRT extension from Mount Dennis to Renforth Gateway;
- Commencing negotiations on cost-sharing, project governance, asset ownership, fare policy, funding and project delivery for SmartTrack and the Eglinton West LRT extensions;
- Undertaking further work with the City of Mississauga and the Greater Toronto Airport Authority (GTAA) in partnership with Metrolinx to refine options for extending the LRT between Renforth Gateway and Pearson International Airport as a next phase of the project.

For more information: see Attachments 1 – 3.

# Scarborough Transit Network

# Scarborough Subway Extension

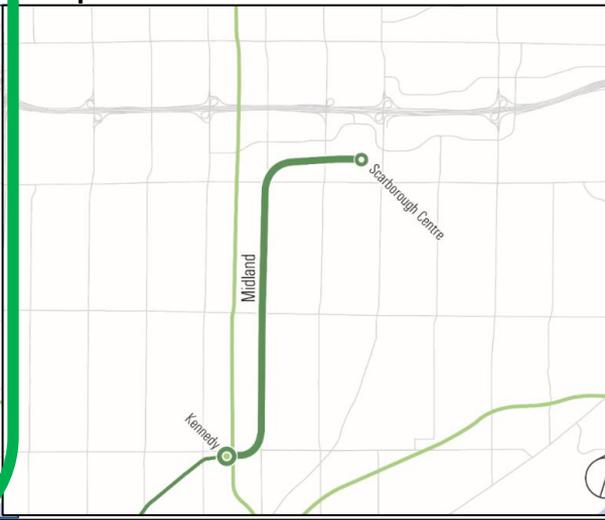
Option 1 (Base Case): 3-Stop McCowan



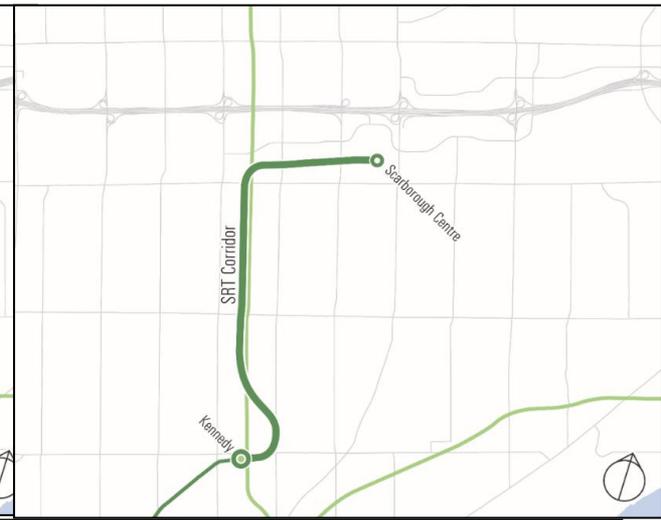
Option 2A: Express via McCowan



Option 2B: Express via Midland



Option 2C: Express via SRT Corridor

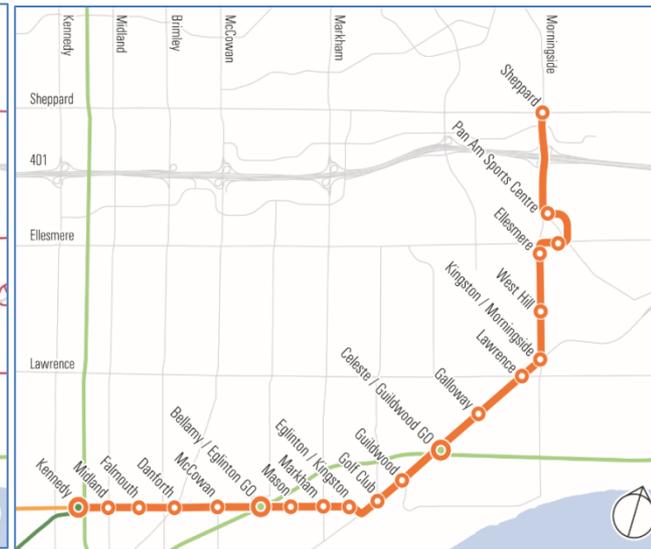


# Eglinton East LRT

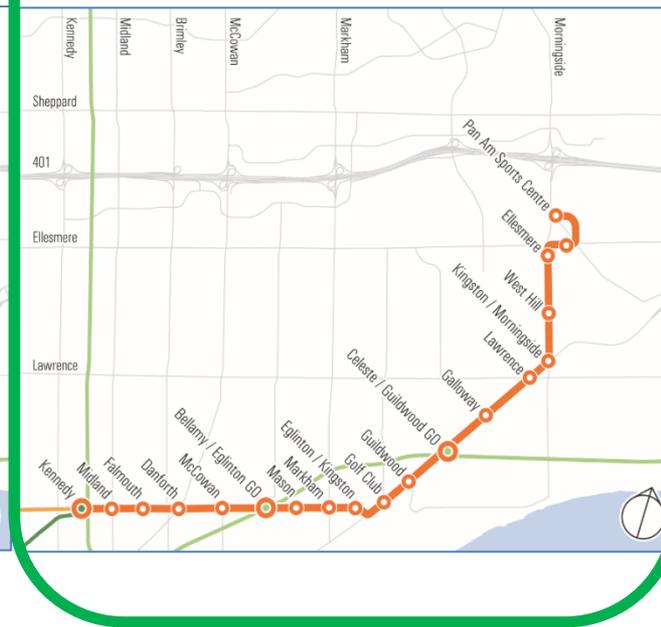
Option 1 (Base Case)  
Existing Bus Service



Option 2: Approved EA  
Alignment with modifications



Option 3: Eglinton East LRT  
terminating at UTSC



# Scarborough Transit Network Capital Cost Estimates (\$Billions)

	Estimate Class Level	YOE/Escalated \$billions		
		Construction Cost	SRT Life Extension and Decommissioning (\$156M+\$133M)	Total
<b>SSE- 3 Stop McCowan (Option 1)</b>	4	4.32	0.289	4.61
<b>SSE- McCowan Express (Option 2A)</b>	4	2.87	0.289	3.16
<b>Eglinton East LRT to UTSC (Option 3)</b>	5	1.58 – 1.67		1.58 – 1.67

SSE Notes:

- SSE Cost estimates prepared by the TTC. Estimates include cost to construct.
- Costs do not include financing, lifecycle and operations/maintenance. See attachments 4 to 5.
- Assumes line in service by late 2025, with construction taking approximately 6 years (2020-2025). Note this is a preliminary schedule based on City Council approving the preferred alignment in July 2016.
