



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)

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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.

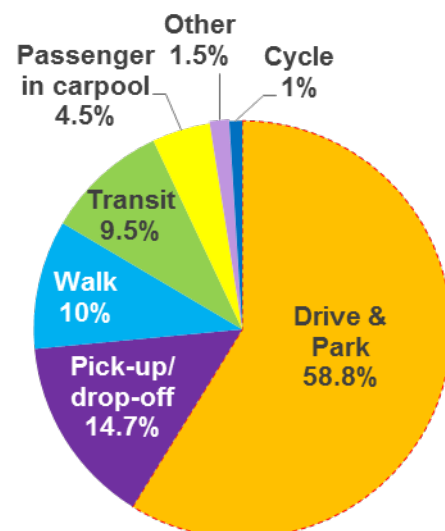
Phase I of the background review of GO station access was completed in Spring 2016. Phase I included the development of station access profiles, research topic papers on active transportation, parking, transit, and pick-up and drop off, as well as a summary background report. As well, Metrolinx engaged 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)



- local transit and ride-sharing.
- 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.
- 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

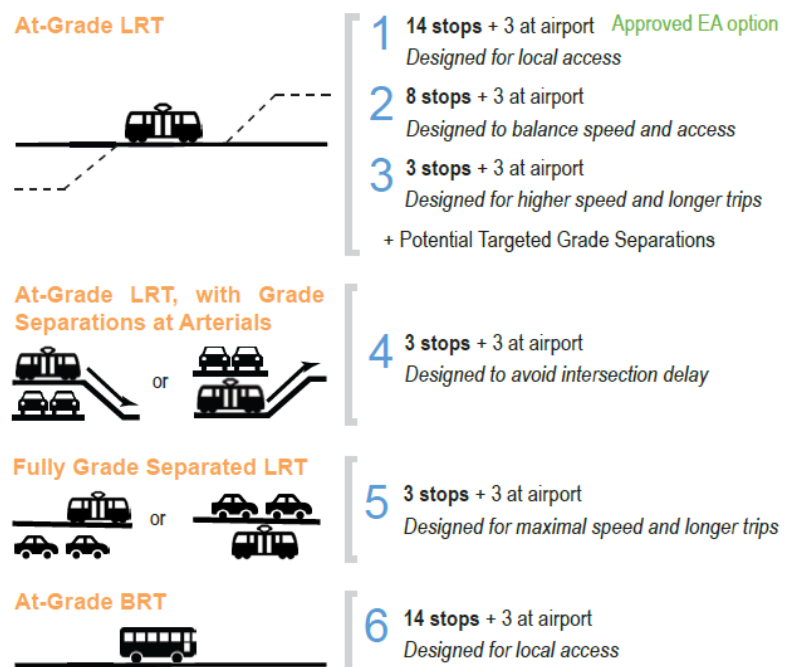


Figure 6: Eglinton West LRT Business Case Summary Table

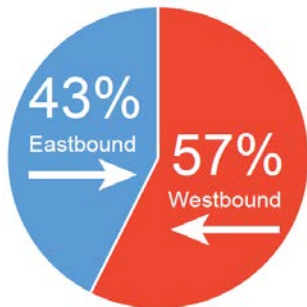
	Option 1 At-Grade 17 Stops	Option 2 At-Grade 11 Stops	Option 3 At-Grade 6 Stops	Option 4 Some Grade Separation 6 Stops	Option 5 Full Grade Separation (Elevated or Underground) 6 Stops	Option 6 BRT 17 Stops
AM Peak Hr. Boardings (Pearson to Mt Dennis)	4100	4150	3350	4850		950
Capital Cost* (2014\$ billions)	\$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)

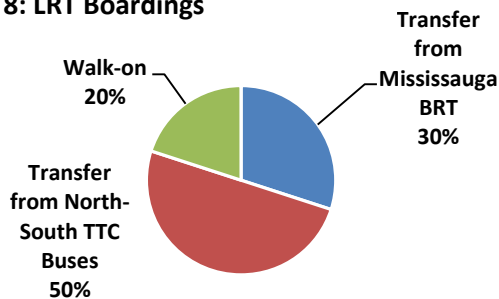


Options with only three stops on Eglinton miss important network connections with many of these bus routes. Riders coming from Mississauga and the west comprise 30 percent of boardings, benefitting from a new east-west rapid transit alternative to the Line 2 subway.

