

Clause 5 in Report No. 10 of Committee of the Whole was adopted by the Council of The Regional Municipality of York at its meeting held on June 23, 2016 with the following additional recommendation:

3. Receipt of the memorandum from Daniel Kostopoulos, Commissioner of Transportation Services, dated June 22, 2016.

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Regional Express Rail Update

Committee of the Whole recommends adoption of the following recommendations contained in the report dated June 1, 2016 from the Commissioner of Transportation Services:

1. Metrolinx be requested to mitigate the impacts of Regional Express Rail service by addressing the gap between their Initial Business Case for Regional Express Rail and York Region's needs for grade separations, additional GO stations and parking charges.
2. The Regional Clerk circulate this report to Metrolinx, Ontario Ministry of Transportation and Clerks of the local municipalities.

Report dated June 1, 2016 from the Commissioner of Transportation Services now follows:

1. Recommendations

It is recommended that:

1. Metrolinx be requested to mitigate the impacts of Regional Express Rail service by addressing the gap between their Initial Business Case for Regional Express Rail and York Region's needs for grade separations, additional GO stations and parking charges.
2. The Regional Clerk circulate this report to Metrolinx, Ontario Ministry of Transportation and Clerks of the local municipalities.

2. Purpose

This report provides an update to Council on the Provincial Regional Express Rail (RER) Service Plan and associated staff activities as York Region's response to the RER Service Plan to be implemented by the Province over the next 10 years.

3. Background

In April 2015, the Province of Ontario committed \$16 billion to improving transit infrastructure in the Greater Toronto and Hamilton Area

On April 16, 2015, the Provincial government announced The Trillium Trust and Moving Ontario Forward. Moving Ontario Forward is a \$31.5 billion commitment over the next 10 years. Approximately \$16 billion of this is being allocated for transit projects in the Greater Toronto and Hamilton Area (GTHA), with the balance outside of the GTHA. To ensure every region across the province benefits fairly from Moving Ontario Forward, the Province is allocating funds to the GTHA while areas outside the GTHA will be allocated funding based on relative share of the provincial population, using census data from Statistics Canada.

Regional Express Rail service enhancements will provide more frequent and convenient travel options for residents and commuters

In the GTHA, The Trillium Trust and Moving Ontario Forward funds will allow the Province to accelerate service enhancements to the GO Transit network, including implementation of RER. Regional Express Rail will bring frequent, two-way, all-day electrified service to the Barrie and Stouffville GO rail corridors in York Region. On segments of the Barrie corridor between Aurora and Union Station and the Stouffville corridor between Unionville and Union Station, service will be improved to 15 minute frequency or better. More frequent peak period, peak direction service is planned on the expanded Richmond Hill corridor between Bloomington Road and Union Station as shown on Attachment 1.

This investment in transit by the Provincial government will help build a stronger economy, manage congestion on the Region's roads and improve quality of life by making it easier for residents, workers and visitors to York Region to reach their destinations. To implement RER, the Province, through Metrolinx, has developed a capital program to deliver the service concept by 2025.

While RER will significantly increase the north-south transportation system capacity in York Region and the connection to the City of Toronto, it places increased pressure on Regional transportation services to provide east-west capacity and connections. Continued investment by all levels of government is needed to ensure the delivery of an optimized and interconnected transportation system.

In September 2015, Council passed a motion to adopt staff recommendations as the Region's initial response to the Regional Express Rail Service Concept

Council endorsed York Region's Initial Response to Regional Express Rail Service Concept in September 2015 ([Clause 4, Report 13 of Committee of the Whole, September 24, 2015](#)). The previous report outlined the Province's commitment to GO Transit service improvements on the Barrie, Stouffville and Richmond Hill GO rail corridors within York Region, and staff recommendations on a suite of Regional initiatives to enable RER implementation over the next 10 years.

In March 2016, Metrolinx and Ontario Ministry of Transportation publicly released Initial Business Case for Regional Express Rail

Through the Initial Business Case, Metrolinx analyzed options for RER and identified a recommended approach to implement Regional Express Rail in the GTHA over the next ten years. In evaluating the conversion from a diesel-powered commuter rail service to an electrified, more frequent, all day RER service, the initial business case considered multiple aspects of the GO rail system including strategic impacts, financial costs, economic case and delivery and operations mechanisms.

The Initial Business Case outlines Metrolinx's recommended service plan and infrastructure requirements for each of the GO rail corridors within the RER program, including Barrie, Richmond Hill and Stouffville GO corridors in York Region. The service plan and infrastructure recommendations were based on an evaluation of various expansion and electrification scenarios. For each scenario, total transportation benefits were compared to the costs to implement RER, as outlined in Table 1.

The Initial Business Case is Metrolinx's initial scoping and assessment of the minimum infrastructure required to enable an electrified rapid transit service on GO rail corridors. It does not include all infrastructure required to mitigate the impacts of RER to the Regional transportation system or local communities. Ongoing analysis and assessment will further refine the program as it is advanced.

Table 1
Cost Benefit Evaluation

Transportation Benefits	Sources of Costs to Implement
<ul style="list-style-type: none"> • Value of travel time savings to transit and road users 	<ul style="list-style-type: none"> • Infrastructure
<ul style="list-style-type: none"> • Reduction in automobile operating costs 	<ul style="list-style-type: none"> • Electrification
<ul style="list-style-type: none"> • Safety benefits from reduced road accidents 	<ul style="list-style-type: none"> • New train vehicles
<ul style="list-style-type: none"> • Wider economic benefits 	<ul style="list-style-type: none"> • Parking and property acquisition
<ul style="list-style-type: none"> • Greenhouse gas reductions 	<ul style="list-style-type: none"> • Operating costs

4. Analysis and Options

On its own, Regional Express Rail is not a transit system, but rather, a high-order transit spine extending radially from Union Station that requires integration with many transportation initiatives for successful delivery

For Metrolinx to successfully deliver Regional Express Rail, they will need to do more than expand existing GO rail service levels. In York Region, RER will form an integral part of the transit spine network which is supported by a number of transportation infrastructure and service enhancements. These enhancements will consist of:

- Improvements to 19 existing level rail crossings on Regional roads that intersect with GO rail corridors
- Modifications to existing road overpass/underpass structures to support adding additional tracks and electrification infrastructure
- Modifications of up to 13 existing GO stations to accommodate increased ridership and alternative/improved access for local transit and active transportation modes
- Service plan and infrastructure enhancements for the YRT/Viva transit network to align with more frequent GO train service

- Up to 11 new additional GO stations and mobility hub development where GO rail lines meet other rapid transit lines

Metrolinx undertook an Initial Business Case evaluating levels of GO rail service and infrastructure changes required to enable the implementation of Regional Express Rail across the GTHA. York Region and its nine local municipalities have a vested interest in the initial business case recommendations, as RER is a critical component of the Region's Transportation Master Plan update to accommodate growth to 2041. Attachments 2 and 3 illustrate Metrolinx and York Region recommended improvements to the level crossings. The new additional GO stations are described in Attachments 4 and 5.

Outcomes of the Initial Business Case provide Metrolinx with evidence and rationale to proceed with implementation of Regional Express Rail

Metrolinx's Initial Business Case for Regional Express Rail examined five service plan and infrastructure scenarios across the GO rail network. These scenarios are described in Attachment 6.

Key findings from the Initial Business Case are summarized below:

- Scenario 5 – 10-Year Optimized was Metrolinx's recommended scenario with a benefit-cost ratio of 3:1, meaning the benefits are three times the cost incurred. On RER corridors within York Region, Scenario 5 will provide all-day, 15-minute electrified service to Aurora and Unionville, 30-minute service to Barrie and 20-minute service to Lincolnville during the peak period, and hourly electrified service to Barrie and Mount Joy during the off-peak. Peak period, peak direction, 15 minute diesel service will be provided to Richmond Hill. Detailed outcomes of the five scenarios, as applied to the Barrie, Stouffville and Richmond Hill rail corridors within York Region, are summarized in Attachment 7.
- Two-way, electrified service is not included in the initial implementation of the RER program on the Richmond Hill GO rail corridor. Metrolinx has indicated that flooding issues in the Don River Valley must be addressed and discussions must take place with Canadian National Railway Company (CN) for the portion of the corridor that operates on CN-owned tracks prior to delivering two-way, electrified RER service on the Richmond Hill corridor.
- No new stations were considered in the Initial Business Case. However, separate work is being undertaken in parallel by Metrolinx on the potential

addition of new stations on all GO rail corridors, including the Barrie, Richmond Hill and Stouffville lines in York Region.

- Station modifications at Aurora, King City, Maple, Rutherford, Lincolnville, Unionville and Milliken have been identified.
- Of the 180 level crossings across the GTHA operated by GO, 13 are identified for consideration for road/rail grade separation. Four of these are located in York Region at Rivermede Road, Rutherford Road, Langstaff Road and Steeles Avenue. However, Metrolinx indicated the exact number of grade separations for planning purposes is to be determined.
- Fare integration and parking charges were not considered in the Initial Business Case, though a fare integration study is underway and parking charges will be further explored by Metrolinx.

While the Initial Business Case provides validation for Metrolinx to proceed with RER, work should continue to address the misalignment between Metrolinx and York Region on key recommendations

There is consensus among Regional and local municipal staff that several of the Initial Business Case recommendations require further consideration by Metrolinx to align with the needs of the Region. Despite the many working groups and discussions underway, there has been no commitment from Metrolinx on when refinements to the Initial Business Case will be addressed. The number of road/rail grade separations proposed on GO rail corridors is inadequate to support population and employment growth forecasts to 2041 in the Region. Grade separations are required to accommodate the increase in train volumes/frequency and road traffic. Metrolinx's Initial Business Case recommends only four road/rail grade separation locations under the Regional Express Rail program in York Region.

Regional staff conducted analysis on 57 level crossings (24 Regional road crossings and 33 local road crossings) intersecting rail corridors in York Region and recommended that 29 level crossings require grade separation as part of the 2016 Transportation Master Plan update. Of those 29 level crossings identified, 19 are part of the Transit Optimization Program, where RER rail corridors intersect with Regional roads, while the remaining 10 are on non-RER rail corridors or lower prioritized road crossings. Analysis consisted of an extensive review of best practices in North America to develop evaluation criteria for identifying and prioritizing grade separation locations. Detailed evaluation criteria were previously presented to Council ([Clause 4, Report 13 of Committee of the Whole, September 24, 2015](#)). Locations exceeding the warrants and thresholds

are recommended for road/rail grade separation. Road/rail grade separations based on this analysis have been included in the update to the Transportation Master Plan.

After an initial review with Metrolinx staff, 10 grade separation locations on Regional roads are identified as high priority. At minimum, these grade separations are required to mitigate traffic and local transit impacts due to congestion at GO station access roads resulting from increased service on the Barrie and Stouffville GO Transit lines and increasing traffic on Regional roads.

Two-way, electrified service on the Richmond Hill GO rail corridor is not included in the Regional Express Rail program due to physical and rail ownership constraints. However, planned GO rail expansion and service increases to 15-minute frequency with diesel trains will impact vehicle and train traffic, triggering the need to grade separate locations on this corridor. Consideration for potential grade separation locations should be part of the Richmond Hill GO rail service expansion program.

Ongoing discussion with Metrolinx is required to mitigate impacts to the Regional transportation network and GO rail demand

There are ongoing discussions with Metrolinx and local municipalities about the need for additional stations to accommodate increased train travellers and provide convenient access to Regional Express Rail service. The Initial Business Case did not include new station locations on the Barrie and Stouffville GO lines. The Region and local municipalities recommend GO stations be constructed on the Barrie GO line at Mulock Drive, Concord (Highway 7), Kirby Road/Keele Street and 15th Sideroad/Bathurst Street. On the Stouffville GO line, new stations are recommended at Denison Street and at Major Mackenzie Drive, and on the Richmond Hill line at John Street/Green Lane, 16th Avenue and 19th Avenue. With the exception of the proposed station located at Denison Street, all above-noted GO station locations are included in the Region's 2016 Transportation Master Plan update. The 2016 Transportation Master Plan update also proposes a new GO station to be located at 14th Avenue on the Stouffville GO line in the City of Markham.

Metrolinx is strongly encouraged to further explore the introduction of parking charges to encourage alternative mode access at GO stations, such as local transit, active transportation and ride-sharing. While the Initial Business Case did not consider parking charges, Metrolinx has identified that parking charges could fund approximately \$4 billion of new infrastructure. Metrolinx is developing a plan to address GO station parking and access requirements, and has solicited feedback from the Region and local municipalities on the Barrie, Stouffville and

Richmond Hill GO corridors. Staff continues to work with Metrolinx on development of their GO station parking and access strategy to support greater use of transit and active transportation modes within the Region.

The Region has identified a number of transportation projects that will meet the objectives of the Transportation Master Plan and will optimize the Province's investment in Regional Express Rail. Grade separating level road/rail crossings that exceed warrants and thresholds are an integral part of developing a road network fit for the future. Grade separations located at prioritized locations will allow the road and transit network to continue to operate safely and efficiently. World class transit systems integrate higher-order transit and local transit services conveniently and seamlessly.

Additional GO station locations that provide convenient access to Regional Express Rail service will promote ridership on both RER and local transit. Improving alternative mode split at GO stations requires a holistic approach that includes promoting and prioritizing local transit, active transportation and ride-sharing modes in addition to de-incentivizing the current park and ride modal trend. For RER to be successful in York Region, it is extremely important that Metrolinx fully consider the impacts on the road and transit network and the needs of the local communities.

Progress is being made on staff recommendations in response to the Regional Express Rail service concept reported to Council in September 2015

In September 2015, Transportation Services staff made 11 recommendations requiring action to enable successful delivery of Regional Express Rail service in York Region over the next 10 years ([Clause 4, Report 13 of Committee of the Whole, September 24, 2015](#)). In collaboration with Metrolinx and local municipal staff, work is progressing steadily on each recommendation.

Attachment 8 summarizes previous recommendations and provides a status update on activities completed to-date.

Transportation Services developed the Transit Optimization Program in February 2016

The Transit Optimization Program is a York Region initiative to ensure the Region's transportation system aligns with and supports Metrolinx's implementation of the Regional Express Rail program over the next 10 years. The Transit Optimization Program includes road network improvements and transit upgrades to integrate with RER service. Better integrated local and higher-order transit services will provide transit users with a more seamless and

convenient travel experience, in turn fostering RER ridership. Road enhancement projects will enable forecasted RER ridership gains to be realized, as well as mitigate road congestion and travel time delays in the vicinity of GO stations.

In York Region, the introduction of Regional Express Rail service will increase the number of trains traversing the Barrie and Stouffville GO rail corridors. As many of the rail crossings intersect the Regional road network at grade, it is anticipated that more frequent train service will have significant impacts on road capacity and operation. The increase in GO Transit ridership will also increase demand for access into and out of stations.

The Transit Optimization Program will deliver a suite of projects to enhance transit and mitigate potential adverse impacts on road network capacity and operation

Transit enhancements will integrate York Region Transit (YRT) and Viva transit services with Regional Express Rail and include:

- Implementing the Frequent Transit Network to provide 15-minute or better YRT/Viva transit service to and from GO stations in alignment with RER service levels
- Augmenting the YRT/Viva fleet with rolling stock
- Building a southeast transit facility to operate, maintain and store expanded YRT/Viva fleet

A portfolio of up to 32 road network improvement projects, including 19 grade separation projects and 13 road widening projects incorporating station access improvements, has been developed

Grade separation of level crossings will enable electrified train service to operate at high speeds along the length of the rail corridor, while allowing for the continued efficient operation of Regional roads. Road widening to accommodate Bus Rapid Transit/High Occupancy Vehicle lanes and implementation of active transportation linkages will better balance demand on the road and transit networks. Improved access/egress to GO stations will encourage multi-modal use by making the last mile work.

Staff are working to prioritize road and transit improvement projects and exploring opportunities for alternate sources of funding

The Transit Optimization Program will assist the Region and local municipalities with project prioritization to align with Metrolinx's Regional Express Rail delivery. The Region is also working with Metrolinx directly and applying for Federal funding to help fund the projects.

Investment in the Transit Optimization Program will enable the Region to advance the delivery of capital road projects complementing RER. As service on the Barrie and Stouffville GO Transit lines increases, Regional transit improvements will increase capacity on Regional and local roads.

A master agreement with Metrolinx is being discussed to identify allocation of the costs of constructing road/rail grade separations

Discussions are progressing with Metrolinx on a master agreement to share the cost of road/rail grade separation projects on Regional Express Rail corridors. Metrolinx and the Region have agreed to use the Canadian Transportation Agency guidelines for cost apportionment as a general guide to share construction costs of grade separations. Details of cost-sharing were previously outlined ([Clause 4, Report 13 of Committee of the Whole, September 24, 2015](#)). A report is anticipated to be presented to Council in fall 2016 summarizing a master agreement with Metrolinx.

Link to key Council-approved plans

This report links to the following Council-approved plans and policies:

Vision 2051

- Interconnected Systems for Mobility
- Livable Cities and Complete Communities
- Living Sustainably

Regional Official Plan

- To create an active transportation system and programs that encourage walking, cycling and the use of transit
- To provide transit service that is convenient and accessible to all residents and workers of York Region

2015 to 2019 Strategic Plan

- Strengthen the Region's economy
- Manage Environmentally Sustainable Growth
- Provide Responsive and Efficient Public Service

5. Financial Implications

Introduction of Regional Express Rail to York Region has the potential to have a significant financial impact to York Region capital and operations budgets.

Following the evaluation of the road/rail grade separations, including prioritization, Initial Business Case and funding opportunities, staff will review the grade separation locations in conjunction with policy considerations and proposed road/transit networks being developed as part of the Transportation Master Plan update. Staff will report back on the financial implications once the impact has been assessed in greater detail.

Alternative sources of funding are being explored to build the suite of transportation services required to support Regional Express Rail

It is estimated that approximately \$1 billion will be required to deliver projects within the four categories in the Transit Optimization Program (grade separations, road widenings, GO station access/egress and YRT/Viva transit enhancements). Funds from development charges and Regional tax levy are not sufficient to support this level of infrastructure spending. Alternative sources of funding are being explored, including cost-sharing arrangements with the Province and using the new Federal Building Canada Fund.

A Regional cost benefit analysis has been developed to support an application to the New Building Canada Fund for Transit Optimization Program funding

A cost benefit analysis has been prepared by the Region for the Transit Optimization Program. The objective of the cost benefit analysis is to evaluate and determine which Transit Optimization Program projects warrant pursuing federal funding. Projects with a strong case for proceeding will be incorporated into the application to the federal government's New Building Canada Fund.

Staff is currently reviewing the draft cost benefit analysis. The business case approach, as adopted by Metrolinx, was used in evaluating Transit Optimization Program projects. This framework evaluated the strategic, economic, financial and delivery and operations cases. Initial findings suggest there is a subset of road/rail grade separation projects with a strong case for proceeding based on criteria such as:

- Evaluation and comparison of delivery within the Regional Express Rail timeframe
- Traffic impacts at level crossings
- Access times to stations for local transit and cars
- Reductions to travel times
- Accidents
- Capital, operating and maintenance costs
- Benefits
- Risks associated with the project management and delivery

Staff will continue to develop and finalize the cost benefit analysis to identify the projects to move forward within the Transit Optimization Program.

6. Local Municipal Impact

Introduction of Regional Express Rail will benefit all of York Region and local municipalities. The significant capacity provided by the expanded GO Transit rail service will increase Regional transit ridership and help York Region to accommodate anticipated growth to 2041.

Continued collaboration between all levels of government supports successful delivery of the Regional Express Rail program

York Region, YRRTC and Metrolinx staff has formed a Regional Express Rail Working Group to address implementation of RER. This group aims to collaboratively address key technical components of project delivery and anticipate challenges that may arise during implementation.

In addition, a Municipal Working Group has been established by York Region to facilitate communication and enhanced coordination as the RER program advances. This Group includes representation by works and planning Commissioners and senior staff from all nine local municipalities. Five meetings of the Municipal Working Group have been held to date. It is anticipated that staff reports will be sent to respective Councils and YRRTC Board as required.

A communication and public engagement strategy has been implemented for the Regional Express Rail program

Staff from York Region/YRRTC and Metrolinx have met to discuss the public engagement strategy required to ensure residents and businesses are consulted and kept informed throughout Regional Express Rail implementation.

In collaboration with York Region/YRRTC, Metrolinx staff committed to developing a communication plan and public engagement strategy. It is imperative that full consultation take place on all aspects that affect the Region. Public Information Sessions led by Metrolinx were held at various locations throughout February and March 2016. Four of these sessions were held in York Region in Aurora, Markham, Whitchurch-Stouffville and Vaughan. Staff from York Region and YRRTC presented information to the public about the Transportation Master Plan update, Viva bus rapid transit program and the Region's coordination efforts to support Regional Express Rail delivery.

7. Conclusion

Introduction of Regional Express Rail will transform transit in the GTHA, providing two enhanced high-order rapid transit spines for the Regional transit system. Metrolinx reported that RER will attract ridership growth from people who currently travel by car on GTHA roadways and will enable continued economic growth outside Toronto at nodes across the region. The recommended RER scenario is forecast to grow annual ridership by two and one-half times between 2014 and 2029.

Regional Express Rail Update

York Region will benefit significantly from Regional Express Rail. The increase in north/south capacity along the Barrie, Stouffville and Richmond Hill rail corridors will complement existing YRT/Viva services and improve utilization and performance of the Viva bus rapid transit system. It will also reduce crowding and increase operating efficiency of other transit systems, encourage more efficient urban development and make it feasible to travel across York Region and the GTHA without a car.

Staff will continue to coordinate with local municipalities and work with Metrolinx to advance the Regional Express Rail program

For more information on this report, please contact Stephen Collins, Director Infrastructure Management and Project Management Office, at ext. 75949.

The Senior Management Group has reviewed this report.