- Cost estimates have been developed at approximately 5% design and are a Class 4 cost estimate (per AACE guidelines). Class 3 estimates are required to establish the project budget baseline.
- Potential risks include the incorporation of a single tunnel design and the increased depth of the station(s), which could affect the expected accuracy of the estimates.
- Costs assume traditional procurement approach. A separate analysis on project delivery options is underway per City Council direction.

Eglinton East LRT to UTSC Notes:

- Eglinton East LRT cost estimate prepared by 3<sup>rd</sup> party consultant for the City. Estimates include cost to construct. Do not include cost to finance.
- Assumes line in service by late 2023, with construction taking approximately 4 years (2020-2023). Project timeline, funding source and procurement method still to be determined.
- Cost estimates have been developed at 0% design, and are a Class 5 estimate.
- Option 3 estimate includes storage tracks; does not include a maintenance facility.

# Recommendations

3. City Council request the City Manager and the CEO, Toronto Transit Commission to remove from consideration the 3-stop McCowan Scarborough Subway Extension (SSE) and continue to develop an SSE Express option, by conducting the following:

- a. Retaining the services of a third-party rail transit construction and cost –estimation expert to undertake a risk assessment and detailed review of the TTC's 5% design cost estimates for the McCowan corridor and other possible express subway alignment options; and
- b. Prepare the Environmental Project Report for the SSE express subway and issue the Notice of Commencement for the Transit Project Assessment Process (TPAP) once ready to proceed.