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

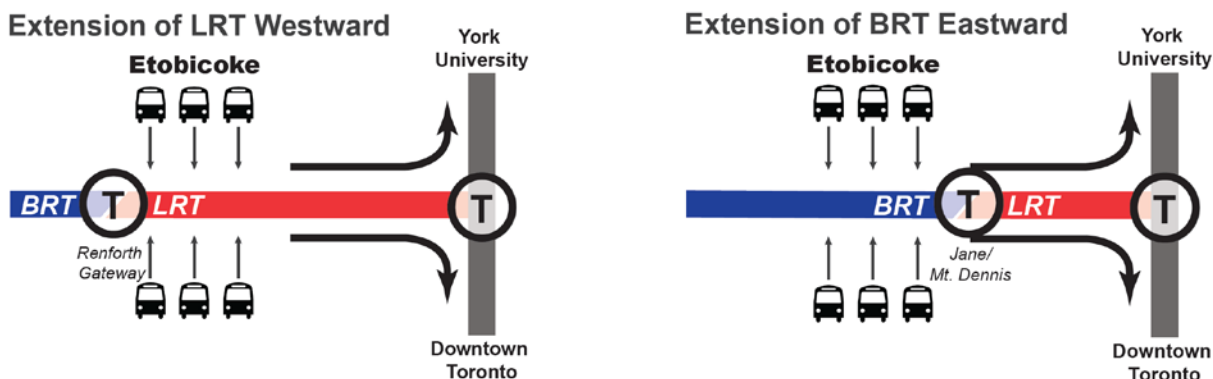
from northern Etobicoke.

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.

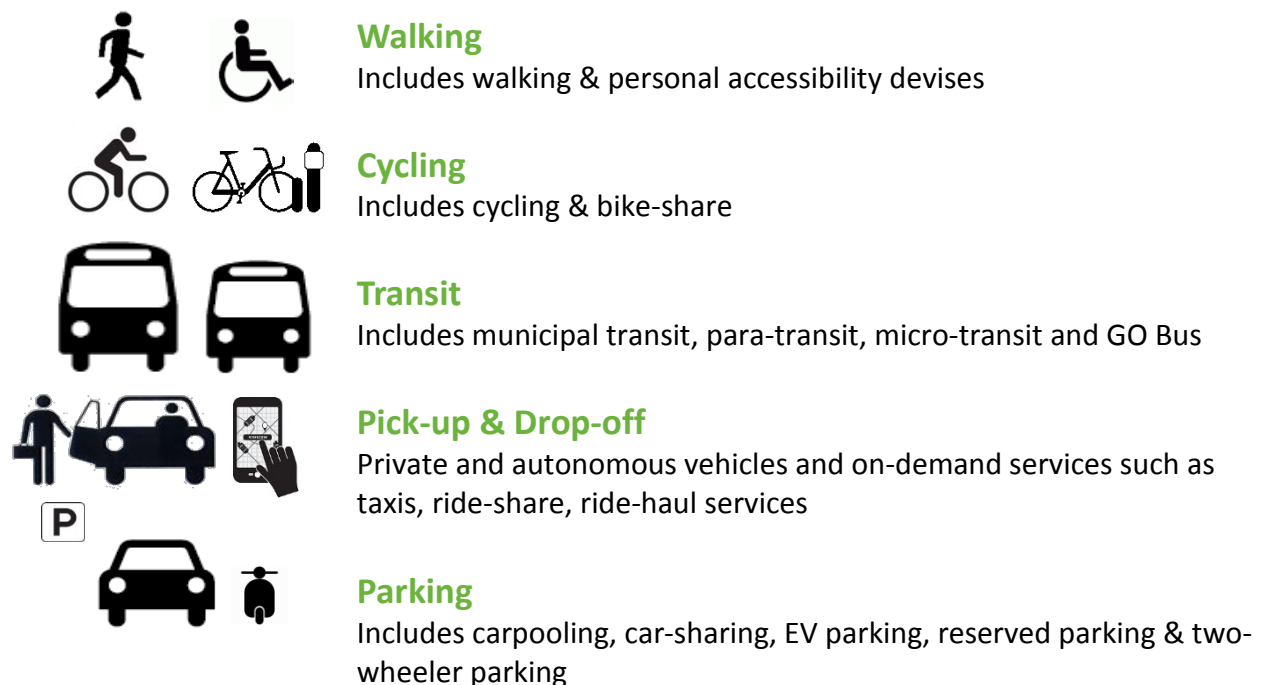


Figure 1: Station access modes being considered in the Station Access Plan Update.