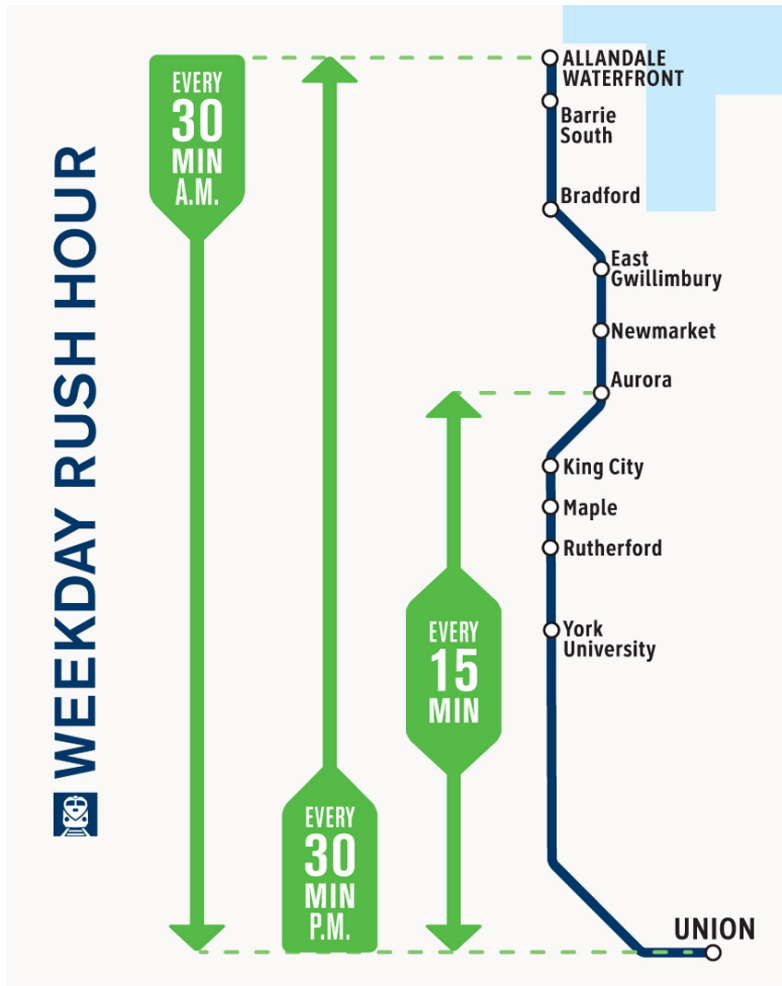
June 1, 2016

Attachments (9)

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Accessible formats or communication supports are available upon request

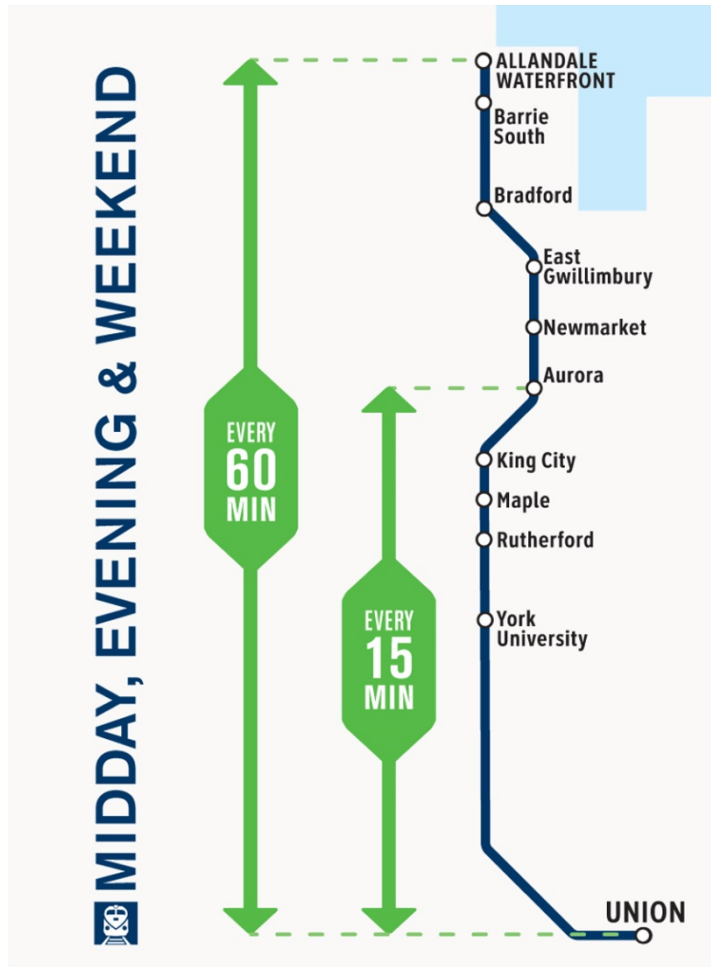
Barrie Line



Weekday rush hour

- 15-minute, two-way service between Aurora and Union Station
- 30-minute service from Allandale Waterfront to Union Station in the morning and from Union Station to Allandale Waterfront in the afternoon/evening

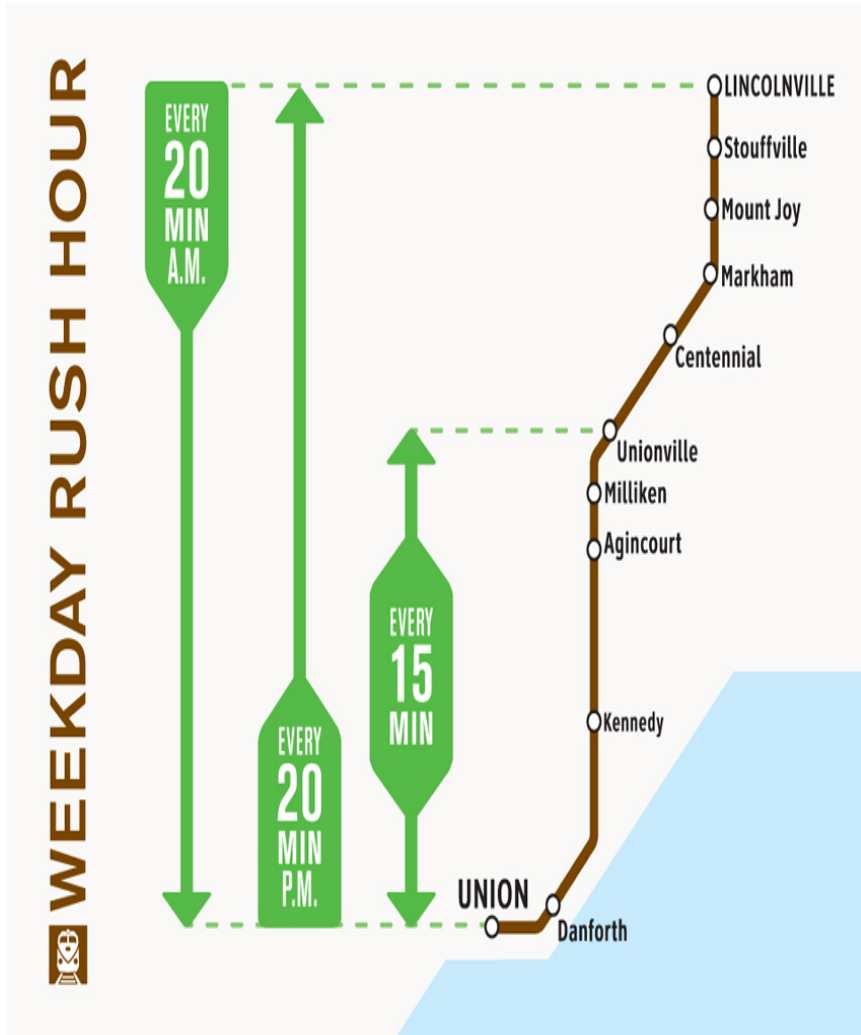
Barrie Line



Midday, evening and weekend

- 15-minute, two-way service between Aurora and Union Station
- 60-minute, two-way service between Allandale Waterfront and Union Station

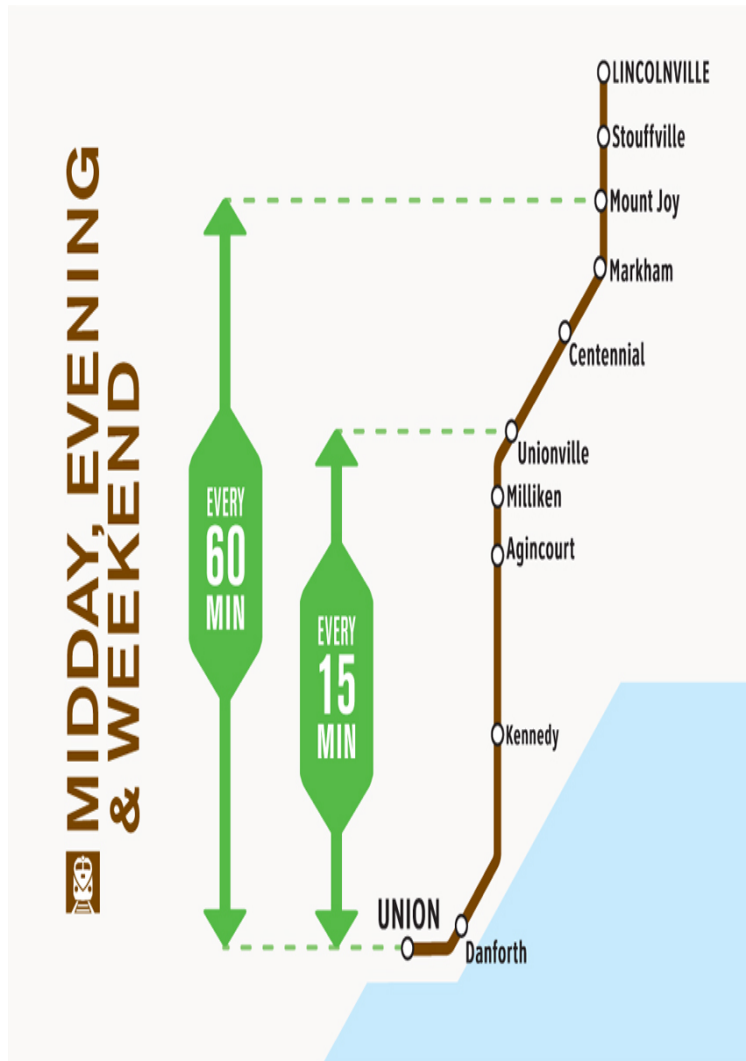
Stouffville Line



Weekday rush hour

- 15-minute, two-way service between Unionville and Union Station
- 20-minute service from Lincolnville to Union Station in the morning and from Union Station to Lincolnville in the afternoon/evening

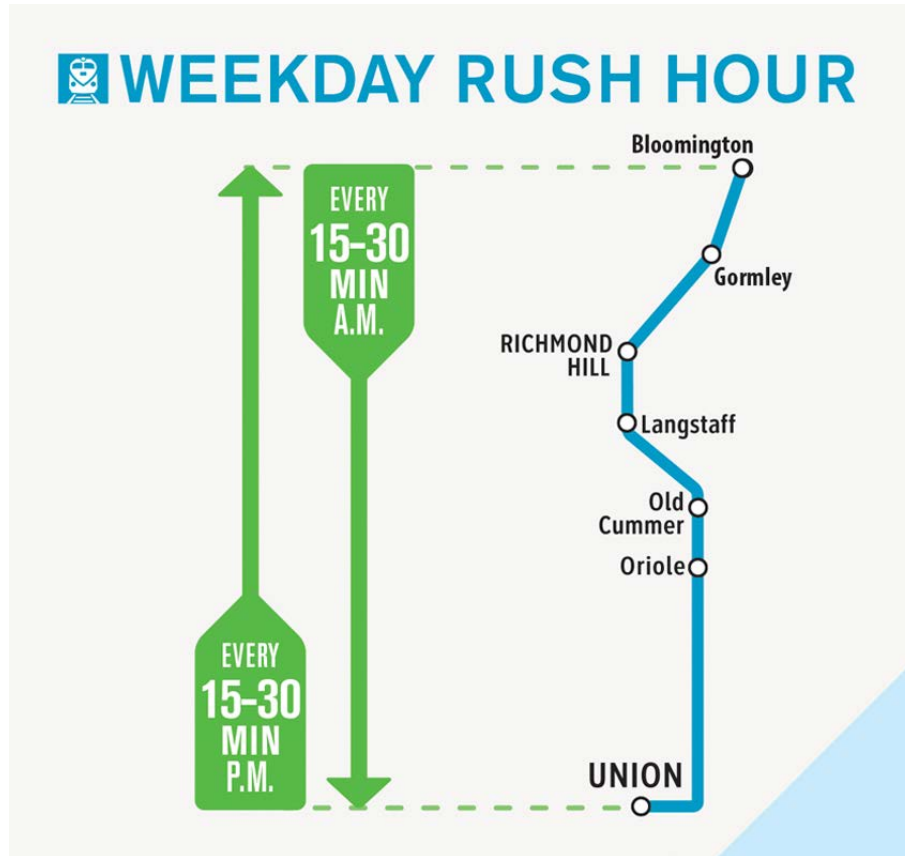
Stouffville Line



Midday, evening and weekend

- 15-minute, two-way service between Unionville and Union Station
- 60-minute, two-way service between Mount Joy and Union Station

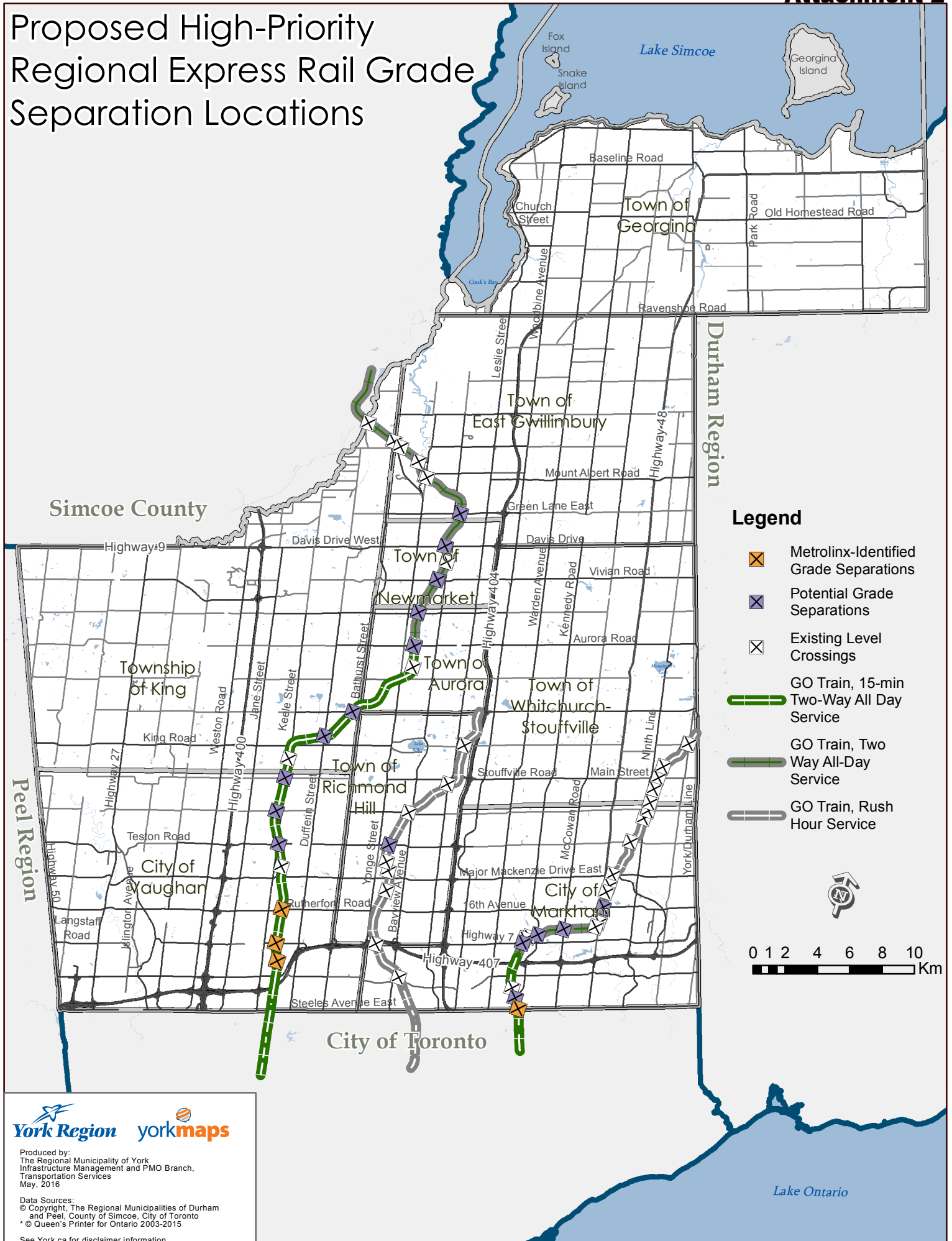
Richmond Hill Line









Weekday rush hour

- Peak period, peak direction service every 15-30 minutes between Bloomington Road and Union Station

Proposed High-Priority Regional Express Rail Grade Separation Locations



Legend

-  Metrolinx-Identified Grade Separations
-  Potential Grade Separations
-  Existing Level Crossings
-  GO Train, 15-min Two-Way All Day Service
-  GO Train, Two Way All-Day Service
-  GO Train, Rush Hour Service

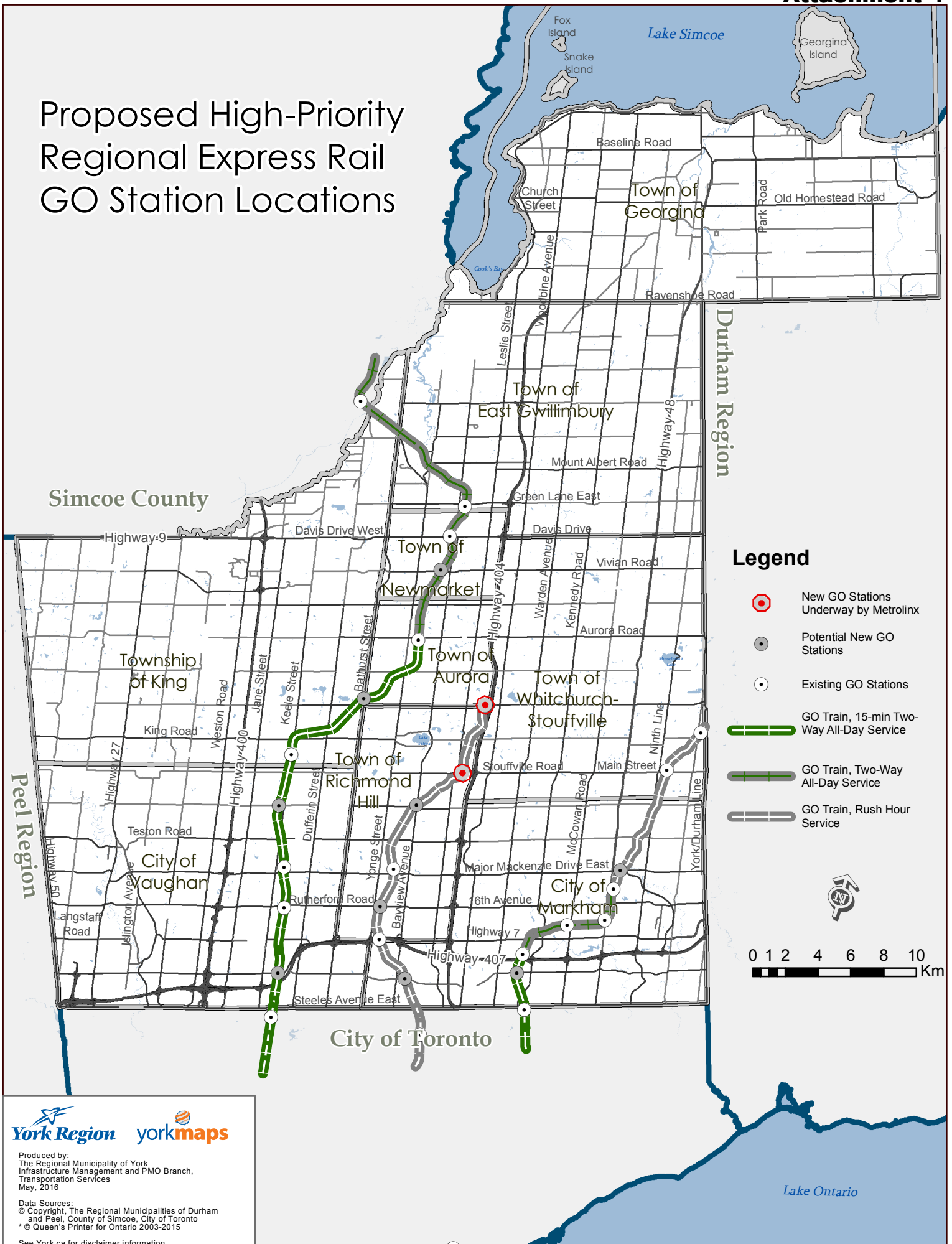


Proposed High-Priority Regional Express Rail Grade Separation Locations





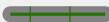

Level Crossing Location				Potential Grade Separation Identified by York Region	Grade Separation Identified by Metrolinx
Line	Name	Location	Jurisdiction		
Barrie Line	Engelhard Dr	West of Industrial Parkway South	Aurora		
Barrie Line	Centre St	North of Wellington	Aurora		
Barrie Line	Bradford St	East of Holland Landing Rd	East Gwillimbury		
Barrie Line	Oriole Dr	East of Hwy 11	East Gwillimbury		
Barrie Line	Chapman St	East of Yonge St	East Gwillimbury		
Barrie Line	Toll Rd	East of Hwy 11	East Gwillimbury		
Barrie Line	Station Rd	South of King Road	King		
Barrie Line	Water St	North of Mulock	Newmarket		
Barrie Line	Timothy St	South of Davis	Newmarket		
Barrie Line	Langstaff Rd	East of Keele St	Regional	√	√
Barrie Line	Rutherford Rd	East of Keele St	Regional	√	√
Barrie Line	Teston Rd	East of Keele St	Regional	√	
Barrie Line	Kirby Rd	West of Keele St	Vaughan	√	
Barrie Line	King Vaughan Rd	West of Keele St	Vaughan	√	
Barrie Line	Dufferin St	North of King Rd	Regional	√	
Barrie Line	15th Sdrd	West of Bathurst St	Regional	√	
Barrie Line	Wellington St	East of Yonge St	Regional	√	
Barrie Line	St John's Sdrd	East of Yonge St	Regional	√	
Barrie Line	Mulock Dr	West of Bayview Ave	Regional	√	
Barrie Line	Davis Dr	Between Yonge St and Leslie St	Regional	√	
Barrie Line	Green Lane	West of Leslie St	Regional	√	
Barrie Line	Bathurst St	North of Holland Landing Rd	Regional		
Barrie Line	Yonge St	North of Holland Landing Rd	Regional		
Barrie Line	McNaughton Rd	East of Keele	Vaughan		
Barrie Line	Rivermede Rd	West of Dufferin	Vaughan		√
Richmond Hill Line	Green Ln	East of Bayview	Markham		
Richmond Hill Line	Langstaff Rd East	East of Yonge St	Markham		
Richmond Hill Line	Elgin Mills Rd East	East of Yonge St	Regional	√	
Richmond Hill Line	Leslie Street	South of Stouffville Road	Regional		
Richmond Hill Line	19th Avenue	West of Bayview Avenue	Regional		