4. City Council request the City Manager and the CEO, Toronto Transit Commission, in partnership with Metrolinx, and in consultation with the University of Toronto Scarborough (UTSC), to undertake further technical and planning analysis with respect to an Eglinton East LRT extension to the UTSC, including:

- a. Advancing the Eglinton East LRT to a minimum of 5% design;
- b. Assessing the interface at Kennedy Station of the Eglinton East LRT, Metrolinx Eglinton Crosstown project, and the preferred SSE option as a result of the analysis requested in recommendation 3;
- c. Assessing the potential realignment of Military Trail through UTSC; and
- d. Identifying the requirements for the next phase of the Eglinton East LRT extension to Malvern.

For more information: see Attachments 4 and 5

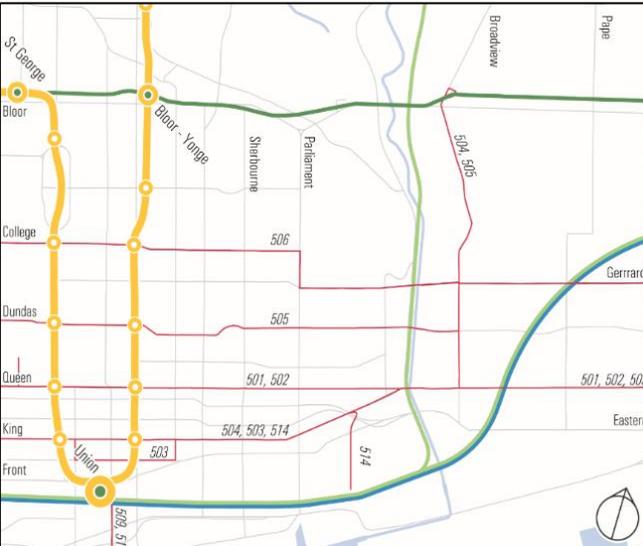
# Next Steps

- Retaining the services of a third-party expert in rail transit construction and cost-estimation to undertake a risk assessment and detailed review of the TTC's 5% design cost estimates for the Express McCowan subway, and other possible express subway alignments;
- Preparing the Environmental Project Report for the SSE Express subway in order to issue the Notice of Commencement for the TPAP once ready to proceed;
- Advancing the design on the Eglinton East LRT to a minimum of 5% in order to support decision-making; and
- Evaluating the SSE Express subway option in conjunction with the Eglinton East LRT extension to UTSC and Malvern, in order to determine the preferred network solution for Scarborough through a business case analysis.