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.

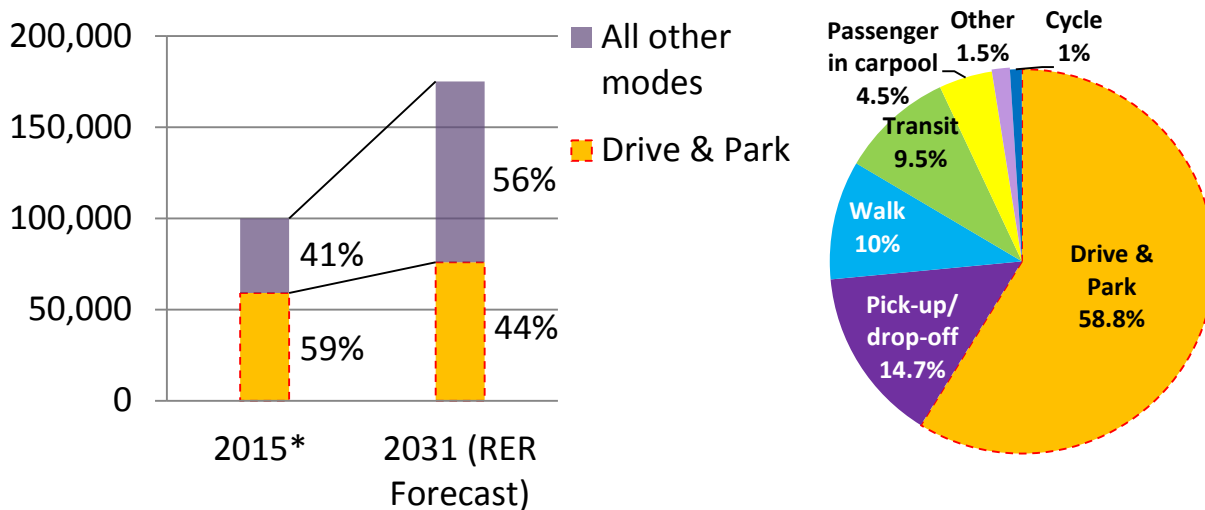


Figure 2: LEFT - Average weekday peak direction boardings (excluding Union) showing how other travel mode use will need to grow to meet ridership forecasts, if planned parking expansion remains at levels set by the 2013 GO Rail Parking and Station Access Plan. RIGHT - Riders travelling to GO stations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

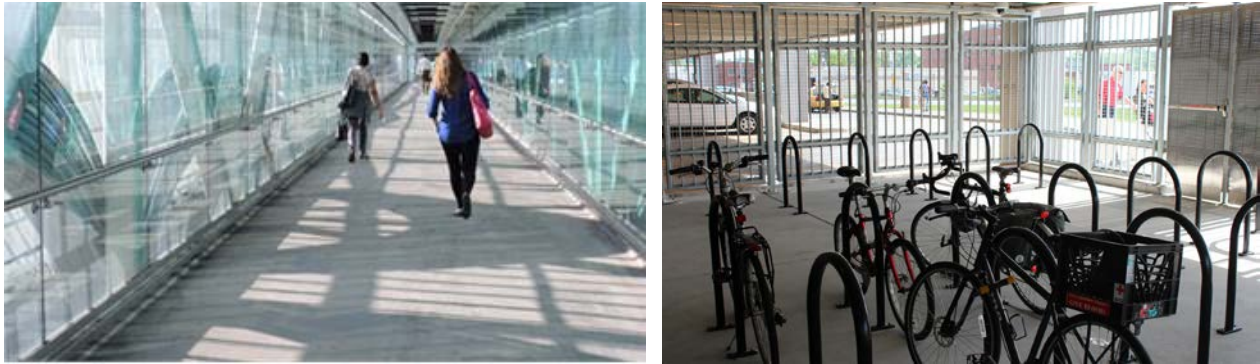


Figure 4: LEFT - The GO Pickering pedestrian bridge spans Highway 401 and the Lakeshore East Rail Corridor. RIGHT - secure bike parking in a Washington D.C. Metro parking structure

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.