Level Crossing Location				Potential Grade Separation Identified by York Region	Grade Separation Identified by Metrolinx
Line	Name	Location	Jurisdiction		
Richmond Hill Line	Weldrick Rd East	East of Yonge St	Richmond Hill		
Richmond Hill Line	Crosby Ave	East of Yonge St	Richmond Hill		
Richmond Hill Line	Centre St East	East of Yonge St	Richmond Hill		
Richmond Hill Line	Bethesda sdrd	East of Leslie St	Richmond Hill		
Stouffville Line	Denison St	West of Kennedy Rd	Markham		
Stouffville Line	Main Markham St	North of Hwy 7	Markham		
Stouffville Line	Main Unionville St	North of Hwy 7	Markham		
Stouffville Line	Snider Dr	West of Markham Main St	Markham		
Stouffville Line	Bur Oak Ave	East of Markham Rd	Markham		
Stouffville Line	Eureka St	North of Hwy 7	Markham		
Stouffville Line	Castlemore Ave	East of Markham Rd	Markham		
Stouffville Line	19th Ave	East of Ninth Line	Markham		
Stouffville Line	Elgin Mills Rd East	East of Markham Rd	Markham		
Stouffville Line	Steeles Ave East	East of Kennedy Rd	Toronto	√	√
Stouffville Line	Kennedy Rd (south)	North of Steeles Ave	Regional	√	
Stouffville Line	Hwy 7	West of Kennedy Rd	Regional	√	
Stouffville Line	Kennedy Rd (north)	North of Hwy #7	Regional	√	
Stouffville Line	McCowan Rd	North of Hwy #7	Regional	√	
Stouffville Line	16th Ave	East of Markham Rd	Regional	√	
Stouffville Line	9th Line	North of Elgin Mills	Regional		
Stouffville Line	Major Mackenzie	East of Hwy 48	Regional		
Stouffville Line	Main St	East of Ninth Line	Whitchurch-Stouffville		
Stouffville Line	Hoover Park Dr	East of Ninth Line	Whitchurch-Stouffville		
Stouffville Line	Millard St	East of Ninth Line	Whitchurch-Stouffville		
Stouffville Line	Reeves Way Blvd	North of 19th Ave	Whitchurch-Stouffville		
Stouffville Line	Tenth Line	North of Bethesda Sdrd	Whitchurch-Stouffville		
Stouffville Line	Bethesda Rd	West of Tenth Line	Whitchurch-Stouffville		
Total Count				19	4

Proposed High-Priority Regional Express Rail GO Station Locations



Legend

-  New GO Stations Underway by Metrolinx
-  Potential New GO Stations
-  Existing GO Stations
-  GO Train, 15-min Two-Way All-Day Service
-  GO Train, Two-Way All-Day Service
-  GO Train, Rush Hour Service



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Proposed High-Priority Regional Express Rail GO Station Locations

GO Station Location				Potential New GO Stations Identified by York Region	New GO Stations Identified by Metrolinx	New GO Stations Underway
Line	Name	Location	Jurisdiction			
Barrie Line	Concord	Highway 7 east of Keele Street	Vaughan	√		
Barrie Line	Kirby	Kirby at Keele Street	Vaughan	√		
Barrie Line	15th Sideroad	15th Sideroad and Bathurst Street	Aurora	√		
Barrie Line	Mulock	Mulock Drive west of Bayview Avenue	Newmarket	√		
Richmond Hill	John St / Green Lane	John Street east of Bayview Avenue	Markham	√		
Richmond Hill	16th Avenue	16th Avenue east of Yonge Street	Richmond Hill	√		
Richmond Hill	19th Avenue	19th Avenue at Bayview	Richmond Hill	√		
Richmond Hill	Gormley	Stouffville Road east of Leslie Street	Richmond Hill	√		√
Richmond Hill	Bloomington	Bloomington Road west of Highway 404	Richmond Hill	√		√
Stouffville Line	14th Avenue	14th Avenue west of Kennedy Road	Markham	√		
Stouffville Line	Major Mackenzie	Major Mackenzie Drive east of Markham Road	Markham	√		
Total Count				11	0	2

Table 2

Regional Express Rail Service Plan and Infrastructure Scenarios

Scenario	Description
1. Do Minimum (Base Case)	Scenario is defined as the minimum investment, with peak trains added to match growth in peak demand, but with no enhancement of off-peak services and no electrification. Some investment in station and layover capacity is required. This is the base case scenario against which other scenarios were measured to determine relative performance
2. Two-Way, All-Day (2WAD)	Scenario expands hourly 2WAD services to Hamilton, Meadowvale, Kitchener, Barrie, Richmond Hill and Unionville. However, there is no electrification. In addition to the Scenario 1 investment, extensive double tracking and station reconstruction would be required, as well as construction of road-rail grade separations and rail-rail grade separation of the Davenport and Doncaster intersections.
3. 10-Year Plan	<p>In addition to Scenario 1, the following are included:</p> <ul style="list-style-type: none"> • Electrified RER on Lakeshore from Aldershot to Oshawa, with 15-minute service • Frequent, all-day diesel service to Mt. Pleasant, Aurora and Unionville • Hourly services from Hamilton, express from Oakville • Hourly service from Barrie and Mt. Joy
4. Full Build (Beyond 10-Year Plan)	Scenario represents a fully built-out RER service on all corridors and includes electrified RER with 15-minute service to Aldershot, Milton, Mt. Pleasant, East Gwillimbury, Richmond Hill, Unionville and Oshawa and hourly express service to Hamilton, Kitchener, Barrie and Mt. Joy
5. 10-Year Plan Optimized (METROLINX RECOMMENDED OPTION)	Scenario includes all-day, 15-minute electrified service to Aldershot, Bramalea, Aurora, Unionville and Oshawa, with hourly services to Hamilton (diesel), Barrie (electrified) and Mount Joy (electrified). Milton and Richmond Hill would remain peak-only diesel corridors.

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Table 3

GO Rail Corridor Service and Infrastructure Evaluation Outcomes

GO Corridor	Scenario 1 Do Minimum	Scenario 2 2WAD	Scenario 3 10-Year Plan	Scenario 4 Full Build	Scenario 5 Optimized METROLINX RECOMMENDED OPTION
Barrie					
Service Plan	<ul style="list-style-type: none"> No service during off peak. contra-peak & weekends Same service during peak period (5 trains Allendale – Union & 2 trains Maple – Union) 	<ul style="list-style-type: none"> 60 minute service during off peak. contra-peak & weekends 1 express train to Aurora added to Scenario 1 peak periods 	<ul style="list-style-type: none"> 60 minute service to Allendale & 20 min service to Aurora during off peak. contra-peak & weekends 15 minute service to Aurora added to Scenario 1 peak periods 	<ul style="list-style-type: none"> 60 minute, electrified service to Allendale & 15 min electrified service to East Gwillimbury during off peak. contra-peak & weekends 15 minute electrified service to East Gwillimbury & 5 express trains from Aurora added to Scenario 1 peak periods 	<ul style="list-style-type: none"> 60 minute, electrified service to Allendale & 15 min electrified service to Aurora during off peak. contra-peak & weekends 15 minute electrified service to Aurora & 5 express trains from Aurora added to Scenario 1 peak periods
Infrastructure	<ul style="list-style-type: none"> Double track expansion to south of Rutherford 	<ul style="list-style-type: none"> Double track to Aurora 3 grade separations: Rivermede, Rutherford, Langstaff Station modifications at Aurora, King City, Maple, Rutherford 	<ul style="list-style-type: none"> Same infrastructure as Scenario 2 	<ul style="list-style-type: none"> Electrification between Allendale – Union Double track to East Gwillimbury Same infrastructure as Scenario 2 	<ul style="list-style-type: none"> Electrification between Allendale - Union Double track to Aurora Same infrastructure as Scenario 2
Stouffville					
Service Plan	<ul style="list-style-type: none"> No service during off peak. contra-peak & weekends Same service during peak period (7 trains) 	<ul style="list-style-type: none"> 60 minute service to Mount Joy during off peak Same service during peak period as Scenario 1 	<ul style="list-style-type: none"> 20 minute service to Unionville during off peak. contra-peak & weekends 60 minute service to Mount Joy during off peak 	<ul style="list-style-type: none"> 15 minute electrified service to Unionville during off peak. contra-peak & weekends 60 minute electrified service to Mount Joy 	<ul style="list-style-type: none"> Same service plan as Scenario 4

GO Corridor	Scenario 1 Do Minimum	Scenario 2 2WAD	Scenario 3 10-Year Plan	Scenario 4 Full Build	Scenario 5 Optimized METROLINX RECOMMENDED OPTION
			<ul style="list-style-type: none"> 30 minute service to Lincolnville and 15 min service to Unionville during peak period 	<ul style="list-style-type: none"> during off peak 30 minute electrified service to Lincolnville and 15 min service to Unionville during peak period 	
Infrastructure	<ul style="list-style-type: none"> Station modifications at Lincolnville 	<ul style="list-style-type: none"> Double track to Unionville Grade separation at Steeles Station modifications at Unionville, Milliken 1 turning track at Unionville Same infrastructure at Scenario 1 	<ul style="list-style-type: none"> Same infrastructure as Scenario 2 	<ul style="list-style-type: none"> Electrification between Lincolnville - Union Same infrastructure as Scenario 2 	<ul style="list-style-type: none"> Same infrastructure as Scenario 4
Richmond Hill					
Service Plan	<ul style="list-style-type: none"> No service during off peak. contra-peak & weekend 1 train added during peak period 	<ul style="list-style-type: none"> 60 minute service to Richmond Hill during off peak. contra-peak & weekends 3 trains added during peak period 	<ul style="list-style-type: none"> Same service plan as Scenario 1 	<ul style="list-style-type: none"> 15 minute, electrified service to Richmond Hill during off peak. contra-peak & weekends 15 minute electrified service to Bloomington during peak periods 	<ul style="list-style-type: none"> Same service plan as Scenario 1
Infrastructure	<ul style="list-style-type: none"> No additional infrastructure or modifications 	<ul style="list-style-type: none"> Layover at Richmond Hill (2 new tracks) 	<ul style="list-style-type: none"> Same infrastructure as Scenario 1 	<ul style="list-style-type: none"> Electrification between Bloomington - Union Double track to Langstaff Station modifications at Langstaff, Richmond Hill 	<ul style="list-style-type: none"> Same infrastructure as Scenario 1

GO Corridor	Scenario 1 Do Minimum	Scenario 2 2WAD	Scenario 3 10-Year Plan	Scenario 4 Full Build	Scenario 5 Optimized METROLINX RECOMMENDED OPTION
				<ul style="list-style-type: none">• Same infrastructure at Scenario 2	

Table 4

Status of Staff Recommendations in York Region’s Initial Response to RER Service Concept
(Endorsed in Clause 4, Report No. 13 of Committee of the Whole, September 24, 2015)

Recommendation	Status
<p>1. Prioritize grade separations across the Regional network</p>	<ul style="list-style-type: none"> • Together, York Region and Metrolinx have developed an initial list of high priority grade separations based on transportation industry standards and best practices in North America. • Staff are engaging stakeholders to complete a contextual review of the prioritized grade separations to reflect the Region’s Centres and Corridors strategy. • Development of a master agreement with Metrolinx to apportion grade separation costs between the Province and the Region is underway. A report will be brought to Council in September, 2016.
<p>2. Identify how public/resident impacts from whistle blowing will be addressed</p>	<ul style="list-style-type: none"> • Staff are working with local municipalities to support requests for local municipal anti-whistling bylaws at railway crossings of Regional Roads, as per criteria outlined in the Regional policy. • The City of Markham and the Town of Whitchurch-Stouffville have taken steps to implement an anti-whistling bylaw. The other local municipalities have not yet approached the Region about anti-whistling measures. • Markham has completed a safety audit which is under review with the Region. A terms of reference to implement whistle cessation measures is underway and a tri-party cost agreement with York Region and Metrolinx has been drafted. Markham plans to complete public consultations in the summer of 2016, design by the end of 2016 and construction is planned for 2017-2018. • The Town of Whitchurch-Stouffville has initiated a safety audit.
<p>3. Advance the completion and implementation of intensification policies for GO station areas</p>	<ul style="list-style-type: none"> • In Vaughan, a new secondary plan for Block 27 in the Keele Street/Teston Road corridor has been initiated. The secondary plan builds around the proposed potential new GO Station north of Teston Road, west of Keele Street. Regional staff are working closely with the City of Vaughan to ensure policies that encourage intensification opportunities for residential, commercial and employment uses around the new GO Station area are included in the Secondary Plan in accordance with the intensification goals of the Regional Official Plan 2010 (Policies 5.4.31 and 5.4.32). • Through the approved Newmarket Urban Centres Secondary Plan (under appeal), Regional staff worked with the Town of Newmarket to include the policies that support the intensification opportunities for residential, commercial and employment uses in the secondary plan around the Newmarket GO Station. Specific policy has been included in the Secondary Plan that encourages Metrolinx to partner with the Region, the Town and other stakeholders to prepare a Mobility Hub Station Area Plan as this area is an intersection of two rapid transit lines (Viva Transitway and GO Transit). A Mobility Hub Station Area will allow opportunities for higher degree of mixed uses to maximize the land use potential.

Recommendation	Status
<p>4. Explore opportunities to maximize accessibility and advance construction of new stations and redevelopment of existing stations</p>	<ul style="list-style-type: none"> • Discussions are in progress with Markham and Metrolinx to consider a new station at Denison in preference to the proposed 14th Avenue location. • As part of the EA for Steeles Avenue, staff are working with Markham, Toronto and Metrolinx to include a connection to Milliken GO station from the north side of Steeles. • Staff are working with the local municipalities to advance discussions with Metrolinx to consider new station locations at Mulock in Newmarket and Concord and Kirby in Vaughan.
<p>5. Collaborate with Metrolinx and the local municipalities on the new station access strategy, incorporating the Region's commuter parking strategy</p>	<ul style="list-style-type: none"> • Completed review and feedback to Metrolinx on the phase 1 GO Rail Parking and Access Plan Update. Staff are continuing to work collaboratively with Metrolinx and the local municipalities on developing phase 2 of this plan. • Commuter parking management is a key objective of the updated Transportation Master Plan. The Region will partner with external agencies and the private sector to develop a strategy for the transportation network which enables the travel needs of residents in the future.
<p>6. Request Metrolinx develop new/modify existing GO stations with separate access for YRT/Viva and other transit providers</p>	<ul style="list-style-type: none"> • Staff are working with Metrolinx and Vaughan to incorporate separate access for YRT/Viva and local transit as part of the redevelopment at Rutherford station. • Discussions are underway with Metrolinx and the local municipalities to design separate YRT/Viva and transit access at new stations at Maple, Gormley and Bloomington.
<p>7. Work with Metrolinx and local municipal staff to develop an integrated station access strategy using active transportation modes</p>	<ul style="list-style-type: none"> • Strategies for integrating active transportation modes have been laid out in the update to the Transportation Master Plan. • Opportunities to increase transit, cycling, walking and last mile connections to the GO rail network have been shared with Metrolinx and the local municipalities through consultations on the Regional Transportation Plan Review and the GO Rail Parking and Access Plan Update
<p>8. Request Metrolinx and local municipal staff participate in a study to integrate recommendations for off-station parking into expansion programs</p>	<ul style="list-style-type: none"> • Transportation Services and YRT/Viva are participating in a joint study lead by YRRTC to examine park n' ride facilities for Viva users. Draft findings indicate there is demand for commuter parking facilities in urban areas. The market value of land is cost-prohibitive, making it difficult to sustain this approach. Alternative funding options are being explored, such as parking-related charges, to assist with offsetting land costs and modifying "drive and park" behavior, • Staff continue to investigate opportunities for residents to park their vehicles on the fringes of urban area and access different modes of travel for part of their trips, such as transit or ride-sharing. Options under consideration include a network of satellite parking lots served by express shuttle buses and new services such as Uber, dial-a-ride and car-share services.

Recommendation	Status
<p>9. Work collaboratively with Metrolinx to support more frequent and expanded service with the delivery of RER</p>	<ul style="list-style-type: none"> • The YRT/Viva 5 Year Strategic Plan identifies implementing the Frequent Transit Network (FTN) to deliver more frequent, all day service along key urban corridors within the Region. By 2020, the FTN will align service frequencies with the RER network and connections to GO stations. • The FTN is being rolled out in phases, initially with 15 minute service during rush hours on conventional transit base routes, followed by 15 minute service between 6 am – 10 pm, seven days a week. YRT/Viva Annual Service plans identify routes to have service frequency updates as part of the FTN for the upcoming year. Once all routes identified in the FTN are operating at a 15 minute or better frequency during the rush hours, service frequency increases will be implemented during the non-rush hours to complete the FTN initiative.
<p>10. Pursue Fare Integration as an operational tool to increase transit ridership while maintaining the existing Revenue to Cost ratio</p>	<ul style="list-style-type: none"> • Metrolinx is conducting a fare integration study to discuss fare and service options for the GTHA between all municipal transit service providers. YRT/Viva continue to work with Metrolinx and other GTHA transit service providers on an integrated fare structure that will leverage the Presto system. Three fare and service integration options have been identified to be analyzed as part of the work to be completed by Metrolinx.
<p>11. Work with Metrolinx to advance Preliminary Engineering for the Yonge Subway Extension</p>	<ul style="list-style-type: none"> • Regional leadership and staff continue to actively endorse the value and need for the Yonge Subway Extension to Richmond Hill. However, planned service upgrades and station expansion on the Richmond Hill GO corridor is a good holding strategy while TTC and Metrolinx continue to explore the Yonge Subway Extension. • Metrolinx Yonge Relief Network Study has noted the potential for RER to divert riders off the subway, providing congestion relief, particularly in the southbound direction during the morning peak.



Memorandum

TO: Regional Council
FROM: Daniel Kostopoulos, Commissioner Transportation Services
DATE: June 22, 2016
RE: **Clause 5, Committee of the Whole Report 10
Regional Express Rail Update**

Metrolinx staff released a series of documents on June 21, 2016, regarding GO Regional Express Rail Update. The Metrolinx Board of Directors will consider the recommendations in this report on June 28, 2016.

The recommendations in the report are beneficial and of significant interest to York Region because they will influence growth, land use and Regional transportation service for the next ten years and beyond. It is also important for Metrolinx to acknowledge the significant role they have in addressing future regional transportation needs, including those required to accommodate the 60 per cent intensification and the 80 persons and jobs per hectare targets outlined in the Proposed Growth Plan, 2016.

Attachment 1 is a copy of the Metrolinx GO Regional Express Rail Update staff report. Attachment 2 is the GO Rail Parking and Station Access Plan Update. Attachment 3 is a copy of the presentation to be made to the Metrolinx Board of Directors on June 28, 2016.

New Stations are proposed in York Region on the Barrie Corridor at Kirby in Vaughan and Mulock in Newmarket

Metrolinx staff have completed the New Stations Analysis study and have recommended two new stations be built in York Region, both of which are on the Barrie Corridor. The new stations are Kirby (Vaughan - near the intersection of Kirby Road and Keele Street) and Mulock (Newmarket – near the intersection of Mulock Drive and Bayview Avenue).

These stations have also been identified in the 2016 Transportation Master Plan update.

Staff acknowledges Metrolinx's efforts to address York Region's needs to enhance connections to the GO rail network and are in support of the recommended new stations at Kirby and Mulock. Staff will bring forward a report to Regional Council following the June 28, 2016, Metrolinx Board of Directors meeting providing an update on the approved direction and seeking Council endorsement of the new stations.

Notwithstanding Metrolinx's consultation to date with York Region and local municipal staff, some of the needed stations in York Region on the Barrie and Stouffville Corridors did not achieve a positive result in refining the list of potential station locations or in the Initial Business Case analysis. These locations include:

- Concord – Vaughan, Highway 7 east of Keele Street
- Denison/14th Avenue – Markham, Denison Street/14th Avenue east of Kennedy Road
- Major Mackenzie – Markham, Major Mackenzie Drive east of Markham Road

Staff are encouraged by Metrolinx's recommendation 1.3, which advises they will continue to collaborate to improve the Initial Business Cases for stations, including Concord, and bring them forward to the Metrolinx Board of Directors for future consideration. Staff look forward to continuing discussions with Metrolinx and the opportunity to inform the New Station Analysis.

The GO Rail Parking and Station Access Plan is under development and is scheduled for final adoption by Metrolinx Board of Directors in December 2016

Metrolinx is currently undertaking a study and developing recommendations for GO rail parking and station access. Recommendations of this forthcoming study are critical to the success of Regional Express Rail and directly affect York Region's transit and roads services.

The study is considering a range of station access options, including improvements to active transportation, local transit, pick up and drop off (including on-demand services), parking and customer information.

Results of this study will directly benefit and impact York Region residents and influence land use around GO stations.

Daniel Kostopoulos, P.Eng.
Commissioner of Transportation Services

SJC/sb

Attachments (3)

6801038

To: Metrolinx Board of Directors
From: Bruce McCuaig, President and CEO
Date: June 28, 2016
Re: GO Regional Express Rail Update

Executive Summary:

This report provides an update on progress made toward meeting the ten year GO Regional Express Rail commitment in terms of infrastructure advancement, public engagement, and station access, and makes recommendations on new stations and the integration of the City of Toronto SmartTrack concept into the GO RER program.

The report covers the following areas:

- The extensive work that is underway to advance the GO RER program.
- Recommendations on new stations to add to the GO Transit rail network, subject to formal receipt of legislated approvals and funding from the appropriate sources.
- Recommendations on continuing work to integrate the City of Toronto proposal for SmartTrack into the GO RER 10 year program including plans for an Eglinton West Light Rail Transit (LRT) extension between Mount Dennis and Pearson International Airport, as well as other projects of shared interest.
- Cost-sharing arrangements that need to be developed among the various orders of government to support incremental additions to the existing GO RER 10 year transit expansion program, as well as to support operations and maintenance of the existing Eglinton Crosstown Light Rail Transit (LRT) program.