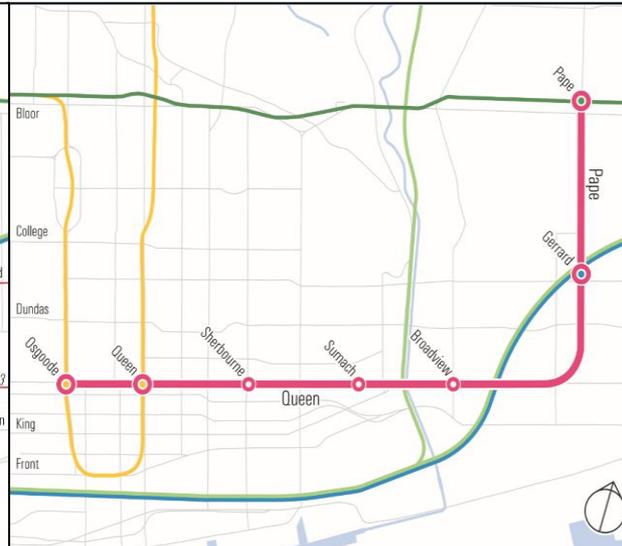
# Relief Line Phase 1

# Relief Line Phase 1

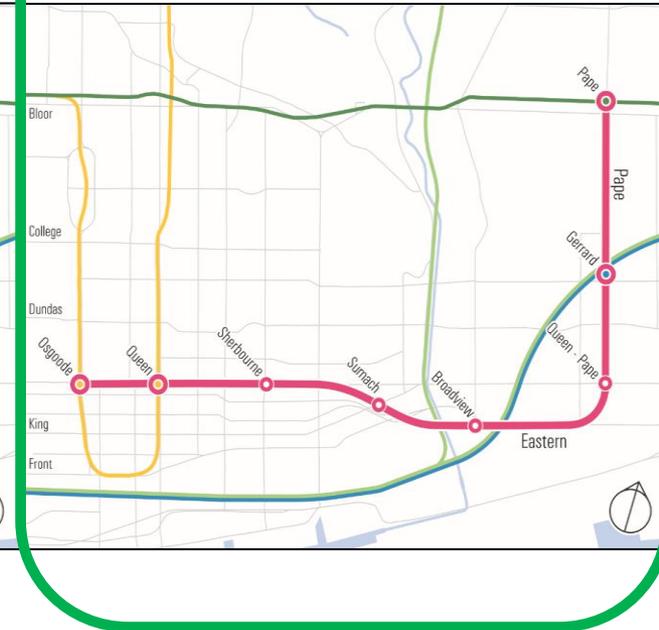
Option 1 (Base Case)  
Existing/Planned Improvements



Option 2: Pape-to-Downtown  
via Queen



Option 3: Pape-to-Downtown  
via Eastern then Queen



# Relief Line Cost Estimate

	Estimate Class Level	YOE/Escalated \$'s
<b>Relief Line- Pape-Eastern-Queen (Option 3)</b>	5	6.80

Notes:

- Cost estimate prepared by the TTC. Costs assume traditional procurement approach;
- Costs do not include financing, lifecycle and operations/maintenance. See attachment 6.
- Assumes line in service by 2031, with construction taking approximately 10 years (2021-2031)
- Cost estimates have been developed at less than 5% design and are a Class 5 cost estimate (per AACE guidelines).

# Recommendations

7. City Council approve the Pape-Eastern-Queen alignment for the Relief Line, and authorize the Chief Planner & Executive Director, City Planning and the CEO, Toronto Transit Commission to:
  - a. Work in partnership with Metrolinx to confirm station locations for optimal connections between the Relief Line and SmartTrack/Regional Express Rail, including future extensions of the Relief Line; and
  - a. Prepare the Environmental Project Report for the Relief Line and issue the Notice of Commencement for the Transit Project Assessment Process once ready to proceed.
8. City Council authorize the City Manager in consultation with the CEO, Toronto Transit Commission to develop a Terms of Reference with the Province of Ontario and Metrolinx to advance the next phases of planning and design for the Relief Line, including extensions of the Relief Line north to Sheppard Avenue and west to the Bloor subway line.
9. City Council request the Toronto Transit Commission and the City Planning Division to assess potential impacts associated with tunnelling and station construction during the detailed design phase of the project, and identify mitigation measures for private property owners, and conduct further public consultation where impacts to residential areas are identified, such as near Pape Avenue and Queen Street.