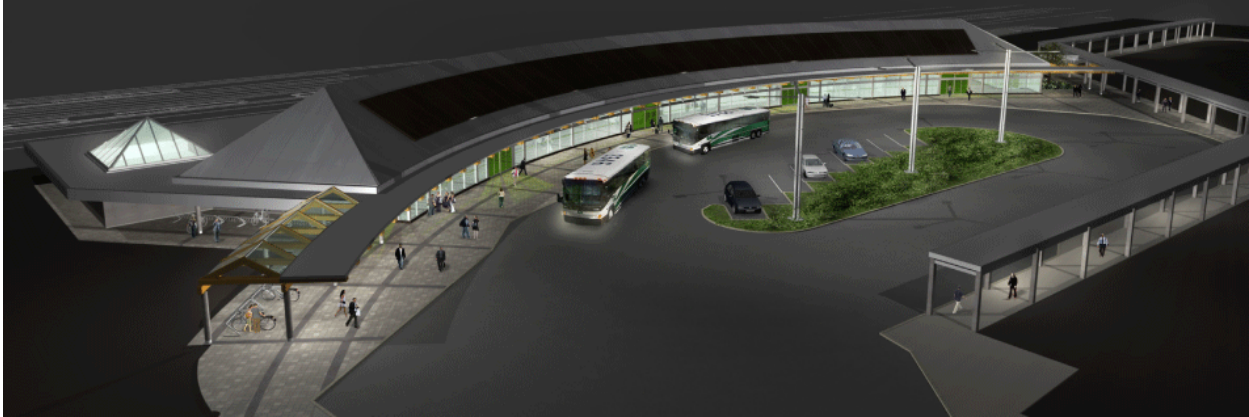


Figure 5: Rendering of new bus loop under construction at Burlington GO station for local and GO Transit

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.

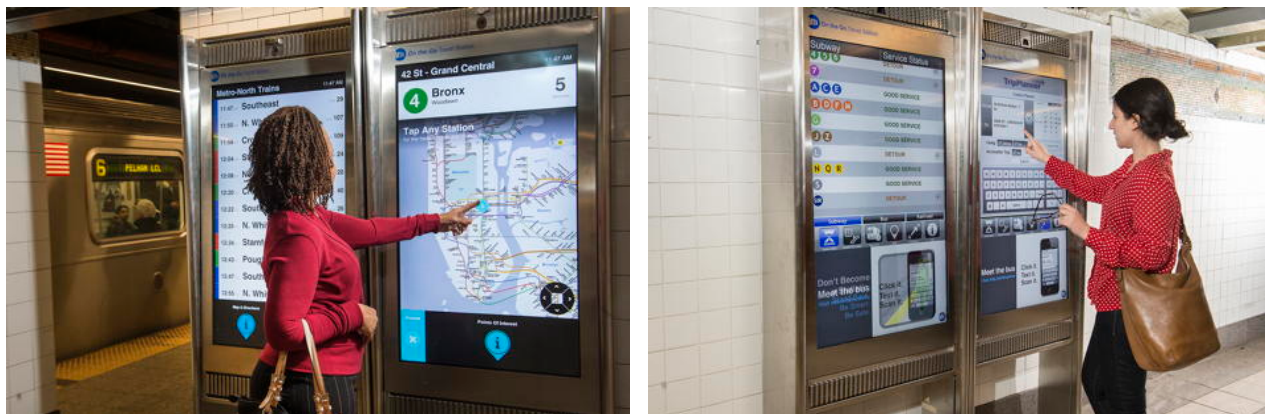


Figure 8: Customer information screens at Grand Central (left) and Penn (right) Stations in New York City let subway customers with information about their complete trip, from planning and service status to information about nearby destinations.