Recommendations:

It is recommended that the Board of Directors:

RESOLVED:

1. Approve the following new stations to be included in the GO RER 10 year program subject to formal confirmation to Metrolinx of funding by November 30, 2016 as well as meeting the conditions presented in Section 1.4 of this report:
 - i. On the Barrie corridor, new stations at Spadina (at Front St.), Bloor-Davenport (Bloor St. near Lansdowne Ave.), Kirby (near Keele St.), Mulock (near Bayview Ave.), and Innisfil (at 6th Line),
 - ii. On the Kitchener corridor, new stations at Liberty Village (at King St. West), St. Clair West (near Weston Rd.), and Breslau (near Greenhouse Rd.),
 - iii. On the Lakeshore East and Stouffville corridors, new stations at Don Yard/Unilever (between Cherry St. and Eastern Ave.) and Gerrard (near Carlaw Ave.),

- iv. On the Stouffville corridor, new stations at Lawrence East (between Kennedy Rd. and Midland Ave.) and Finch (between Kennedy Rd. and Midland Ave.).
- 1.1. Request that municipalities where these recommended new stations (1.(i) through to 1.(iv)) are located provide resolutions to Metrolinx by November 30, 2016 indicating their agreement to the station location(s) and demonstrating their commitment to implementing transit supportive land-uses around stations, and sustainable station access.
 - 1.2. Advise municipalities that the following stations are not being included in GO RER 10 year program at this time:
 - i. Highway 7-Concord (Vaughan)
 - ii. Park Lawn (Toronto)
 - iii. Woodbine, at Highway 27 (Toronto)
 - 1.3. Advise municipalities that Metrolinx will continue to collaborate to improve the strategic, economic, financial, and operations cases for these locations (1.2(i) through to 1.2(iii)) and bring them forward for future consideration to the Metrolinx Board. Additional considerations will include any additional land use in the area that supports transit-oriented development and optimizes provincial transit infrastructure investments.
 - 1.4. Direct staff, as part of the ongoing regional transportation planning legislated review process, to continue ongoing dialogue with all municipalities to ensure that Metrolinx has current information regarding the status of locations that might be considered as part of the GO network beyond the ten-year window of the current GO RER program.
 - 1.5. Direct staff to thank all the municipalities across the region who have provided input to this analysis for their ongoing collaboration and share this report with them.
2. Endorse an integrated SmartTrack Concept including GO Transit Rail Corridors and Eglinton West LRT extension:
 - 2.1. Endorse a GO RER concept that integrates SmartTrack concept with up to six new stations at: St. Clair West (at Weston Rd.), Liberty Village (at King St. West), Don Yard/Unilever (between Cherry St. and Eastern Ave.), Gerrard (near Carlaw Ave.), Lawrence East (between Kennedy Rd. and Midland Ave.), and Finch (between Kennedy Rd. and Midland Ave.) and an estimated capital cost of \$0.7 to 1.1B (\$2014; costs do not include escalation, financing costs, lifecycle and operating and maintenance).
 - 2.2. Advance the preferred Eglinton West LRT extension alignment with 11 to 15 stops between Mt. Dennis and Pearson Airport, running at grade with targeted grade separations, consistent with the findings of the Eglinton West LRT Initial Business Case (2016), subject to further engagement with the local community, with an estimated cost

of \$1.5 to 2.1B (\$2014; costs do not include escalation, financing costs, lifecycle and operating and maintenance) and direct staff to:

- i. Collaborate with the City of Toronto, TTC and the local community to review traffic operations, stop locations, and grade separations and further develop the Eglinton West LRT integrating design excellence and sustainability objectives.
 - ii. Continue working with the Greater Toronto Airports Authority on the alignment connecting to Toronto Pearson International Airport.
 - iii. Coordinate planning with the City of Mississauga on the interface with the BRT.
 - iv. Continue to consult with the public in Toronto and Mississauga on the development of the Eglinton West LRT plans.
3. Direct staff to continue discussions among orders of government to confirm that costs incremental to the GO RER program, including, new stations in the City of Toronto, the Eglinton West LRT extension, infrastructure and services will need to be funded through contribution from the City of Toronto, the Government of Canada and other sources of funding, including local development contributions. This includes incremental capital construction costs, escalation, financing, lifecycle and operations/maintenance of the incremental new service.
- 3.1. In order for SmartTrack components to be procured alongside RER, the Province and Metrolinx require the City of Toronto's commitment to full funding (including capital with escalation and financing, operating/maintenance costs for SmartTrack, and operating/maintenance costs for LRTs) by November 2016.
4. Direct staff, as set out in the Metrolinx Board June 25, 2015 report entitled "Yonge Relief Network Study," to advance the Relief Line in collaboration with the City of Toronto and the Toronto Transit Commission to ensure that it achieves significant relief to the Yonge subway and is an integrated approach incorporating further business case analysis and the current work by the City of Toronto, alongside the other Next Wave projects.

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Background:

In 2015, the Province of Ontario committed funding of \$13.5 billion for extensive rail improvements through the GO Regional Express Rail (GO RER) program. Metrolinx is currently implementing the program, a transformation which will bring faster and more frequent GO train service across the region, with electrification in core areas. Five GO corridors will be upgraded to GO RER service levels – 15 minutes (or better) service in both directions throughout the day. Trains will be electrified which shortens trip times by up to 20 percent. Numerous other infrastructure improvements will also be made to enable GO RER service, including additional tracks, bridge reconstruction, grade separation, and more.

Implementing GO RER is expected to add 4,500 new weekly train trips, for a total of 6,000 weekly trips, and increase GO ridership by 140 percent over the next fifteen years. GO train ridership in 2014 was approximately 54 million annual trips. With the implementation of GO RER on five corridors, ridership is forecast to climb to 127 million annual trips over the next fifteen years. This package of GO enhancements is a step-change for rail service in the Greater Toronto and Hamilton Area, transforming it from what is now largely a commuter service to a true regional rail system, comparable to similar

systems in world-class cities across the globe. The full program of GO upgrades, including service, infrastructure, costs and benefits, is presented in the [GO RER Initial Business Case](#), available on the Metrolinx website.

The Metrolinx Board of Directors has received a number of previous reports on the development and implementation of the GO RER program, as follows:

- Beginning in June 2014, Metrolinx staff began to report on the vision for GO improvements in the context of world-class rail networks.
- In September 2014, Metrolinx staff began to provide further specifics on the GO RER program, including the electrification and service components.
- In December 2014, staff reported on the GO RER workplan, initial direction for integrating GO RER and SmartTrack, the community engagement strategy, and quick wins.
- In March 2015, staff updated the Board on issues by corridor, integration with SmartTrack, and public consultation.
- In September 2015, staff provided an update on progress by corridor as well as on system-wide elements like signalling and Union Station. A framework for New Stations analysis was also presented at this meeting
- In February 2016, a detailed update on electrification was provided, along with updates on GO RER-SmartTrack integration, New Stations analysis, and grade separation analysis.

Analysis:

This report presents analysis and updates on a number of GO Regional Express Rail-linked initiatives. GO RER is a complex program, with a number of components, all of which are progressing concurrently. The report begins with an update on the implementation of infrastructure upgrades to support GO RER, including environmental approvals, construction, and public engagement. From there, it presents an update on analysis supporting the GO RER Station Access Strategy. The report then presents analysis on expansions to the GO RER program including new stations and integration with the City of Toronto's SmartTrack initiative, including both rail corridors and the Eglinton West LRT. The report presents an update on Metrolinx work alongside the City of Toronto in advancing related rapid transit initiatives. Finally, the report provides information on cost-sharing of infrastructure and service. A number of appendices to this report provide further details and supporting evidence.

1. GO Regional Express Rail Update

1.1 Infrastructure Implementation Update

When the provincial government announced its commitment to the GO RER program as part of its Moving Ontario Forward plan, it set in motion an extensive program within Metrolinx to plan, design and build the infrastructure to support greatly enhanced GO rail service across the region. All told, Metrolinx is undertaking one of the largest infrastructure projects in North America. It will consist of over 150 km of new track to ensure uninterrupted service, an array of new bridges and tunnels to eliminate intersections of road and rail traffic, enhancement, renovation and construction of new stations, the electrification of the core network including Union Station and the acquisition of new electric fleet.

Each one of these initiatives is a significant undertaking in its own right, requiring work that ranges from the conceptual to design to delivery. Adding to the complexity of the task is the need to integrate this plan with existing GO expansion efforts just to meet growing demand. As noted in section 1.2, an extensive region-wide consultation has been undertaken to gather feedback on the plan for what should be built. At the same time, discussions on how best to integrate with the City of Toronto's SmartTrack initiative have also been held and are reported on today.

Since the announcement of GO RER, substantial progress has been made. Eleven Metrolinx-led GO RER related Environmental Assessments are completed, in progress or about to be launched. Discussions on potential grade separations have been initiated with municipalities. On many parts of the network, construction is already underway, including track work, layovers and station improvements. In other cases, efforts are underway to finalize planning and design. In all cases, the work requires partnership with local municipalities and the input of critical stakeholders, the broader public and the local community. Metrolinx supports this framework as essential for getting decisions right.

It is important to note that GO RER is the most significant focus of GO expansion work, however, there are other areas of GO expansion also underway. Metrolinx has been expanding GO rail across various sections of the network to respond to growth and demand across the GTHA. Examples of this include the recent addition of additional track on the Kitchener corridor to support more GO service and the Union Pearson Express, moving to half-hour service all day on the Lakeshore corridor, and improvements to Union Station. What this means is that there is work that is already complete, underway or substantially advanced for construction that helps position GO RER for success. Metrolinx has been able to advance work in each corridor to deliver more immediate expansion of the service as well as the foundation for GO RER. An update on these works follows:

Barrie Corridor

GO RER plans for the Barrie corridor include over 30 miles of new track, layover facilities, rail/rail and rail/road grade separations and station improvements.

Planning and design work and Environmental Assessment (EA) to support double tracking along much of the corridor is underway.

The Environmental Assessment for the Caledonia Station was completed in February 2016 with final approval issued by the Minister of the Environment and Climate Change on April 28, 2016.

The Notice of Completion for the Davenport Diamond Rail Overpass EA issued on May 26, 2016, has been submitted to the Minister of Environment and Climate Change, and is awaiting approval. Work also continues on an EA to add an additional track to the corridor to support service in both directions. A second series of public meetings is anticipated to be held this fall.

In addition to the studies that are underway to support the infrastructure that is needed along the Barrie corridor to deliver more GO service, work is beginning on a new layover facility in Barrie, construction of new track between York University and Rutherford Road is underway, as is construction of a new Downsview Park GO/TTC station, tunnels and platforms are being added at existing stations to accommodate more trains, and this summer, work will begin on the planned widening of the Dufferin Street bridge.

Metrolinx is investing in several targeted parking structures along the Barrie Corridor. The feasibility studies for parking structures at Maple and King GO Stations were completed in January 2016. The contract to design the Rutherford parking structure was awarded to R. V. Anderson Associates Limited in June. In addition, a passing track providing increased flexibility and reliability in scheduling from Steeles Avenue to south of Rutherford GO station is scheduled for completion by Fall 2017.

Kitchener Corridor

GO RER plans for the Kitchener corridor include new track, layover facilities, station improvements, some track realignment and the construction of a new rail tunnel under the 401.

The EA that was completed for the UP Express also studied the addition of a 4th track and the expansion of the tunnel under the 401/409 highways to support GO service running in both directions in addition to the UP Express service. Work is being done to move these projects forward to more detailed design and construction. Work is continuing on the Shirley Avenue layover facility in Kitchener in anticipation of the extension of two additional peak trips in the fall for a total of four new trips to Kitchener. On June 14, 2016, the Province announced an agreement-in-principle with CN Rail, proposing additional planning and technical analysis to build a new freight corridor between Bramalea and Milton.

Work is being completed for the new parking lots at the Weston GO and UP Express Station. These new parking lots bring the total number of spaces to 330 to help support demand from both GO Transit and UP Express customers.

Lakeshore East Corridor

GO RER plans for Lakeshore East include new track, grade separations, station modifications and numerous bridge modifications.

Three public meetings were held at the end of May 2016 on the expansion of the Lakeshore East Corridor between Guildwood and Pickering GO Stations as part of the EA process. This includes proposed addition of a third track, modifications to two rail bridges, electrification enabling works and grade separations at Scarborough Golf Club Road, Galloway Road and Morningside Avenue.

Work is also underway at Guildwood station to build a new station building, platforms, tunnels, elevators, two Kiss and Rides, and additional parking.

Lakeshore West Corridor

GO RER Plans for the Lakeshore West corridor include new track, corridor expansions, new stations and station modifications, layover facilities and grade separations. Planning is underway for the GO RER Corridor Enabling Works, and preliminary design is underway at several locations including significant station improvements at Mimico, Long Branch Station, Port Credit, Aldershot, and Hamilton GO Centre. Final construction work is targeted to wrap up this year at West Harbour Station, Burlington Station, and the Lewis Road Layover Facility.

Ongoing construction projects include Exhibition Station Rehabilitation, Bronte Station Platform and Parking Rehabilitation, and rail corridor expansion projects including bridges, retaining walls, and track and signal improvements required to provide future two-way-all-day service to Hamilton.

Milton Corridor

With GO RER, the number of trips on the Milton line is projected to increase by up to 30 percent over the next five years, requiring work to improve stations and parking.

To help support this added level of service, construction is underway on new layover facilities that will house and store trains. Plans are also underway for improvements at Cooksville, Kipling and Milton stations.

Richmond Hill Corridor

With GO RER, the number of trips on the Richmond Hill line is projected to increase by up to 35 percent over the next five years, requiring works including station improvements. The tender for the construction of Bloomington GO Station, the new northern terminus of the Richmond Hill line, is scheduled for release in July 2016. The tender is for the construction of the station and integrated parking structure, as well as road access from Highway 404 into the station.

Construction of the Gormley Station is ongoing and progressing well; the station is expected to open for partial train services on the first week of December 2016. Staff are also working with the community on plans to commemorate Mennonite heritage at the new station.

Stouffville Corridor

GO RER plans for the Stouffville corridor include double tracking, station modifications and improvements, new layover facilities and road/rail grade separations.

Phase 1 double tracking work continues on the corridor and a public meeting was held on June 1st in preparation for the start of Phase 2 work beginning. This work includes track expansion, signal work along the corridor and the installation of noise walls. A community workshop was also held for the redesign of Agincourt Station to inform the design of the station as well as to gain a better understanding of pedestrian access to the station.

Parts of the project along the full 17-kilometre segment are currently being designed or planned. These include adding a second track to the remaining single-tracked parts of this segment and expanding Unionville, Milliken, Agincourt and Kennedy GO stations to accommodate the second track. Construction will begin as designs are completed, starting in 2016.

The construction tender for the Lincolnville Layover Expansion was released on May 13, 2016 and closed on June 7, 2016. The expansion will include an additional track for train storage and upgrades to the existing track to accommodate future additional peak-hour and peak-direction service on the Stouffville Corridor.

Union Station Rail Corridor

As the hub of the GO rail network, work in the Union Station Corridor will be a cornerstone for the network. Work will include the installation of new track, crossovers, platform enhancements, signals, and storage facilities.

Signals continue to be replaced throughout the Union Station corridor to update and improve the reliability of service.

Work is continuing on the Union Station Trainshed project. The current plan is to have the existing contractor complete a reduced scope of work, and then to incorporate the balance of the trainshed rehabilitation into a subsequent procurement, to ensure the electrification component can be contracted through a competitive process.

Network Infrastructure Update

Network Electrification

As part of GO RER, five GO rail corridors will see all or core portions electrified to support the increased service. The EA for the electrification of the GO network is ongoing and consultation with stakeholders and communities are progressing well. Metrolinx has met with several stakeholder groups, including municipalities, members of parliament at the Provincial and Federal levels, First Nations communities and other stakeholder groups.

The next series of public meetings is anticipated to be held in October where feedback will be requested on the environmental studies that are being completed.

Network Facilities

As the system expands, there are a number of network facilities and supports that will need to be enhanced to support the new level of service and increase in rail traffic. Construction on the fuel upgrade system upgrade at the Willowbrook Rail Maintenance Facility began in June and is expected to be completed by the end of 2017.

Construction of the new East Rail Maintenance Facility continues and is progressing well to completion by December 2017.

Construction of the new GO Transit Control Centre is underway and is expected to be completed by Fall of 2018.

Construction of the new Mimico Train Layover Facility, located across from Willowbrook, continues and is scheduled for completion later this year.

The 30 percent design of a new Rail Operations and Train Crew Facility at Willowbrook is ongoing and a new design build tender is expected to be issued in August 2016.

Grade Separations

There are 185 level crossings across the GO system where rail and road traffic intersect. As traffic volumes increase, grade separation of these crossings can be considered. Typically, grade separation projects are initiated by road authorities and addressed on a case by case basis. Projects are cost-shared between road and rail authorities in accordance with Canadian Transportation Agency guidelines.

In conjunction with GO RER, Metrolinx identified an opportunity to consider potential grade separations on a network-wide basis. Metrolinx has conducted a preliminary assessment of all crossing locations and has begun discussions with municipalities on the outcomes of this work to help inform respective priorities. These discussions will continue over the summer and staff will report back to the Board in the fall on the outcomes.

Planning work on specific grade separations continues on projects that have been previously identified. The Town of Oakville completed an environmental assessment for a grade separation of Kerr Street on the Lakeshore East corridor in 2009. The City of Toronto is in the midst of conducting an environmental assessment of the Steeles Avenue crossing on the Stouffville corridor. York Region recently completed an environmental assessment of improvements to Rutherford Road, including a grade separation where it intersects with the Barrie corridor. Metrolinx is consulting on three crossing locations on the Lakeshore East corridor as part of its preparations for an upcoming environmental assessment of track expansion plans.

The GTHA has seen tremendous growth over the past decades. As a result, the volume of traffic on roads and rail corridors has increased with this growth. Metrolinx is committed to working with municipal partners to identify and advance projects in the context of construction timelines and each organization's available budgets. Projects that cannot proceed in conjunction with GO RER will continue to be considered for future implementation.

Design Excellence and GO RER

Design Excellence has identified a number of opportunities to advance design objectives on network wide program elements such as stations, grade separations, bridges, stations, noise walls, and the overhead catenary system. The GO Transit Design Excellence Guidelines, currently being developed, will provide guidance to Metrolinx teams and their consultants working on all station projects. This work is being supported by the Regional Transit Wayfinding Harmonization and Integrated Art initiatives.

The Metrolinx Design Review Panel (MDRP) is key to support the GO RER program. The MDRP reviews and provides non-binding advice on architecture, urban design and landscape architecture for select Metrolinx capital projects. In terms of our corporate design objectives, the benefits of good design must be considered in the context of the project's life span and its ability to draw increased ridership. The investment in design excellence has been proven to yield substantial long-term savings, both in the GTHA and other jurisdictions.

1.2 Public and Stakeholder Engagement

Since the announcement of the GO RER program in 2015, over 105 meetings have been held with communities and stakeholders across the region to further the planning and design of the infrastructure that was identified in the Initial Business Case.

In addition, in February and March 2016, Metrolinx hosted 15 Regional Open Houses in Aurora, Barrie, Brampton, Burlington, Innisfil, Lincolnville, Maple, Mississauga, Oakville, Pickering, Toronto, Unionville, and Whitby; including three in partnership with York Region, and an additional five meetings in partnership with the City of Toronto. The public meetings were attended by nearly 2,000 residents and stakeholders with nearly 3,000 additional visitors to the MetrolinxEngage online consultation portal.

The Open Houses were a legislated component of the Transit Project Assessment Process (TPAP) for the Electrification of the GO Transit Rail Network, and also served as venues for Metrolinx to inform the community on the New Station Analysis and Station Access Plan, Integrated Transit Fares, and the Legislated Review of the Regional Transportation Plan, as well as seek feedback. In partnership with the City of Toronto, Metrolinx also consulted on GO RER-SmartTrack integration and the Eglinton West LRT extension.

The www.metrolinxengage.com site served as an additional touchpoint, the digital equivalent of attending a public meeting. The same information and questions posed to attendees at the public meetings were available online and visitors had the option of being actively engaged in the conversations, which are posted for all to see and comment on for each project. All comments provided through the website or in person at the public meetings were recorded.

In total, 138 comments were submitted at the Open Houses and 281 comments were submitted on the website (2,791 people visited Metrolinxengage.com over 4,454 sessions with one quarter of visitors returning for additional visits).

Key Findings from the Public Consultation

- A number of comments were received in support of a station at Park Lawn; Mount Dennis, Kirby, Finch, Ellesmere, Dorval, Winston Churchill, Whites Rd., and Woodbine also received individual submissions in favour.
- On station access, key themes included the need for safer pedestrian and cyclist access to stations, better local transit connections, as well as additional parking. Members of the public also noted that the current fare structure favours those who drive to GO stations and is unfair to those arriving via alternative means.
- On the GTHA Fare Integration Strategy, comments included the need to make sure fares are affordable and the need for integration with TTC and UP Express. Members of the public who provided comments were generally comfortable with distance-based fares, but favoured a single fee per zone, rather than one which distinguishes by service type.

1.3 Station Access Plan

Metrolinx is currently developing a GO RER Station Access Plan. Increased GO service needs to be supported by easy and convenient station access solutions in order to be successful. Sufficient and more sustainable station access and egress along with a reduced reliance on parking is critical to meeting GO RER ridership forecasts and provincial, Metrolinx, and municipal policies.

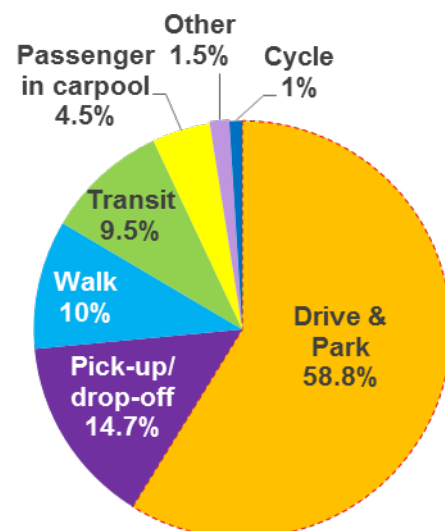
Phase I of the background review of GO station access was completed in Spring 2016. Phase I included the development of station access profiles, research topic papers on active transportation, parking, transit, and pick-up and drop off, as well as a summary background report. As well, Metrolinx engaged with internal stakeholders, municipal staff, and the public (the latter as part of the Metrolinx Regional Open Houses). Key findings from Phase 1:

- There are significant opportunities to encourage more walking to and from GO stations by improving pedestrian connections within and surrounding the stations (40 percent of customers living within a 10 minute walk of their station are not currently walking to their station). Additionally, the majority of current customers live within biking distance of GO (75 percent).