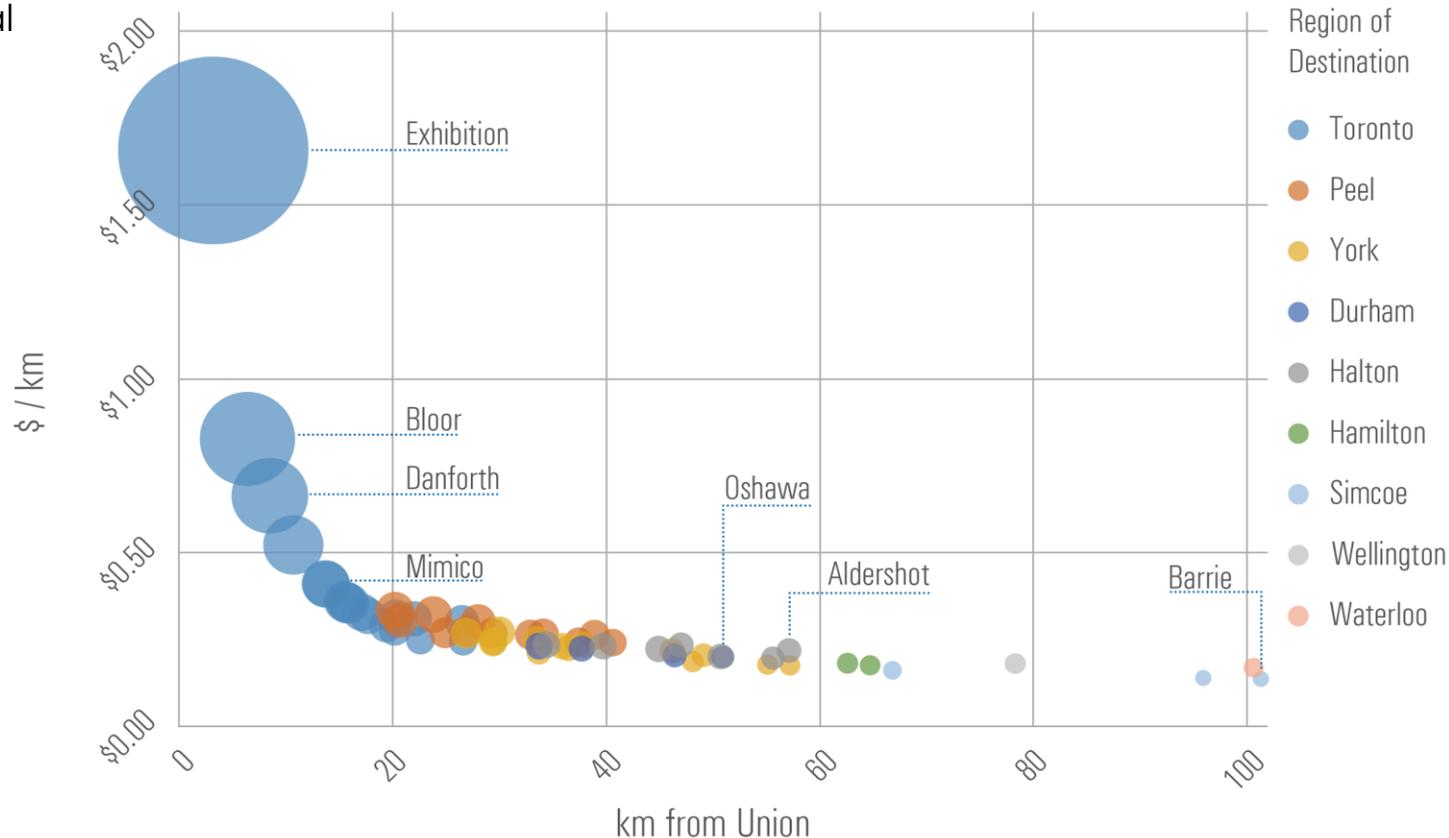
# Next Steps

- Further design to build on City and TTC work to-date including:
  - refining station locations and preparing station concept plans;
  - developing the conceptual design for the preferred alignment;
  - determining potential impacts and mitigation measures;
  - completing the Environmental Project Report (EPR); and
  - launching the formal Transit Project Assessment Process (TPAP).
- Develop a Memorandum of Agreement with roles and responsibilities for Metrolinx, the City and TTC for this project.
- Work with Metrolinx to define next steps on subsequent phases of Relief Line (Northern and Western extensions)

# Fare Integration

# Fare Integration – Current State Assessment

- Metrolinx GTHA Fare Integration study is examining options for an integrated regional fare structure
- The City & TTC are examining the relationship between the current GO fare structure and City of Toronto, including:
  - Fare by distance and fairness to Toronto residents
  - Integration with local service
  - Lack of co-fare in Toronto



# Next Steps

# Next Steps

- Enter into cost-sharing discussions with Province of Ontario, Federal Government and other key partners for SmartTrack, Eglinton West LRT, and Scarborough Transit.
- City Manager will bring subsequent report with respect to status of negotiations with the Province of Ontario, Metrolinx, and Government of Canada on funding implications for Toronto transit expansion initiatives.
- Chief Planner & Executive Director, City Planning, will report in Q1 2017 on second phase of Toronto's Long Term Transit Network Plan

# Questions?