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



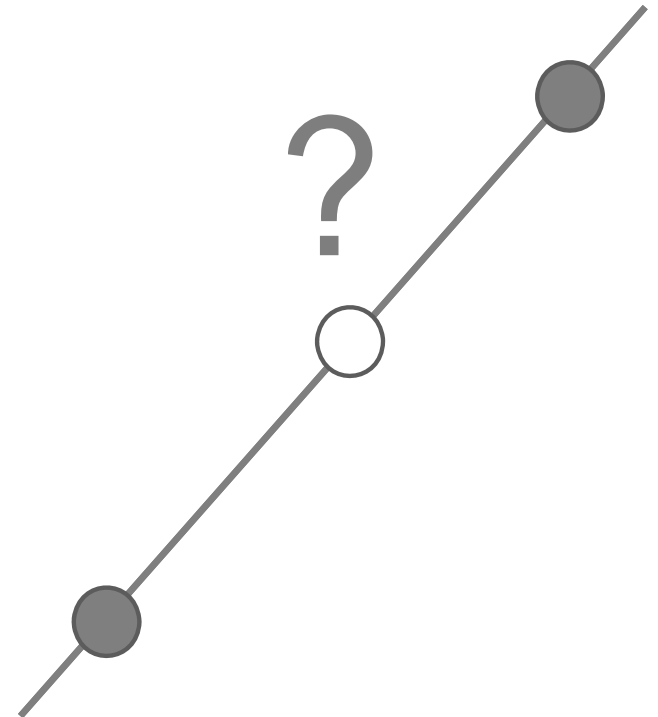
Good connections with local transit



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)