Increasing biking to GO is most feasible at stations where there is a dense street network and bike friendly streets and paths.

- It is essential for Metrolinx to work in coordination with municipal transit providers to increase service frequencies and better align the schedules of priority routes with direct connections to GO stations to help support increased use of local transit as a station access mode. Additionally, local transit use can be further supported by expanding the capacity of existing bus bays, providing dedicated access routes and implementing transit priority on and adjacent to the station site.
- GO RER is forecasted to increase demands on pick-up and drop-off facilities. Metrolinx can support the growth in use of this mode by expanding the capacity of existing facilities and exploring a wider range of configurations including short-term parking.
- Parking facilities at GO stations today are at capacity or nearing capacity and lack of available parking is regularly identified as a key concern by customers. GO RER is forecasted to increase the demand for parking across the network over the coming years. Even with improvement to other access modes, auto access and parking will continue to be an important access mode and there will be some expansion of parking as part of the GO RER program. With significant challenges to expanding conventional parking at GO stations, there are opportunities to expand parking at select stations by incorporating shared parking (19 stations), remote parking (19 stations) and peer-to-peer parking (30 stations). Each of these alternative approaches to parking is described in further detail in the Station Access appendix.
- Phase II of the Plan Update, the Business Case Assessment, is currently underway. The Business Case is evaluating three potential scenarios (Business-as-usual, Incremental Change, Big Changes and Partnerships) to determine the preferred approach to meet the access needs of current and future GO riders:
 - If the 'Business-as-Usual' scenario were pursued, it would result in significant parking and modest focus in growing other modes. Parking would grow at today's rates (25-30,000 additional spaces) mostly through structure and surface lots. Additionally, some improvements will be made to walking, cycling and transit at GO stations. The impact of station related traffic on the surrounding road networks and communities would grow, as would operating budgets due to the costs of maintenance for parking facilities.
 - If the 'Incremental Change' scenario were pursued, it would result in limited parking expansion and an incremental shift in focus to growing other modes. Parking would grow at a slower rate than today (12-15,000 additional spaces) mostly through surface or leased lots and will be more actively managed through growing the carpool and reserve parking programs. Additionally, substantial improvements would be made to GO facilities for walking, cycling and transit. The scenario would also require new levels of cooperation and consensus building with public and private stakeholders to make improvements to non-Metrolinx facilities. Metrolinx operating budgets would need to grow to support these partnerships as well as increase subsidies for

Figure 1: GO Station Access Mode Split (2015)



- o local transit and ride-sharing.
- o If the ‘Big Changes and Partnerships’ scenario were pursued, it would result in minimal parking expansion and an aggressive shift in focus to growing other modes. Parking growth would be limited to approximately 5-7,000 new spaces, mostly through leased lots. This scenario builds on the Incremental Change scenario and further enhances GO and municipal facilities and infrastructure for walking, cycling and transit. It also would result in enhanced parking management solutions. This scenario would require a high degree of coordination across all levels of government and a wide range of public and private stakeholders. Operating budgets at Metrolinx would grow to support this coordination as well as increase subsidies for local transit and ride-sharing.
- o Municipal engagement on the scenarios was completed in June. Municipal stakeholders expressed support for limiting expansion of parking around GO stations, pursue parking management strategies, and work collaboratively to further greater use of local transit and active modes of transportation to GO stations. A number of municipal stakeholders suggested that additional funding will be required in order for them to deliver service increases and municipal infrastructure upgrades.

An updated draft Plan will be developed that reflects a preferred scenario and project findings to date. Internal and external stakeholders will be engaged on the draft Plan, which is expected to be presented to the Board in September 2016.

1.4 Recommended New Stations for the GO Rail Network

New GO stations are being considered as part of the GO RER program and are undergoing thorough analysis through the business case methodology. In September 2015, potential new station locations and analysis methodology were presented to the Board. The presentation identified general policy objectives that the implementation of a new station should meet:

- Improving service and adding riders,
- Minimizing impact on trip time for existing customers,
- Maintaining appropriate station spacing for the vehicle technology,
- Supporting existing regional and municipal plans, and
- Addressing the demands of local context (e.g. urban/suburban).

The February 2016 update presentation to the Board identified refinements to the analysis methodology. In February and March, at a series of public meetings, the public was engaged on station selection methodology and the 50+ potential locations being evaluated, as part of the Regional Open Houses held across the GTHA and on metrolinxengage.com.

Following the public engagement period, the 50+ new GO RER station locations were further refined to a shortlist of 20+ locations on which further analysis was conducted, including Initial Business Cases. The shortlisted stations were selected based on the feedback from the public, input from municipalities and other key stakeholders, and through preliminary analysis performed in the Winter of 2016.

Seventeen Initial Business Cases were developed, examining stations ensuring that each site was analyzed and considered through multiple lenses. A suite of strategic, economic, financial, and deliverability/operational considerations were evaluated to create the basis for recommending new stations, including:

- Strategic
 - Policy alignment
 - Natural environment
 - Social inclusivity and accessibility
- Economic
 - Net present value
 - Safety benefits
 - GHG emissions reduction
 - Capital and operating cost recovery
 - Development potential
- Financial
 - Capital and operating cost
 - Revenue from ridership
- Deliverability and Operations
 - Constructability
 - Service and operational impacts
- Magnitude of impact for sensitivities
 - Alternate fare scenarios
 - Alternate development scenarios

Net Present Value (NPV) is an economic metric similar to a benefit-cost ratio that looks at a project's benefits minus the costs and describes the magnitude of project's cost-benefit ratio. NPV was the starting point for evaluation, reflecting the relative benefits to society and the regional economy. This tool captures strategic considerations like ridership, total travel time impacts including benefits to new passengers as well as negative impacts to existing passengers, and the potential for reductions in auto travel. Specific strategic and operational considerations that are not captured in NPV provide additional criteria for ranking:

- HIGH - all stations with positive economic performance should be recommended: bring economic value to the region, meet key station objectives.
- MEDIUM - sites with marginal economic performance but advantaged by strategic factors or sensitivities with likely positive impacts.
- LOW – sites with marginal economic performance but disadvantaged by strategic factors or sensitivities with likely negative impacts OR sites with poor economic performance but advantaged by strategic factors or sensitivities.
- VERY LOW - stations with lowest economic performance, which are not advantaged by strategic factors or likely sensitivities.

Beyond the individual assessment of station sites, the broader context of corridors and the full transportation network is also a critical lens. To this end, an analysis of Network Fit was layered on to the site-specific evaluation. Each new station adds time to the journey of passengers so there are limitations to the number of new stations that can be added to a line before they undermine the objective of providing effective service to a regional constituency served by the entire rail corridor. This must be considered in optimizing the investment of public dollars. In addition, stations should:

- Support the capacity to achieve planned GO RER service levels

- Provide direct or future connections to the wider transit network and/or support major corridor plans
- Minimize the degradation of performance improvement achieved through electrification; and
- Consider combined effects of stations on the same corridor.

As well, Metrolinx should:

- Prioritize stations with strong partnership opportunities and local community support
- Prioritize locations with maximum versatility in serving the widest reach of riders
- Include strategic considerations in addition to the results of the Initial Business Cases and the network fit analysis to also support strategic considerations to include factors like overall priorities of the various levels of government.

All the above factors were applied to the ranking of station to identify recommended new stations as part of the GO RER 10 year program:

- INCLUDED: Stations based on individual performance and/or with Network Fit, subject to further detailed analysis and conditions required to address contextual issues and/or determine network capacity
- NOT INCLUDED: Stations with Very Low Performance and no Network Fit justification or stations in clusters that are relegated based on superior performance of alternate location (i.e. may not be inherently poor performers but only one in cluster can proceed)

Based on the analysis completed to date, the following stations are recommended for inclusion in the GO RER and SmartTrack programs. They are presented below along with the conditions which must be met in order to advance implementation:

Barrie Corridor

- Spadina (near Front St.)
 - High travel time savings for both new and existing passengers in a high-density area with new development expected; relatively low capital costs due to existing rail yard
 - Subject to review of long-term (beyond 10 year GO RER program) train storage needs
- Bloor-Davenport (Bloor St. near Lansdowne Ave.)
 - Aligns with municipal and regional transportation and planning policies; connection to the Bloor-Danforth Subway at Lansdowne Station; delay to upstream riders with net loss in ridership anticipated
 - Subject to further analysis of corridor service implications and commitment by the City of Toronto to provide accessible, weather-protected, pedestrian connection to Lansdowne subway station
- Kirby (near Keele St.)
 - Located in area subject to new development; low forecast ridership, subject to additional work with municipality and landowners

- Subject to corridor service planning and further analysis of service implications
- Mullock (near Bayview Ave.)
 - Reasonable potential to add new GO ridership; overall net travel time savings and benefits
 - A grade separation at the location as well as further Metrolinx analysis are required
- Innisfil (near 6th Line)
 - Good opportunity to serve new and underserved market with limited impact on existing riders; new and existing GO riders shifting to this station could yield overall travel time benefits
 - Subject to existing financial agreements between City of Barrie and Town of Innisfil, confirmation of specific station location by the Town of Innisfil / County of Simcoe, and potential EA amendment or new EA.

Kitchener Corridor

- Liberty Village (near King St. West)
 - Key connection to major employment with large numbers of alighting passengers forecast and good travel time savings benefits; extremely tight corridor with potential construction and operations challenges
 - Subject to further development of corridor service plan and track configuration
- St. Clair West (near Weston Rd.)
 - Generally aligns with provincial and municipal policies for growth and intensification and overall net new ridership increase; deliverability challenges related to track realignment and bridge works; feasible locations may overlap catchment area with the Mt. Dennis station or limit transfer potential to adjacent streetcar
 - Subject to corridor service planning and further analysis of service implications
- Breslau (near Greenhouse Rd.)
 - Identified in previous Environmental Assessment; good opportunity to attract new riders from a wide catchment and support adjacent transit-oriented development; limited impact to existing passengers
 - Subject to confirmation of specific station location by Township of Woolwich / Region of Waterloo

Lakeshore East and Stouffville

- Don Yard/Unilever (between Cherry St. and Eastern Ave.)
 - Good connectivity and development potential; high potential capital cost and complex construction context
 - Specific location subject to further technical analysis, corridor service plan, and discussion with public and private landowners.

- Gerrard (near Carlaw Ave.)
 - Conforms well to provincial and municipal policies; positive travel time savings benefits, high capital cost and complex construction context due to modifications to the railway embankment and overpasses, and property requirements
 - Subject to detailed consideration of specific station location with the City of Toronto

Stouffville

- Lawrence East (between Kennedy Rd. and Midland Ave.)
 - Located in a low-density industrial and residential area; low forecast ridership, subject to additional work with municipality/landowners; connectivity to major bus route may yield higher ridership with fare integration
 - Subject to corridor service planning and further analysis of service implications
- Finch (between Kennedy Rd. and Midland Ave.)
 - Located in a low-density industrial and residential area; low forecast ridership, subject to additional work with municipality/landowners; connectivity to major bus route may yield higher ridership with fare integration
 - Subject to corridor service planning and further analysis of service implications
- The following stations, which underwent Initial Business Case analysis, are not recommended for inclusion in the GO RER program at this time. As further information becomes available and additional work is completed with municipalities, these stations could be brought forward for further consideration:

Barrie Corridor

- St. Clair West (at Caledonia Rd.)
 - Potential for new ridership but countered by very high impact on upstream riders and a challenging corridor context including a constrained site
- Highway 7 – Concord (east of Keele St.)
 - Higher construction costs; potential ridership catchment is limited by the new subway to the west; the potential for addition of new riders is offset by significant negative impacts to upstream riders

Lakeshore West

- Park Lawn (near Lakeshore Blvd. W)
 - Considered as alternative to Mimico GO station; potential performance is similar to Mimico GO station; advantages of marginal additional ridership from this location are outweighed by the high capital costs of new network and station infrastructure

Initial Business analysis may also be conducted on additional locations as new information emerges, such as Hwy-7 Woodbine on the Kitchener corridor, and Walkers Line-Cumberland on the Lakeshore West corridor.

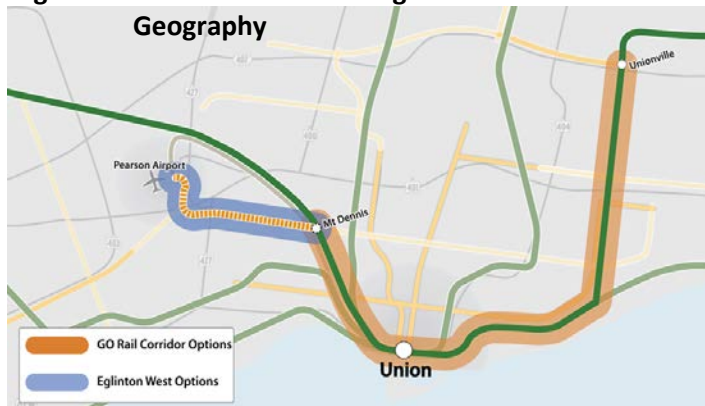
The remaining 24 stations that did not undergo initial Business Case analysis are identified for future consideration in the context of longer term regional transportation planning.

Following the Board's approval of the new GO RER stations recommendation, Metrolinx recommends that municipalities be requested to indicate their agreement with the station locations and demonstrate their commitment to implementing transit supportive land-uses around stations, and sustainable station access to enable first and last mile solutions. Metrolinx will continue to update and refine Initial Business Cases, and advance toward commencement of the Transit Project Assessment Process (TPAP) and Environmental Assessment (EA) processes, and the initiation of preliminary station design work. The IBCs for each station location are available on the Metrolinx website.

2. GO RER/SmartTrack Integration

The GO RER program, and particularly plans for GO RER within the City of Toronto, sets the context for the City of Toronto's SmartTrack initiative. GO currently has 19 stations in the City of Toronto. SmartTrack proposes utilizing the GO network to provide more service to the City of Toronto. In February 2015, Toronto City Council directed the City Manager to carry out a workplan and requested that Metrolinx include a number of SmartTrack elements in GO RER. The City's concept included a number of components including new stations, TTC fares, TTC service integration, frequency improvements on the Kitchener and Stouffville corridors, as well as a major transit service along Eglinton Avenue West to the Mississauga Airport Corporate Centre and Pearson Airport.

Figure 2: Illustration of the Integrated GO RER-SmartTrack



Metrolinx and the City of Toronto and TTC have been working closely together on options for GO RER-SmartTrack integration. These options are comprised of two components, as illustrated in Figure 2: GO rail corridors and Eglinton West. Each of these components is presented in the following section. The appendix to this report includes joint Metrolinx-City of Toronto initial business cases for the rail corridors component as well as the Eglinton West LRT.

2.1 GO Rail Corridor Options

All seven GO corridors run through the City of Toronto, stopping at 19 stations, and meeting at Union Station. As is evident in Figure 3, the GO corridors largely run through Etobicoke and Scarborough, providing downtown access opportunities to neighbourhoods located at a distance

Figure 3: GO Stations in Toronto



from the subway. By bringing fifteen minute or better two-way service to five of the GO corridors (highlighted in darker green on Figure 3), GO RER will bring more flexible travel options for residents and jobs within the City and to the broader region.

The City proposal triggered more intensive consideration of the potential for GO expansion within Toronto to improve access for residents and greater connectivity of the transit networks. Separate GO RER and SmartTrack concepts were deemed too infrastructure intensive and costly and resulting in a duplication of service, and are not being considered further.

The GO RER-SmartTrack Initial Business Case analyzed four options for integrating the City proposal with the committed GO RER program on the Kitchener and Stouffville corridors.

- Option A: Increased frequencies, 5 new stations
- Option B: Express and local service, 8 new stations
- Option C: Committed GO RER frequencies, 7-8 new stations
- Option D: Committed GO RER frequencies, 4-5 new stations

The GO RER-SmartTrack Initial Business Case built on and expanded the analysis completed for the GO RER Initial Business Case in order to determine the impact of SmartTrack on the GO RER benefits and costs. The GO RER Initial Business Case and this analysis are premised on the current fare structure, including existing GO fare structure for GO RER service, TTC fares, and existing transfer policy. The GTHA Fare Integration Strategy, currently underway, will serve as a vehicle for addressing transfer policy and other fare issues across the region.

GO RER is expected to utilize the available and planned track and corridor capacity. In this light, integrated GO RER-SmartTrack options were screened to determine the extent of additional infrastructure that they would require over and above that which is required for GO RER. Through this analysis, it was determined that Options A and B would each require extensive additional track infrastructure, resulting in the need for corridor widening, extensive property acquisition, consequent community impacts, and other deliverability challenges. In light of these findings, Options A and B were screened out and detailed analysis focused on Options C and D. In March 2016, City Council endorsed focusing analysis on Options C and D.

Strategic Case analysis suggests that GO RER will go a long way towards growing the attractiveness of GO rail as a travel option for Torontonians. Over and above GO RER, both Options C and D achieve the central objectives of integrating GO RER and SmartTrack in terms of improving access to GO within the City of Toronto. Both options increase ridership about nine to ten percent above GO RER. Because Option C includes more new stations than Option D, it goes further in increasing transit accessibility within Toronto but also imposes greater negative travel time impacts in comparison to Option D.

In terms of the Financial Case, Options C and D are relatively similar in terms of financial performance and affordability. Option C is slightly more expensive to both build and operate, compared to Option D, but the difference is marginal in the context of the larger GO RER infrastructure costs. It should be noted that capital cost estimates are preliminary and may not reflect the full costs of associated

structure works required to deliver the stations or comprehensive fleet costs, depending on ongoing operational analysis.

Economic Analysis measures the costs and benefits of a project including benefits such as travel time savings and congestion relief. This lens of analysis monetizes those benefits and then compares them to costs to provide an indication of the extent to which a project is a worthwhile investment. For the GO RER Kitchener and Stouffville corridors, benefits such as the dollar value of travel time savings exceed the capital and operating costs by a ratio of approximately 2:1. Economic analysis of the integrated options in the context of the overall analysis suggests that Option C would have a downward impact on the overall GO RER benefit-cost ratio, bringing about a decrease of approximately thirty percent while Option D would have a smaller downward impact, decreasing the GO RER benefit-cost ratio by approximately 18 percent. This suggests that Option D performs better than Option C from an economic perspective.

In summary, based on business case analysis, Option D is the stronger performing option for integration of SmartTrack with GO RER, striking the optimal balance between advancing local access within Toronto while preserving service quality for medium and longer distance passengers. Consistent with the findings of the new stations analysis, this report recommends six new stations for GO RER-SmartTrack integration: St. Clair West, Liberty Village, Don Yard/Unilever, Gerrard, Lawrence East, and Finch with an estimated cost of \$0.7 to 1.1B (\$2014, costs do not include escalation, financing costs, lifecycle and operating and maintenance).

Figure 4: Recommended Integrated GO RER-SmartTrack Option, including GO Rail Corridors and Eglinton West LRT Extension



2.2 Eglinton West Corridor Options

An Environmental Assessment for the full Eglinton Crosstown LRT from Kennedy Station to Pearson Airport was approved in 2010. The EA included 17 stops, 14 along Eglinton Avenue West and three between Renforth Gateway and Pearson Airport.

As noted previously in this report, rapid transit on Eglinton West between Mt. Dennis and the Airport Area, is also identified as part of SmartTrack, originally proposed as heavy rail. In March 2016, City Council recommended removing an Eglinton heavy rail option from further consideration based on the results of the City of Toronto's Eglinton West Corridor Feasibility Study in favour of pursuing a Light Rail Transit (LRT) option. Metrolinx and the City undertook a business case assessment of options to enhance the EA-approved design for LRT.

The goal of the analysis was to understand the costs and benefits of various options, including the impacts of increasing travel speed. An option for Bus Rapid Transit was also analyzed. Findings demonstrate that fewer stops and more separation from other road users increases travel speed but can also reduce local access and significantly increase costs. The business case process allows for balancing these different objectives.

Six options were studied with different numbers of stops, different technology, as well as different degrees of grade separations. The six options are detailed in Figure 4. A parallel analysis was undertaken on targeted grade separations to address community concerns of traffic impacts and improve the transit user experience.

Figure 5: Eglinton West Options

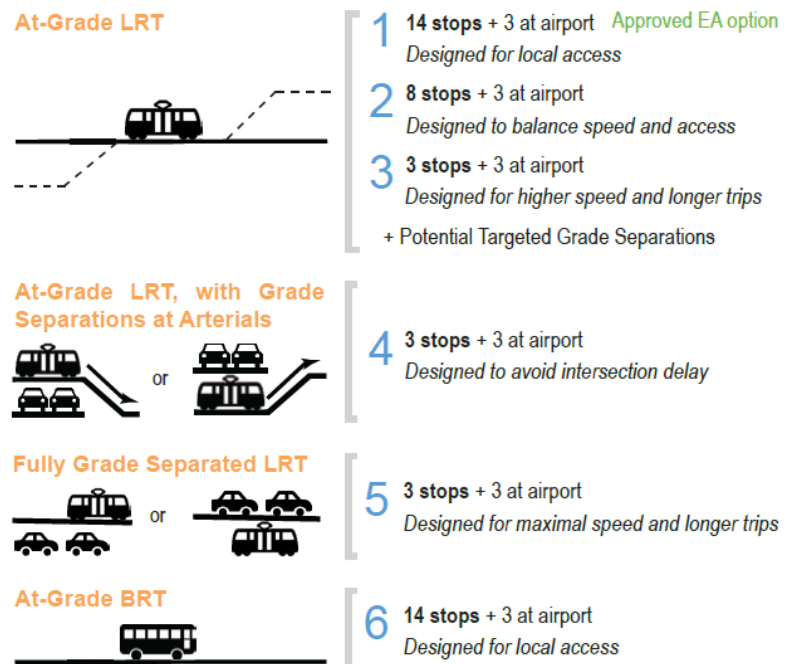


Figure 6: Eglinton West LRT Business Case Summary Table

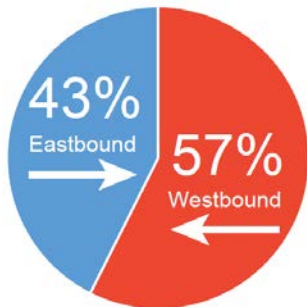
	Option 1 At-Grade 17 Stops	Option 2 At-Grade 11 Stops	Option 3 At-Grade 6 Stops	Option 4 Some Grade Separation 6 Stops	Option 5 Full Grade Separation (Elevated or Underground) 6 Stops	Option 6 BRT 17 Stops
AM Peak Hr. Boardings (Pearson to Mt Dennis)	4100	4150	3350	4850		950
Capital Cost* (2014\$ billions)	\$1.4 - \$1.8	\$1.4 - \$1.7	\$1.3 - \$1.7	\$1.7- \$2.1	\$2.0 - \$3.0	\$1.4 - \$1.8
	With Targeted Grade Separations: \$1.5 - \$2.1					
Benefit/Cost Ratio	0.9	1	0.9	n/a	0.9-1.2	0.9

*Costs developed for comparative purposes, capital costs do not include escalation, financing costs, lifecycle and operating and maintenance

Strategic Case

Strategic analysis highlighted the critical role of the Eglinton West corridor as an important missing connection in the regional transportation network between the Mississauga Transitway BRT, which currently serves the Renforth Gateway (currently under construction) and Phase 1 of the Eglinton Crosstown LRT, which will terminate at Mount Dennis (currently under construction).

Figure 7: Directionality of AM Peak Trips (averaged across options)

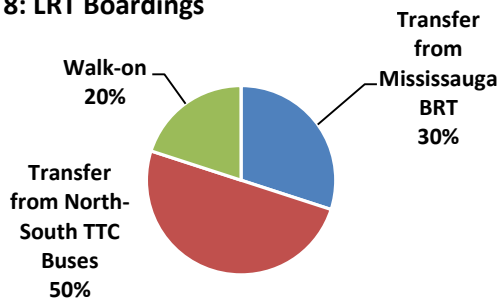


Options with only three stops on Eglinton miss important network connections with many of these bus routes. Riders coming from Mississauga and the west comprise 30 percent of boardings, benefitting from a new east-west rapid transit alternative to the Line 2 subway.

Ridership analysis confirmed the benefits of extending the LRT westward. The extension would increase ridership on the portion of the LRT already under construction and provide significant benefit for Toronto residents accessing Pearson Airport and its surrounding employment area. Ridership on the LRT extension during the morning peak period is higher in the westbound direction, towards the Pearson Airport area, than in the eastbound direction towards Downtown Toronto. Fully half of the boardings on the corridor come from transfers from major north-south TTC bus routes, particularly riders

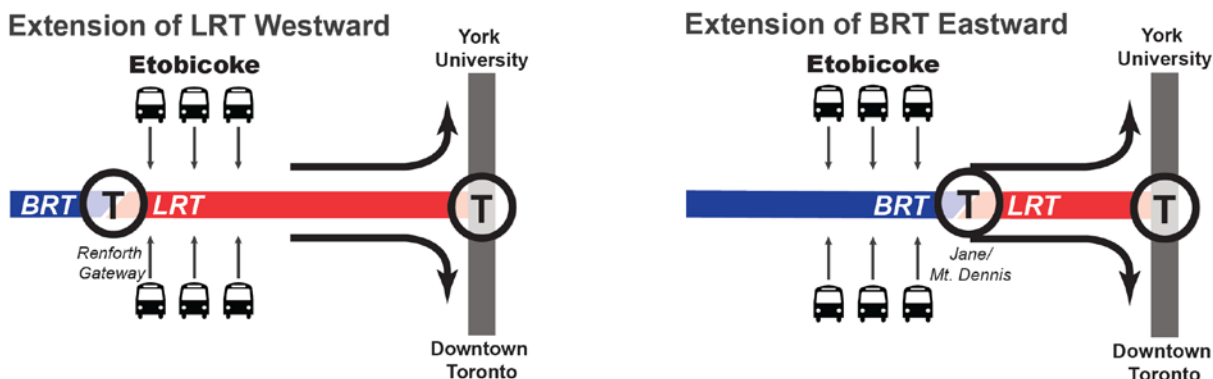
from northern Etobicoke.

Figure 8: LRT Boardings



In terms of technology, analysis of ridership and travel patterns suggest that the choice between BRT and LRT is really a matter of selecting a location for the best transfer point along the Eglinton corridor. A choice of BRT would mean extending the Mississauga BRT to Mt. Dennis and selecting Mt. Dennis as the transfer point. A choice of LRT would mean extending the Eglinton Crosstown LRT to the west with a major transfer point at Renforth Gateway. The strategic location of this transfer is therefore an important consideration in technology choice. Analysis revealed that locating the major transfer point at Renforth Gateway offers more benefits by minimizing transfers for passengers coming from midtown Toronto and north-south bus routes in Etobicoke.

Figure 9: Transfer Point Analysis



Ensuring access to transit for the local community is an important objective; about 20 percent of passengers are expected to walk to the LRT. Specific areas along the corridor have significant density and redevelopment potential but most significant destinations are outside of the corridor itself. This condition creates the need to carefully balance access with travel speed. Options with only three stops

on Eglinton Avenue create large distances between stops and reduce the ability of the local community to use the service. Such distances between stations will likely require the TTC to operate a parallel bus service with unattractive frequencies and operating costs. Further detailed analysis is required to determine the optimum number of stops that balance travel speed and local accessibility. However, this number is expected to be between 12 and 8 stops along Eglinton Avenue West between Mt. Dennis and Renforth Gateway as well as three stops between Renforth Gateway and Pearson Airport.

Financial Case

Keeping the LRT largely at grade is the more affordable option; full grade separation (elevated or underground) is estimated to roughly double capital costs to as much as \$3 billion (\$2014, costs do not include escalation, financing costs, lifecycle and operating and maintenance). Removing stops slightly lowers capital costs but increases operating costs because of the need for potential parallel bus service. Costs for the airport segment are currently shown as a placeholder subject to further work with the Greater Toronto Airport Authority (GTAA) to refine the alignment on the Pearson Airport property.

Economic Case

Because there are fewer destinations for transit riders in this stretch of Eglinton Avenue than the areas immediately east and west, trips tend to be longer distance through the area. This travel pattern means that benefit-cost ratios are highest for the options with the highest travel speeds – those with few stations and full grade separation. Although the fully grade separated (elevated) option has the highest benefit-cost ratio, it is not recommended because of the overall cost, significant community impacts, lower overall ridership and reduced transit accessibility to riders in the local area and northern Etobicoke. Both the 17 stop and 11 stop options have positive benefit-cost ratios with the 11 stop option performing slightly better.

Deliverability Case

Deliverability for the at-grade options was addressed extensively during the 2010 Environmental Assessment process. Concerns about visual and operational impacts of grade separating at every major intersection were sufficient to screen these options out of further analysis as they would result in a LRT structure that undulated up and down along the corridor and required significant station infrastructure.

Land sales in the corridor since 2010 by Build Toronto have protected just enough for road widening to accommodate the LRT as it was designed in the EA. The residential development which is now being completed on the recently sold lands faces onto Eglinton Avenue, changing the character of the street and introducing additional considerations about visual impacts of potential structures and grade separations. Right of way limitations near Mt Dennis increase the capital costs for the BRT option as additional infrastructure is needed to maintain road capacity and a transit right of way in this area. Because of this narrow right of way, the LRT would be tunneled through Mt Dennis from a portal west of Pearen Park as per existing plans.

Strategic Grade Separations

By targeting grade separations to specific locations, some key benefits may be obtained without the cost of grade separating the entire line. Three such locations were identified based on community feedback,

traffic turning volumes and transit passenger transfers: Jane and the Humber River crossing through Scarlett; Martin Grove Avenue and the entrance to Highway 401; and Kipling Avenue. High level feasibility and costing was undertaken for these grade separations but further analysis is needed to understand how these grade separations could be designed, the full benefits that they could have, and the impacts they might have on the community. All three grade separations raise the cost of the project to between \$2 - \$2.1 billion (\$2014, costs do not include escalation, financing costs, lifecycle and operating and maintenance) however because they speed travel time, they do not appear to significantly impact the benefit/cost ratio. Further public engagement will be critical in advancing these proposed grade separation locations.

Public Consultation and Community Feedback

The Eglinton West community has been highly active and engaged in the planning process to date. Metrolinx and the City jointly hosted public meetings in the community on February 20 and June 4, 2016. On May 16, 2016 a community consultation was hosted by the local MPP, Yvan Baker and attended by the Minister of Transportation and local Councillors John Campbell and Stephen Holyday. At these meetings, community members voiced concerns about a number of issues including impacts to traffic congestion and potential left turn restrictions. The project team learned about the area's specific traffic challenges related to access to and emergency detours from Highway 401 as well as the history of the corridor and ongoing growth pressures. Moving forward, strong commitments have been made to continue the planning process in close consultation with the local community particularly with the detailed traffic analysis that will be undertaken in the next phase of the work.

Next Steps

This analysis represents only the first step of work in planning an enhanced rapid transit option for Eglinton Avenue West. Significant concern has been noted from the local community and the next phases of work will be undertaken through committed public consultation. The next phases of work will include detailed traffic analysis and microsimulation to better understand the local traffic impacts and operational characteristics of the LRT. Further analysis will also be undertaken to better understand ridership and access to transit stops at the local level such as to inform a final decision on stop locations. Furthermore, work will be undertaken in consultation with the GTAA to establish an alignment on the Pearson Airport Property and improve the cost estimates of this segment.

2.3 Other City of Toronto Rapid Transit Projects

In addition to joint Metrolinx and City of Toronto work on GO RER-SmartTrack integration, extensive collaboration is also ongoing on other rapid transit initiatives including the Relief Line. Metrolinx and Toronto are working out purpose-fit governance structures and work-plans appropriate to each project.

The Eglinton East LRT (previously the Scarborough-Malvern LRT) has an approved EA, is identified in the regional transportation plan, and is a priority moving forward. Further work is required to confirm the design and alignment, capital costs, and timing. Planning questions include the interchange of the Line 2 Scarborough subway extension and an Eglinton Crosstown LRT east extension at Kennedy Station, maintenance and storage facility requirements, and the design of a terminus at the University of Toronto-Scarborough (UTSC).

On the Relief Line, Metrolinx concluded the Yonge Relief Network Study in 2015 and the City of Toronto has conducted a great deal of analysis using the *Feeling Congested?* framework. Both of these studies as well as the TTC's earlier Downtown Rapid Transit Expansion Study is premised on providing relief to the crowding on the Yonge Subway. In order to understand Relief Line project options from additional perspectives, Metrolinx, Toronto, and the TTC are advancing a workplan for a fulsome business case as well as additional analysis and design. This work is consistent with the Provincial announcement on June 1 which focused on ensuring that the optimal project for the Danforth to downtown as well as the northern segment to Sheppard Avenue moves forward. Metrolinx is currently in discussions with Toronto and the TTC to develop a Memorandum of Agreement to advance the workplan and define responsibilities.

As with all rapid transit project proposals around the region, these projects will be considered through the update to the regional transportation plan, currently underway.

2.4 Cost Sharing Arrangements

Developing appropriate and reasonable cost-sharing arrangements for the ambitious program of transit expansion and service is a critical factor in the success of the program. The Province of Ontario is making significant investments in transit infrastructure with the goal of improving transit and transportation across the Province, including the GTHA.

Since 2003, the Province has committed more than \$4.4 billion to the City of Toronto to help improve and expand its transit system, including funding to support the revitalization of Union Station, support for the Toronto-York Spadina subway extension, and the upgrade of the TTC's subway and streetcar fleets, to highlight some key investments. In addition, the Province has expanded the GO Transit rail system, including the investment of \$1.2 billion for the Georgetown South corridor, which is enabling GO Transit to better meet existing demand and accommodate future growth. The recent changes to the fare model of the Union Pearson Express are also making that service a more important part of the local and regional transit system, with about 20% of the ridership comprised of local commuters.

The Province committed an additional \$8.4 billion (\$2010) towards rapid transit projects in Toronto, including the Eglinton Crosstown, Finch West and Sheppard East LRT projects, and the City's Scarborough Transit Network proposal.

The Province's Moving Ontario Forward plan is making about \$16 billion available over 10 years for investment in transit in the GTHA. This includes a commitment of \$13.5 billion (\$2014) in capital construction costs related to the implementation of GO RER. It also includes funding for ongoing planning and design work for other priority projects, including the Relief Line and the Yonge North Subway Extension.

Significant provincial funding has also been provided for the York Viva Rapidway program, the Mississauga Transitway, Hurontario LRT and Hamilton LRT. The PRESTO integrated fare card is now being deployed across the TTC. These, and other investments, will contribute to a transformational change in the reach, quality and impact of the region's transit system.

As part of the GO RER program, about \$3.7 billion (\$2014) of capital construction cost is foundational to the SmartTrack program. SmartTrack is dependent on this investment being made. The Province is

prepared to cover the costs of this investment, supported by federal funding, provided the City assumes responsibility for paying for SmartTrack related costs and comes to a cost-sharing agreement with the Province on other shared priority transit issues. SmartTrack costs incremental to the GO RER program, including the Eglinton West LRT extension, new stations, and infrastructure and services incremental to the GO RER program, will need to be funded through contributions from the City of Toronto, the Government of Canada and other sources of funding, such as local development contributions. To this end, the original proposal for SmartTrack included contributions of \$2.6 billion from each of the City of Toronto and the Government of Canada towards the total costs of SmartTrack components. Commitments from these two orders of government will need to be finalized in order to advance these SmartTrack components of the program, including consideration of the capital construction cost, escalation, financing, lifecycle and operations/maintenance cost of the incremental new services.

The Province will also continue working with the City of Toronto to finalize equitable cost-sharing arrangements for other infrastructure costs associated with all Metrolinx-owned corridors, including utilities and grade separations, costs associated new GO train station locations as well as upgrades to existing GO train stations to support increases in service and to enhance both local and regional transit connections.

In addition, in Budget 2016, the Province re-affirmed its expectation that municipalities contribute to the ongoing operating and maintenance cost of the Eglinton Crosstown, Finch West, Hurontario and Hamilton LRT projects.

The Province is prepared to fund the capital construction costs, provided there is a commitment by the City of Toronto to fund escalation, financing, operations and maintenance costs and, where appropriate, lifecycle costs. In order for SmartTrack components to be procured alongside RER, the Province and Metrolinx require the City of Toronto's commitment to full funding (including capital with escalation and financing, operating/maintenance costs for SmartTrack, and operating/maintenance costs for LRTs) by November 30, 2016.

Conclusions:

Since the provincial announcement of GO Regional Express Rail in May 2015, work to advance the program has advanced quickly. Where needed, Metrolinx has initiated environmental approvals process, construction has initiated in some locations, and community engagement has been ongoing. Planning work has continued on potential expansions to the GO RER program, including new stations and SmartTrack integration. As part of the SmartTrack proposal, analysis of the Eglinton West LRT has also proceeded, and will continue in partnership with the City of Toronto, TTC, and the local community. Close collaboration with stakeholders including the City of Toronto, TTC, York Region, City of Mississauga and Toronto Pearson has characterized work to date and will continue to distinguish the GO RER program into the future.

Appendices:

1. GO Rail Parking & Station Access Plan Update
2. New Station Initial Business Case Assessment Presentation
3. GO RER-SmartTrack Integration Options Initial Business Case
4. Eglinton West Enhanced Rapid Transit Initial Business Case

Appendix 1: GO Rail Parking and Station Access Plan Update

Executive Summary

Metrolinx is currently updating its 2013 GO Rail Parking and Station Access Plan, as station access is critical to the success of Regional Express Rail (RER). Increased GO service needs to be supported by easy and convenient station access solutions in order to be successful. Sufficient and more sustainable station access and egress along with a reduced reliance on parking is critical to meeting GO RER ridership forecasts and provincial, Metrolinx, and municipal policies.

A Business Case Assessment (BCA) is being used to evaluate the impact of station access interventions at the network, corridor, and station-specific level in three scenarios: Business-As-Usual, Incremental Change, and Big Changes and Partnerships. This will help determine the preferred approach to meet the needs of current and future GO riders. A range of station access interventions are being evaluated, including improvements to active transportation, local transit, pick up and drop off (including on-demand services¹), parking, and customer information.

Timelines and Next Steps

This appendix provides an update on the progress to date and the scenarios being evaluated as part of the RER update. The assessment of benefits and impacts of each station access scenario is being finalized and a preferred scenario will be optimized. The optimized scenario should provide direction on the priority station access capital investments to the Capital Projects Group in the short and medium term to inform their procurement and station design work and meet current demands without precluding the success of long term station access interventions.

A draft of the updated Plan document will be shared with internal and external stakeholders for review. A revised draft plan will be presented the Board of Directors in September and following their feedback and further refinement and stakeholder review, the final plan will be presented to the Board in December for adoption.

¹ On-demand services refers to range of current (e.g. taxi) and emerging ride-hail (e.g. Uber), dynamic carpooling, micro-transit services and technologies (e.g. autonomous vehicles).

1.0 Updating the 2013 GO Rail Parking and Station Access Plan

In 2013, Metrolinx released a GO Rail Parking and Station Access Plan, which included a vision and guiding principles for parking and station access, a policy statement and decision-making framework, strategies for new parking at a corridor-wide and station level and high level implementation plan. To date, it has been used to guide parking expansion and, to a more limited extent, other station access improvements at GO stations. The Plan gives station programmatic direction for each station, such parking expansion numbers, whether it is surface or structure, timeframe for implementation, etc.

Metrolinx is currently updating the Plan to:

- Assess impacts of GO Regional Express Rail (RER) on station access.
- Analyse station access mode use and potential.
- Identify station access investments to support GO RER.
- Develop strategies to operationalize station access policies.

2.0 The Importance of Station Access to RER Success

The “first mile” and “last mile” is how riders connect to and from GO, using a wide range of travel modes.

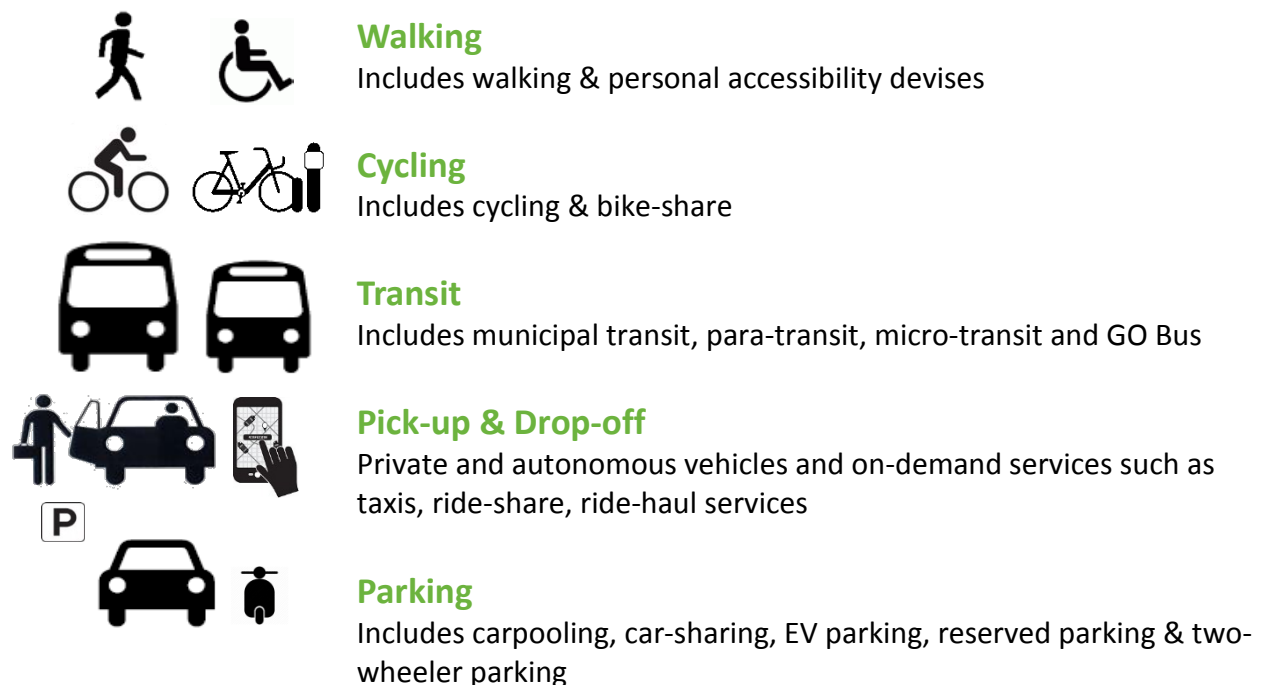


Figure 1: Station access modes being considered in the Station Access Plan Update.

How we design stations should be guided by both the way riders travel today and our goals for growing use of more sustainable modes in the future. The Big Move provides the following direction on this:

- **Goal A.** Transportation Choices (Objective 1) Increased transportation options for accessing a range of destinations.
- **Goal B.** Comfort and Convenience (Objective 6) Improved information, including real-time information, available to people to plan their trips.
- **Goal C.** Active and Healthy Lifestyles (Objective 8) Increased share of trips by walking and cycling.
- **Goal G.** Reduced Dependence on Non-Renewable Resources (Objective 16) Increased proportion of trips taken by transit, walking and cycling.
- **Goal L.** Efficiency and Effectiveness (Objective 31) Increased productivity of the transportation system.
- **Goal M.** Fiscal Sustainability (Objective 36) Fair and effective fiscal treatment of various modes that better reflects the cost of transportation services in the prices paid by users.

While we need to invest to support all travel modes, we should prioritize those needed to serve the most riders while shifting towards more sustainable modes. Growing GO ridership by providing free parking is in conflict with the direction provided by The Big Move and the Growth Plan for the Greater Golden Horseshoe and is not financially or environmentally sustainable:

- Subsidizing and not managing parking demand makes other modes uncompetitive with driving.
- Local transit cannot compete without improving transit priority on station sites and surrounding municipal roads, addressing discrepancies in service frequency, and aligning schedules.
- Existing traffic congestion around stations makes growing the use of auto-oriented modes challenging and further highlights the need for transit priority measures.
- Expanding parking at GO stations at current rates is not in alignment with Provincial and municipal intensification policies around transit.
- Walking and cycling facilities and connections around stations need to be improved to address comfort and safety concerns.
- Increasing parking does not provide an effective solution for many off-peak riders.

Increased GO service does not help riders if they cannot connect to the service. Sufficient station access and egress is critical to meeting RER ridership forecasts, as the forecasts assume unrestricted access, that is, customers could get to the station by their preferred travel mode (e.g. unhampered by limited parking). We need to rapidly grow use of other travel modes to serve the forecasted GO ridership, if planned parking expansion remains at levels set by the 2013 GO Rail Parking and Station Access Plan.

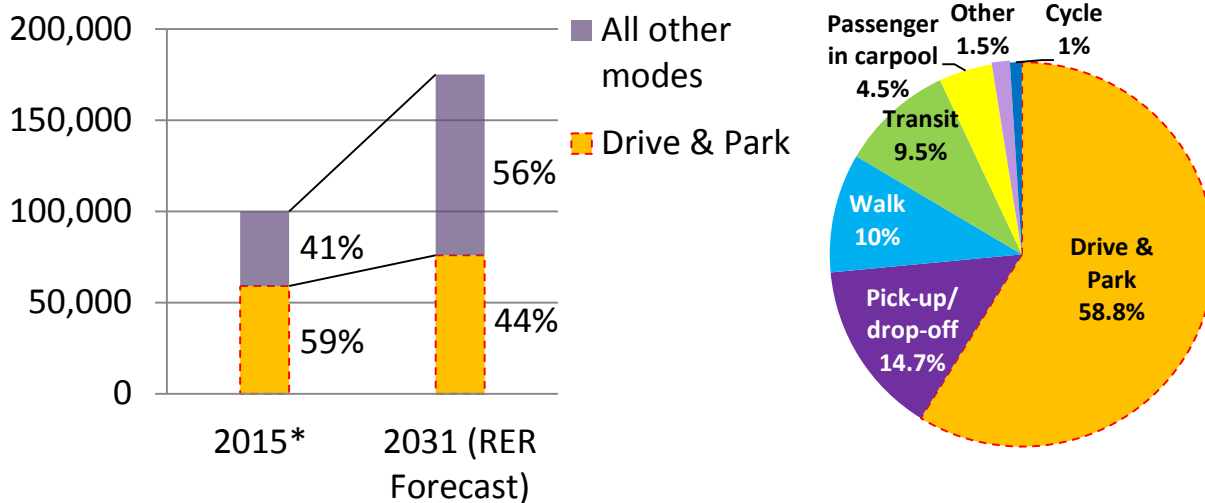


Figure 2: LEFT - Average weekday peak direction boardings (excluding Union) showing how other travel mode use will need to grow to meet ridership forecasts, if planned parking expansion remains at levels set by the 2013 GO Rail Parking and Station Access Plan. RIGHT - Riders travelling to GO stations by mode
 * Source: 2015 Cordon Count & 2015 GO Rail Passenger Survey

2.0 Station Access Scenarios

Following a background review period, where we engaged internal and municipal stakeholders and conducted research on various travel modes, we initiated a Business Case Assessment (BCA). The BCA is evaluating the impact of station access interventions at the network, corridor, and station-specific level in three scenarios to determine the preferred approach to meet the needs of current and future GO riders.

1. Business-As-Usual
2. Incremental Change
3. Big Changes and Partnerships

The BCA will identify which scenarios maximize ridership and it is yet to be determined if any scenario can meet unhindered ridership forecasts. The BCA is taking a conservative, realistic approach for each scenario.

2.1 Business-As-Usual - Prioritize long term parking expansion while nominally supporting other modes.

This scenario is intended to evaluate the impact of significant parking growth (approximately 25-30k more spaces across the network) mostly through structures (in particular, along the Barrie and Stouffville corridors) with some improvements for walking, cycling, transit, etc. (e.g. pedestrian routes and plazas in key locations, bike parking and routes, bus loops/terminals on GO sites, etc.). The impact of station access trips on the surrounding road networks and

communities would be significantly greater than it is today and the operating costs of maintaining stations would grow significantly with the addition of large parking facilities (e.g. \$150-200 per space per year, not including preventative maintenance). Metrolinx is encountering increasing resistance from municipalities to new parking structures, and there are diminishing mitigation options.

This scenario is somewhat easy to deliver, however, because:

- the GO RER budget provides access to capital investment dollars
- Metrolinx staff are well equipped to deliver and maintain more parking, and
- most of the station access interventions are with Metrolinx lands and control
- it meets existing GO customer expectations of free parking supply

As well, by concentrating parking in structures there would be more opportunities to redevelop, lease, or sell surplus station lands.

2.2 Incremental Change - *Limit parking expansion and incrementally shift focus to growing other modes.*

This scenario is intended to evaluate the impact of modest parking growth (approximately 12-15k more spaces across the network) mostly through surface and leased options, and substantial improvements to facilities for walking, cycling, and transit (e.g. comfortable, attractive pedestrian routes and new bridges, transit priority lanes, secure bike parking, etc.) It aggressively grows carpool and reserve parking and expands the co-fare subsidy to all GO stations in the absence of fare integration and subsidize micro transit and other ride-haul services. The impact of station access trips on the surrounding road network and community would remain high. The costs of maintaining GO stations would grow at a lower rate than Business-As-Usual and could be offset by increase in reserved parking revenues. This scenario would require cooperation and consensus building across a wide range of public and private stakeholders to make the improvements to facilities and services that are not completely within Metrolinx control and would increase operating costs associated with these new facilities and services.

2.3 Big Changes and Partnerships - *Restrict parking expansion and aggressively shift the focus to growing other modes.*

This scenario was intended to evaluate the impact of limited parking growth (approximately 5-7k more spaces across the network) mostly through leased options and assumes new parking management measures across the network to incent use of other modes, which are given priority. The impact of station access trips on the surrounding road network and community would be curtailed. The costs of maintaining GO stations will grow at a significantly lower rate than the other two scenarios.

Similar to the Incremental Change scenario, this scenario would also require increased allocation of operating resources and alignment across all levels of government and high degree of coordination across wide range of public and private stakeholders, given its reliance on

potential new funding models that may be required to direct investment in municipal infrastructure and to improve local transit service.

2.4 Scenarios Summary

The three distinct scenarios have been chosen for comparison purposes. Each scenario represents a position on a continuum of the pace of change, the amount and type of interventions, how much it will cost to build and maintain, how easy it is to deliver, and how it strategically meets Provincial, Metrolinx, and municipal policy. However, each scenario addresses the individual station context; so for example, the Business-As-Usual Scenario does not propose a blanket expansion of parking across the network, such as at urban stations where there is no existing parking. The scenarios evaluation helps define which broad direction Metrolinx should choose, but the preferred one needs to be optimized and refined by station to address the local context and any gaps. While the scenarios are still being evaluated using the Business Case Assessment tool, the following is a preliminary qualitative evaluation to identify key risks and rewards associated with each scenario.

	Strategic	Economic	Financial	Deliverability	
Scenario 1: Business-as-Usual					
Scenario 2: Incremental Change					
Scenario 3: Big Changes & Partnerships					

Poor Mixed Good Pace of change

Figure 3: Preliminary summary Business Case Assessment of the three scenarios being evaluated

3.0 Station Access Interventions

The station access interventions being evaluated in the three business case scenarios are described below.

3.1 Active Transportation Interventions

Adding multi-use paths, sidewalks, pedestrian bridges and tunnels on the station site and/or on adjacent municipal lands improves and increase access to the station by foot or bike. For example, in strategic locations at some stations, a bridge or tunnel across rail corridors, at grade separations along the rail corridors or other major barriers (e.g. highway corridors) significantly expand the walkshed (the area within approximately 800m or a 10 minute walk to the station). Continuing to provide sheltered bike racks and adding secure bike parking and repair rooms makes it more attractive to ride a personal bike to the station. Providing bike

share bikes in and around GO stations encourages more customers ride to and from GO without having to use their own bike and offers the flexibility of using different modes for different legs of a trip (e.g. bike share to the station in the morning but take local transit home in the evening). Furthermore, bike share provides a compelling last-mile solution at a number of stations for passengers to travel to their destination from the station.

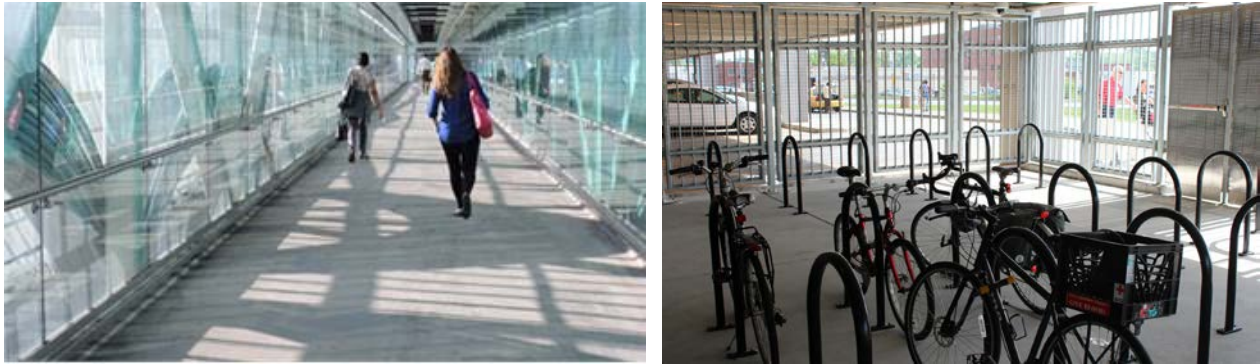


Figure 4: LEFT - The GO Pickering pedestrian bridge spans Highway 401 and the Lakeshore East Rail Corridor. RIGHT - secure bike parking in a Washington D.C. Metro parking structure

3.2 Local Transit Interventions

Providing facilities such as customer waiting areas, bus bays, bus loops, priority access lanes, and operator facilities allows transit agencies to provide better service and gives customers using transit an improved experience, with purpose-built facilities catered to them and faster access/egress into the station. A number of our stations have some or all of these facilities, but there are a number of places where they can be improved and expanded. Priority access over other vehicles is the number one request we hear from local transit providers to help them get customers quickly into the station.

Locating the bus stops close to the platform access points helps shorten time and distances for customers when transferring between services. On the surrounding municipal road network, transit priority measures, such as transit signals, transit-only lanes etc. helps bus riders bypass traffic congestion. Increasing the frequency of service and improving scheduling alignment on routes that are high use, and/or have the potential to be high use, enhances the attractiveness of transit to GO as an option for customers, as it reduces their wait times.

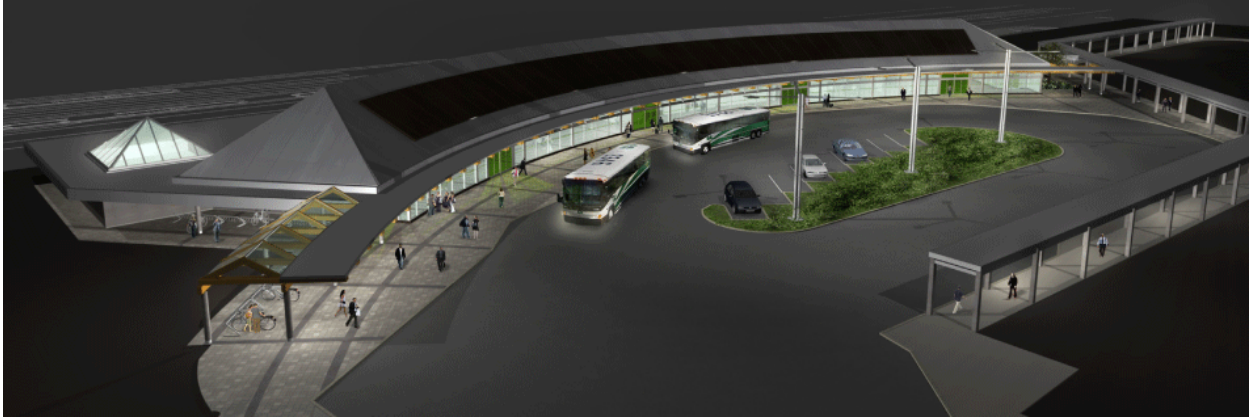


Figure 5: Rendering of new bus loop under construction at Burlington GO station for local and GO Transit

3.3 Pick-up/Drop-off Interventions

Continuing to provide pick-up and drop-off (PUDO) facilities close to the station building and platform access, particularly with dedicated access lanes from the municipal road network, helps customers get to their trains faster if being dropped off by private vehicle and the growing/emerging market of on demand services². The analysis completed indicates that there is demand for expanded facilities at the following GO stations: Allandale Waterfront, Newmarket, Guelph, Etobicoke North, Erindale, Mimico, Rouge Hill, Pickering, Ajax, Agincourt, Milliken, Unionville, Centennial, Markham, Oriole and Richmond Hill.

In addition to the current queuing style of PUDO facilities, short term parking (e.g. 10 minute limit) provides another alternative for customers using PUDO at peak times when the high frequency of trains means the conventional PUDO may result in people being delayed in queue.



Figure 6: LEFT – Current queuing-style of PUDO with taxi lane at Oakville GO/VIA Station. RIGHT – Short term parking style of PUDO at Kipling TTC east station entrance.

² On-demand services refers to range of current (e.g. taxi) and emerging ride-haul (e.g. Uber), dynamic carpooling, micro-transit services and technologies (e.g. autonomous vehicles).

3.4 Parking

Managing parking provides a range of options for customers who drive and park and helps make the other access modes more competitive. This includes expanding the proportion of parking that is reserved, so regular customers who are willing to pay have greater certainty on parking availability. Likewise, expanding the amount of carpool parking provides more carpooling customers certainty of a parking space, and a priority location close to the platform.



Figure 7: GO Transit offers carpool parking at almost every station where there is GO parking.

Cordoning off some parking during the peak morning period and opening it after the peak ensures there is parking available for off-peak customers. This is of particular use at stations where they may not be adequate off-peak local transit service to the station.

Where parking expansion is warranted, there are a number of ways to provide additional parking:

Peer-to-Peer: There is an emerging peer-to-peer market akin to Airbnb where private parking providers, from individual home owners to commercial landlords, can rent out their spaces using an online tool. The promotion of this type of service provides another parking option for customers that does not require Metrolinx to build more spaces.

Shared Parking: Sharing parking with other facilities, particularly those that have complementary and not competing parking needs, such as movie theatres, is another way to provide additional customer parking without overbuilding.

Remote Surface Parking: In some places, where land for parking at the station is not available or it is not the highest and best use, a remote lot may be a solution for customers wanting to drive and park. These lots are served by shuttles or where applicable, by a rapid transit line, such as an LRT or BRT.

Surface parking: Surface parking is simple and relatively quick and easy to build, so it can satisfy short term customer demand without significantly compromising or precluding a more sustainable longer term use for the land, such as transit oriented development. It is also something that be provided easily provided on leased land. Its sprawling nature means that it tends to have multiple access points, allowing for faster egress for customers when compared to a parking structure. That said, adding new surface parking does result in increased negative environmental and aesthetic impacts and longer, less comfortable walks to the station for customers.

Structured parking: In addition to the negative urban form and traffic impacts (large parking garages structures can be overpowering in smaller communities) structured parking is very expensive (construction costs: \$35-40K per space) and takes significant time to build, making its construction disruptive for customers. With a large number of cars and limited access points, egress can much slower when compared to surface parking.

The current practice of locating structures adjacent to the station building and/or platform offers customers who drive and park direct, weather-protected access to the platform; but in locations where space is tight, this can come at the expense of bringing other modes close to platform. Parking structures do tend to provide enough capacity that offers driving and parking customers more certainty of availability.

Structures can limit flexibility for future transit oriented redevelopment, which can offer new customers walk-in access and an improved walking environment; but it also uses land more efficiently, which can allow for the redevelopment of surface parking.

3.5 Customer Information Interventions

Providing integrated information in mobile applications as well as at the station in digital displays and kiosks on the full range of modes serving the station lets customers know all of their options and make informed choices on the best one for them. It also allows services such as reserved parking, carpool parking, and secure bike parking to be delivered in an integrated and customer-focused manner.

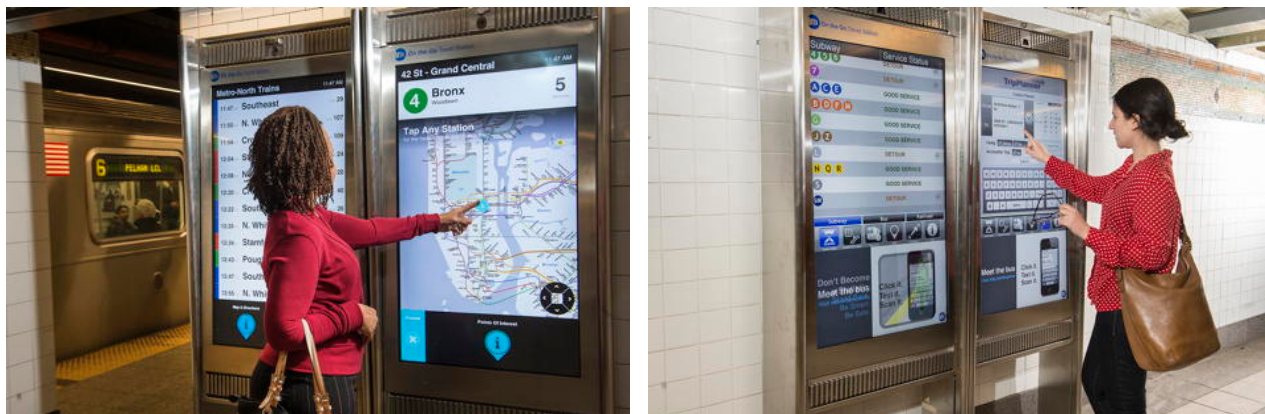


Figure 8: Customer information screens at Grand Central (left) and Penn (right) Stations in New York City let subway customers with information about their complete trip, from planning and service status to information about nearby destinations.

APPENDIX 2

GO Regional Express Rail 10-Year Program: New Stations Analysis

Board of Directors Report
June 28, 2016

Defining RER – The Vision

GO RER will reduce travel times and give people more ways to get where they want to go with:

Trains up to every 15 minutes



Service in both directions



More all-day service



Faster electric trains



More than **50** large cities across the world use Regional Express Rail systems.

Whether it's the Reseau Express Regional in Paris, the Overground in London, or NSW TrainLink in Sydney, each RER system has these basic traits:



Frequent all-day service



Uses electric trains



Runs on surface rail lines



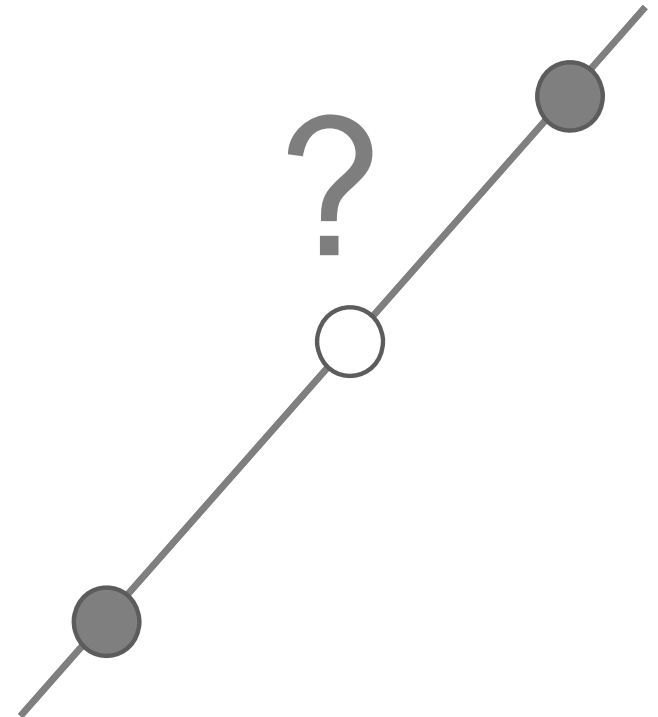
Good connections with local transit



RER 10-Year Program and New Stations

Objectives of New Stations

- Improve service and add riders
- Minimize impact on trip time for existing customers
- Maintain appropriate station spacing for the vehicle technology
- Support existing regional and municipal plans
- Consider the different roles and needs of each location (e.g. adapt to urban and suburban context)

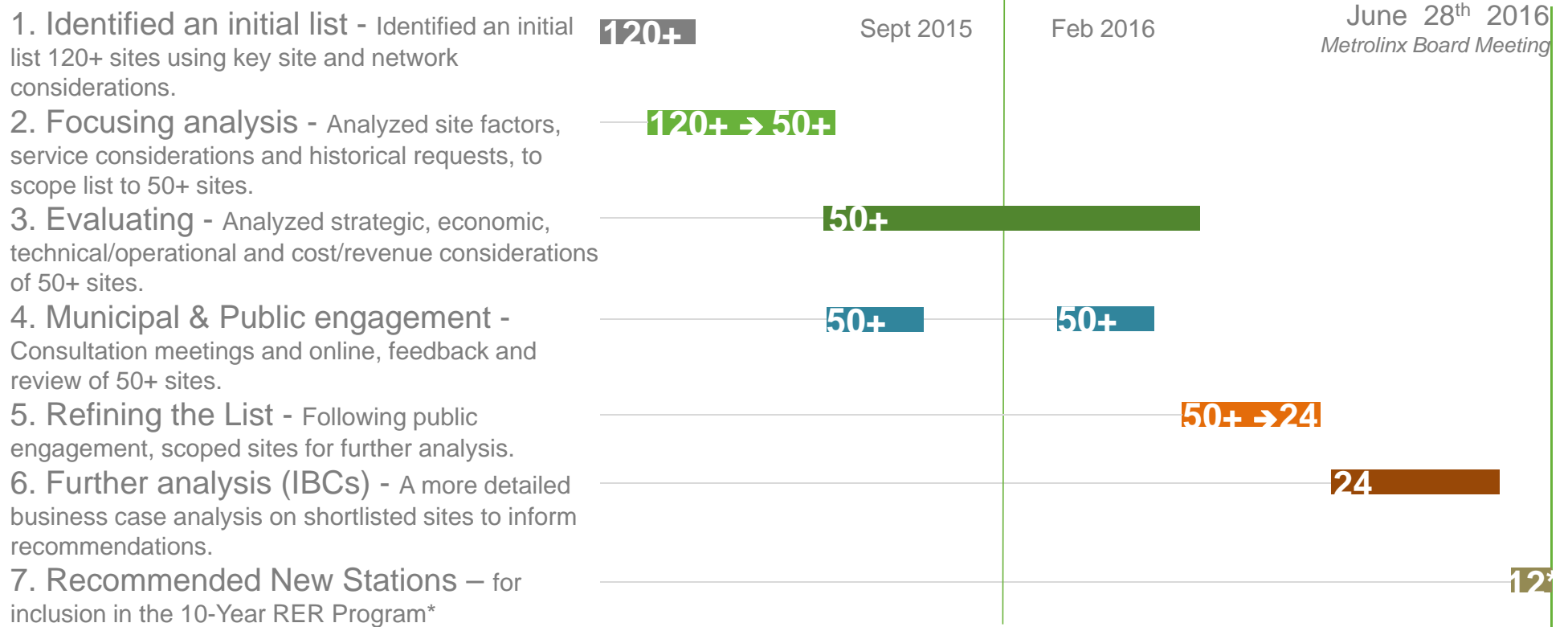


Think Regionally

- RER is part of a larger regional transit network in Regional Transportation Plan
- Scope of new stations work is GO system-wide
- Scope of impacts from any new station are corridor-wide
- Current focus is on new stations that should be included in the RER 10-Year Program.
- In the longer term it is expected that GO service increases will be commiserate with regional growth, prompting the ability to add more new stations.



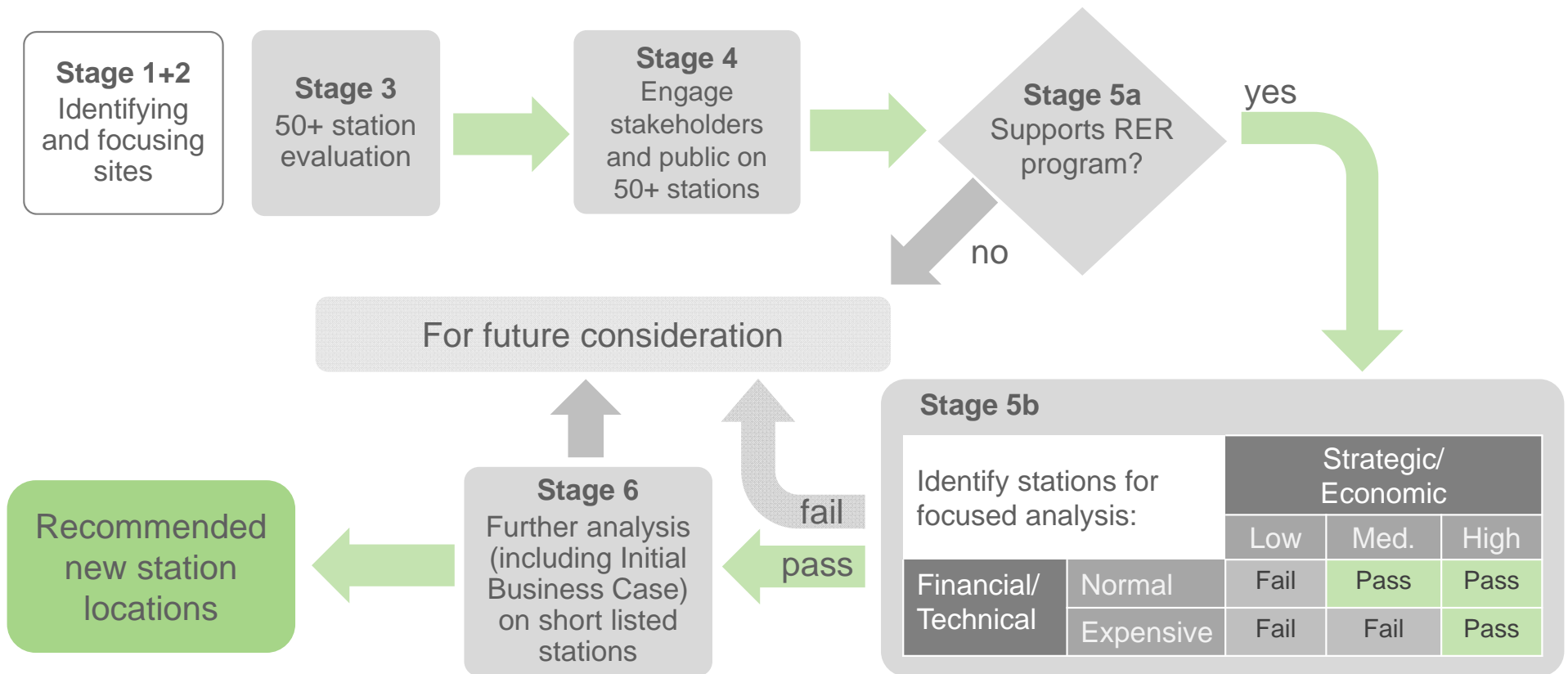
Process to Date



June 28th 2016
Metrolinx Board Meeting

*Subject to conditions identified in the GO Regional Express Rail Update Report to the Metrolinx Board of Directors, June 28, 2016

Decision Making Process



Stage 4: Municipal and Public Engagement

- The list of 50+ stations was presented to municipal staff for feedback over Fall 2015 and early Winter 2016
- Feedback was sought from the public through a series of consultations. Metrolinx hosted 19 regional Open Houses in total, with approximately 1872 members of the general public that attended.
- MetrolinxEngage.com saw 4249 visitors between February 16 and April 4th, 2016; over 200 public comments posted
- Municipal and public feedback was used to inform the preliminary evaluation and refinement of the locations moved forward for initial business case analysis, and the initial business cases themselves, for example:
 - Developer interest around station sites
 - City of Toronto's Feeling Congested Framework was considered when developing the strategic case criteria

Stage 5 – Evaluation Process Summary

- The initial results of Stage 3 (Evaluating) and Stage 4 (Municipal and Public Engagement) provided a preliminary evaluation of locations.
- Stations were analyzed based on 38 measures. However, nine key criteria were identified that significantly differentiate stations from each other and are better predictors of overall performance. More consideration of policy alignment and development potential in proximity to the potential station was included in the key criteria, based on stakeholder feedback.
- Assumptions about station configuration were based on the context of each location, with most urban locations assumed to provide no parking.

Stage 5 – Refining the List

Identifying locations for further analysis

- Best feasible sites identified so they can be considered in ongoing RER network service planning, infrastructure planning, design and engineering for the 10-year program
- Focus on the locations that will do best in current and future contexts in terms of connections to rapid transit and development potential
- Public and stakeholder consultation ensured the evaluation accurately reflects conditions and expectations.

Criteria	Action
Stations performing well and moderately	Proceed with initial business case
Locations not performing well	Remaining for future consideration

Stage 5 – Refining the List

Key criteria*

* As per February 10th, 2016 Metrolinx Board of Directors RER Stations Update Presentation

Category	Objective	Criteria	Measure/Metric
Strategic/ Economic Planning	Connectivity and Ridership Drivers	How many trips will start and end at this station?	Sum of boardings + alightings
		Does the station connect to other higher order transit modes and have potential to improve network and/or corridor service?	Distance to existing and planned routes
		Does the station connect to key destinations?	Number of nearby destinations and places of interest
	Travel Time Savings	What are the time savings associated with the new station?	Ratio for time penalty of existing riders to minutes saved for new station users
	Market Potential	How well situated is the station in relationship to future market demand?	High level assessment of market potential
	Development Potential	Can the station support future development and intensification? What is the likely timing?	Soft sites; number and scale of recent development proposals
	Policy Alignment	Does the station area align with Growth Plan policy?	Location relative to urban growth centre, built up area, or rural area
Financial/ Technical	Affordability	What is the cost to construct the station?	Relative expected cost
	Ease of construction	Can the required facilities be constructed?	Degree of site constraint

Stage 5 – Refining the List

Why Some Locations Did Not Perform as Well as Others

Locations that do not perform well share similar challenges and constraints, such as:

Prohibitive construction costs or challenges, such as corridor or track limitations:

- e.g. Adding a platform under major roads may impact substantial retaining walls and bridge columns, which may require grade separations to be rebuilt, or corridor widened through significant property acquisition

High time-cost impact, many passengers delayed, few save time through boarding or alighting here:

- e.g. In general, locations closer to Union can delay thousands of passengers already on a train. However, a location performs well if it saves many nearby passengers time by shortening their overall trip time from origin (e.g. home) to final destination (e.g. work), counterbalancing the effects of delays to passengers already on the train

Few nearby regional destinations:

- e.g. Some locations have very few regional destinations such as employment, schools, government services, or a confluence of unique retail

Stage 5 – Refining the List

Why Some Locations Did Not Perform Well as Others (cont'd)

Unsupported by Provincial growth policy, constrained by Greenbelt or area of limited growth:

- e.g. A station in or near designated Greenbelt lands would have constrained future development potential, and may be inefficient for local transit to access and serve

Unsupportive of current or planned land uses and/or low densities, such as warehouses, mature residential neighbourhoods:

- e.g. Light industrial and warehouse areas are often more car-dependent and do not facilitate transit ridership; the large properties and intersection spacing limit walk-up access surrounding single family homes limit potential ridership compared to areas where multi-unit dwellings are the norm; established neighbourhoods may be less supportive of introducing higher densities in future

No major new infrastructure to facilitate station construction within current RER program, such as the Richmond Hill Line, Milton Line

Stage 6 – IBCs Conducted on these Locations (24 sites)

Initial Business Cases Completed

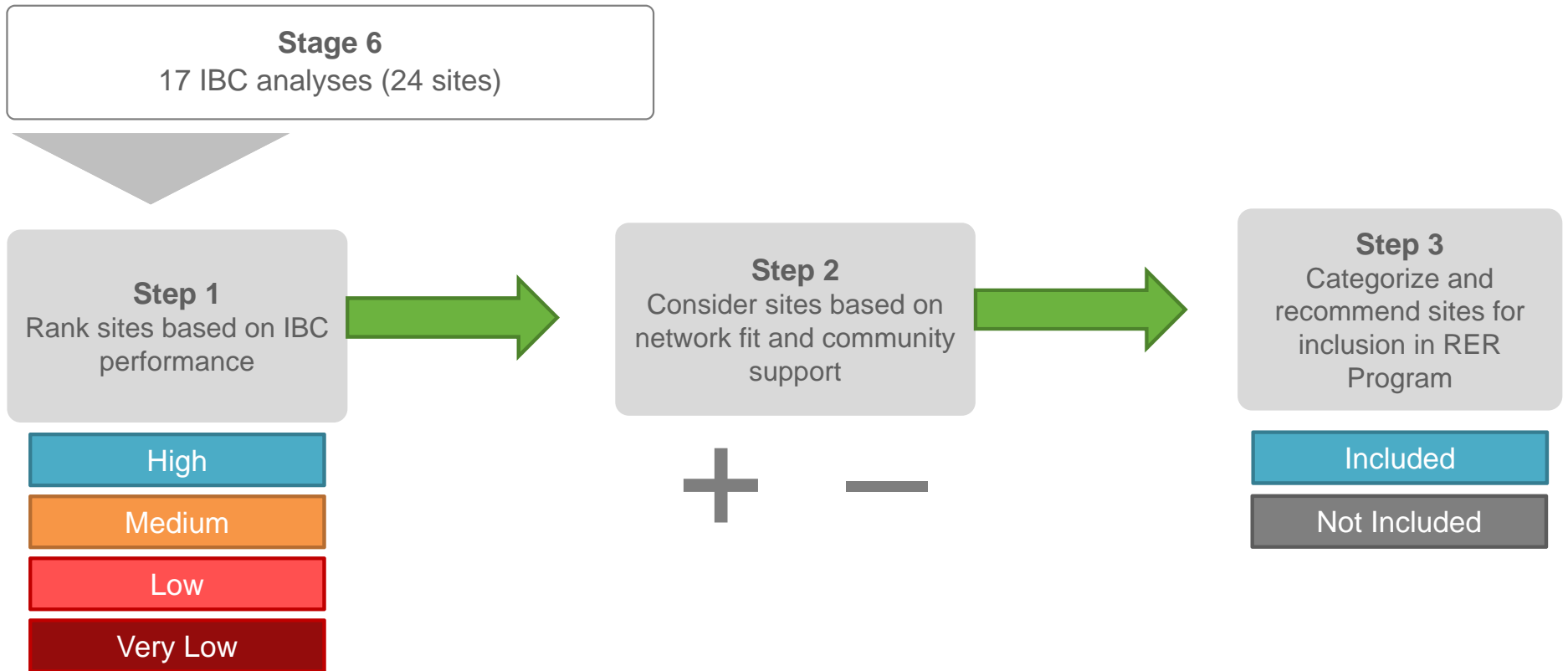
GO Corridor	Location	Municipality
BA	Spadina	Toronto
BA and KI	DOWNTOWN WEST: LIBERTY VILLAGE, DUFFERIN-QUEEN WEST, LANSDOWNE	Toronto
BA	Bloor-Davenport	Toronto
BA	St. Clair (Barrie Line)	Toronto
BA	HWY 7-CONCORD, YORK UNIVERSITY	York (Vaughan), Toronto
BA	Kirby	York (Vaughan)
BA	Mulock	York (Newmarket)
BA	Innisfil	Simcoe (Innisfil)
KI	St. Clair (Kitchener Line)	Toronto
KI	Breslau	Waterloo (Woolwich)
LSE and SV	DOWNTOWN EAST: DON YARD, UNILEVER, QUEEN-EASTERN	Toronto
LSE and SV	GERRARD: DUNDAS EAST-LOGAN, GERRARD	Toronto
LSE	Whites	Durham (Pickering)
LSW	PARK LAWN, MIMICO	Toronto
SV	Lawrence East	Toronto
SV	Ellesmere	Toronto
SV	Finch East	Toronto

- Initial Business Cases (IBC) were undertaken on the refined list of 17 locations (24 individual station sites, with some analyzed as part of a cluster).
- Sites analyzed through multiple lenses:
 - Strategic
 - Economic
 - Financial
 - Deliverability/operational considerations

LEGEND

CAPS = “clusters”: several locations in close proximity, only one to be recommended

Decision Making



Step 1 – Individual Station Performance

Initial Business Cases inform the relative ranking of stations based on the four cases and key sensitivities, including:

Strategic

- Policy alignment
- Natural environment
- Proximity to low-income community

Economic

- Net Present Value*
- Ridership, safety, GHG
- Travel time impacts
- Capital and operating costs recovery
- Development potential

Financial

- Capital and operating costs
- Ridership and new revenue

Deliverability/Operational

- Constructability
- Operating/service impacts

Magnitude of impact for sensitivities

- Alternate fare scenarios
- Alternate development scenarios

High

all stations with **positive** economic performance: bring economic value to the region, meet key station objectives

Medium

sites with **marginal** economic performance but advantaged by strategic factors or sensitivities with **likely** positive impacts.

Low

sites with **marginal** economic performance but disadvantaged by strategic factors or sensitivities with **likely** negative impacts **OR** sites with **poor** economic performance but advantaged by strategic factors or sensitivities

Very Low

stations with **lowest** economic performance, which are not advantaged by strategic factors or likely sensitivities

*See Appendix on Economic Analysis

Step 2 – Network Fit Considerations

- Apply a broader network lens that prioritizes individual stations *within* their corridor (versus across corridors) depending on:
 - connections to rapid transit
 - support from the wider community
 - effect on opportunities for future stations
 - spacing in relation to other existing or new stations on the line to ensure that impact on travel times is minimized

Examples:



Step 3 – Station Recommendations

Rank potential stations along each corridor to account for distribution and optimize corridor performance:

- Identify **two stations** per line to preserve the trip time savings gained through electrification
- Provide for **one additional station** if it is located toward the end of the line, which would impose less travel time delay
- Consider up to **one additional station with network fit advantages** on the condition of more detailed assessment of network capacity and service plan impacts



Included
in GO RER 10-
Year Program

Stations based on individual performance and/or with Network Fit, subject to further detailed analysis and conditions required to address contextual issues and/or determine network capacity

Not
Included
in GO RER 10-
Year Program

- 1) Stations in **clusters** that are relegated based on superior performance of alternate location (i.e. may not be inherently poor performers but only one in cluster can proceed)
- 2) **Very Low** stations and **Low** without Network Fit factors. These are locations that will not be pursued within 10-year RER program

Recommendations: Barrie corridor

Corridor	Station	Category	Conditions
Barrie	Spadina	Included	Subject to review of long-term (beyond 10-year RER program) train storage needs
	Bloor-Davenport	Included	Subject to further analysis of corridor service implications and commitment by the City of Toronto to provide accessible, weather-protected, pedestrian connection to Lansdowne Subway Station
	St. Clair West	Not Included	
	Highway 7-Concord	Not Included	
	Kirby	Included	Subject to corridor service planning and further analysis of service implications
	Mulock	Included	A grade separation at the location as well as further Metrolinx analysis are required
	Innisfil	Included	Subject to existing financial agreements between City of Barrie and Town of Innisfil, confirmation of specific station location by the Town of Innisfil / County of Simcoe, and potential EA amendment or new EA.

LEGEND

Included = Included in the GO RER 10-Year Program

Not Included = Not Included in the GO RER 10-Year Program

Recommendations: Kitchener and Lakeshore corridors

Corridor	Station	Category	Conditions
Kitchener	Liberty Village	Included	Subject to further development of corridor service plan and track configuration
	St. Clair West	Included	Subject to corridor service planning and further analysis of service implications
	Breslau	Included	Subject to confirmation of specific station location by Township of Woolwich / Region of Waterloo
Lakeshore East	Don Yard/Unilever	Included	See Stouffville Corridor for Conditions (serves both corridors)
	Gerrard	Included	See Stouffville Corridor for Conditions (serves both corridors)
	Whites	Not Included	
Lakeshore West	Park Lawn	Not Included	

LEGEND

Included = Included in the GO RER 10-Year Program

Not Included = Not Included in the GO RER 10-Year Program

Recommendations: Stouffville Corridor

Stouffville	Don Yard/Unilever	Included	Specific location subject to further technical analysis, corridor service plan, and discussion with public and private landowners
	Gerrard	Included	Subject to detailed consideration of specific station location with the City of Toronto
	Lawrence East	Included	Subject to corridor service planning and further analysis of service implications
	Finch	Included	Subject to corridor service planning and further analysis of service implications
	Ellesmere	Not Included	

LEGEND

Included = Included in the GO RER 10-Year Program

Not Included = Not Included in the GO RER 10-Year Program

GO Network

LEGEND

- Included in the GO RER 10-Year Program
- Not Included in the GO RER 10-Year Program
- Existing/Committed



Next Steps

1. Proceed with recommended New Stations

as set out in staff report of June 28th 2016 subject to:

- Formal confirmation by of funding and any conditions identified in the June 28th Metrolinx staff report
- Detailed technical analysis of corridor service plans

2. Detailed station planning and procurement (2016+)

- Business case updates on recommended sites as required
- Begin TPAP/EAs
- Preliminary and detailed design

3. Construction (2018+)

- Construction (staged within RER program)

Next Steps (continued)

The following stations are not being included in the GO RER 10 year program at this time. However, this does not mean that the stations will not be considered for inclusion in the GO rail network in the future. Metrolinx will continue to work with municipalities to improve the strategic, economic, financial, and operations cases for these locations and bring them forward for consideration. Additional factors for consideration will include land use in the area that supports transit-oriented development and optimizes provincial transit infrastructure investments:

- Barrie Corridor: Highway 7–Concord
- Lakeshore West Corridor: Park Lawn, Walkers Line-Cumberland
- Kitchener Corridor: Woodbine-Highway 27

The remaining 24 stations that did not undergo initial business case analysis are identified for future consideration in the context of longer term regional transportation planning.



APPENDIX A

Locations For Future Consideration – Would Require IBC Analysis

Stage 5 – Locations For Future Consideration – Would Require IBC Analysis

GO Corridor	Location	Municipality
BA	Bathurst/Side Road 15	York (King)
KI	Woodbine-Highway 27	Toronto
KI	Islington	Toronto
KI	Heritage	Peel (Brampton)
LSE and SV	Parliament-Cherry	Toronto
LSE and SV	Jones	Toronto
LSE and SV	Greenwood	Toronto
LSE and SV	Coxwell	Toronto
LSE	Lakeridge	Durham (Ajax/Whitby)
LSW	Roncesvalles	Toronto
LSW	Kipling	Toronto
LSW	Winston Churchill	Peel (Mississauga) / Halton (Oakville)
LSW	Maple Grove	Halton (Oakville)
LSW	Dorval	Halton (Oakville)
LSW	Walkers Line/Cumberland	Halton (Burlington)
(continued next page...)		

LEGEND

CAPS = “clusters”: several locations in close proximity, only one to be recommended

* per the Decision Making Framework, locations on corridors that are not significantly impacted by the GO RER program (i.e. electrification and major track infrastructure improvements) were not considered at this time.

Stage 5 – Locations For Future Consideration – Would Require IBC Analysis (continued)

GO Corridor	Location	Municipality
MI	EAST MALL/WEST MALL*	Toronto
MI	Cawthra Rd/Dundas W*	Peel (Mississauga)
MI	Trafalgar*	Halton (Milton)
RH	WEST DON: Queen, Dundas, Gerrard*	Toronto
RH	Millwood [CN Leaside]*	Toronto
RH	Eglinton [CN Leaside]*	Toronto
RH	Don Mills-Bond*	Toronto
RH	York Mills*	Toronto
RH	John St-Green Ln*	York (Markham)
RH	16th Avenue*	York (Richmond Hill)
SV	14th Avenue	York (Markham)

LEGEND

CAPS = “clusters”: several locations in close proximity, only one to be recommended

* per the Decision Making Framework, locations on corridors that are not significantly impacted by the GO RER program (i.e. electrification and major track infrastructure improvements) were not considered at this time.

APPENDIX B

Economic Analysis

Economic Analysis vs Financial Analysis

Economic Analysis plays an important role in Business Cases assessment as it measures *value of things that matter to people* and society, broadly taking account of all the ways a project affects people, irrespective of whether those effects are registered in conventional financial accounts. All costs and benefits to society are translated into dollar values for purpose of analysis. These include valuation of

- Travel Time Savings
- Vehicle Kilometres Traveled (VKT)
- Vehicle Operating Cost Savings
- Decongestion
- Safety
- Greenhouse Gas

Financial Analysis deals only with *money spent or received*. The analysis includes:

- Fare Revenue
- Additional Station Operating Costs
- Additional Train Operating Costs
- Capital Costs

Net Present Value (NPV) is an analytical tool that shows the total present value of all future benefits minus the present value of all future costs expressed in monetary terms (dollars). The NPV of the economic benefits and economic costs is a key measure used for this analysis.

NPV and BCR Two Sides of the Same Coin

NPV and BCR are both measures of the same respective things in economic and financial evaluations, but they illustrate them differently.

Net Present Value (NPV)	Benefit Cost Ratio (BCR)
The total present value of all future benefits minus the total present value of all future costs	The indicator of value for money for an option/project It is calculated by dividing the present value of total benefits by the present value of total costs
Net Present Value = Present Value* Benefits - Present Value* Costs	Benefit Cost Ratio = Present Value * Benefits / Present Value * Costs
Value to the economy lost or gained over the period of analysis (in present \$)	Ratio indicating the value of every dollar invested in the project. <1 = losing money for every \$ spent
Shows the \$ value of benefit or loss	Shows the scale of benefit or loss

* **Present value** is the current worth of a future sum of money or stream of cash flows at a specified rate of return