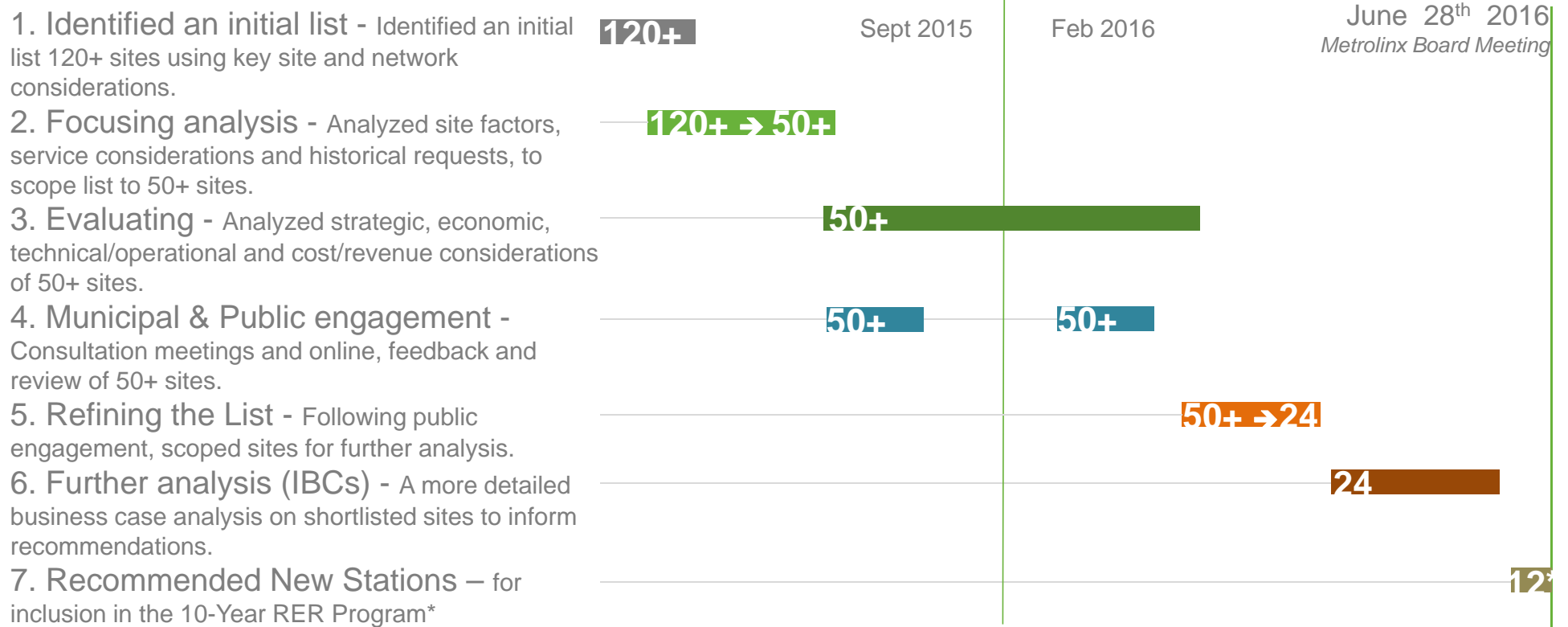


Think Regionally

- 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.



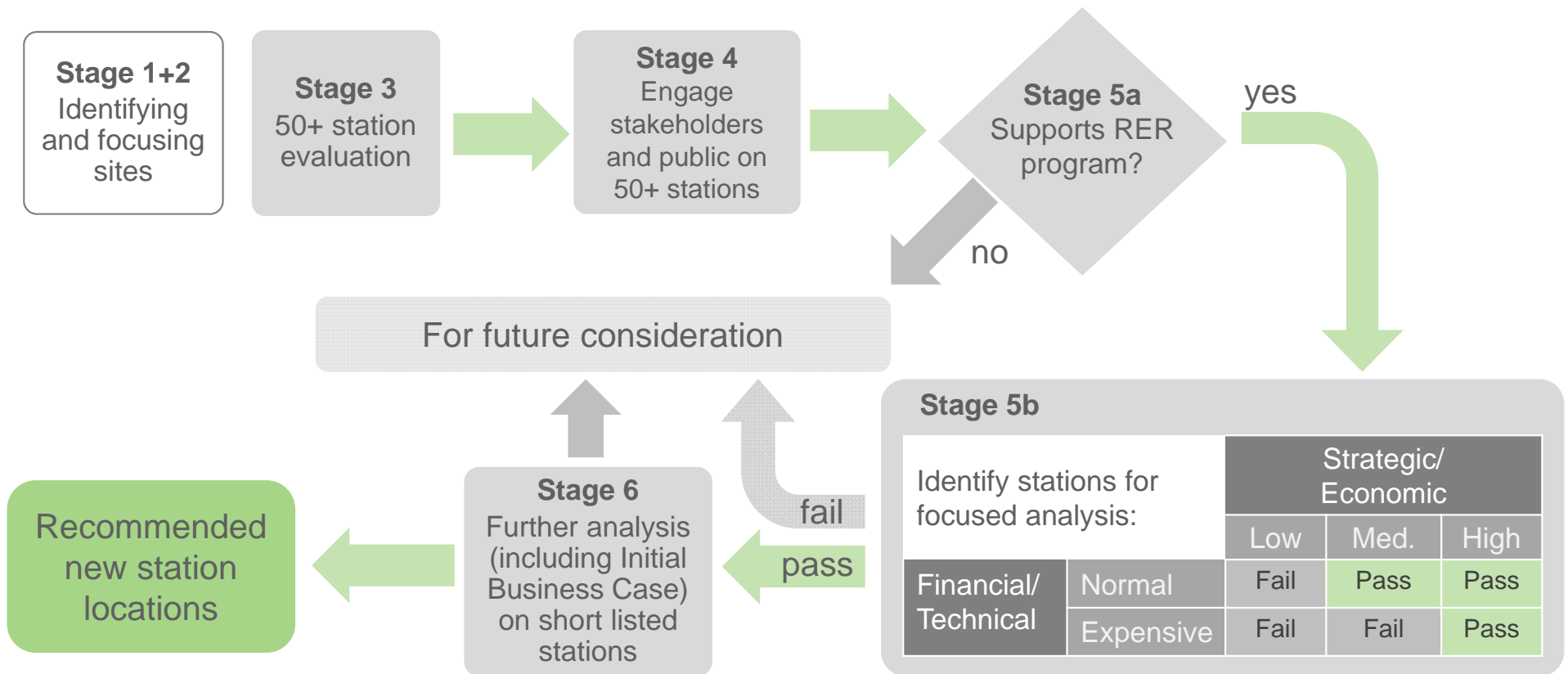
Process to Date



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

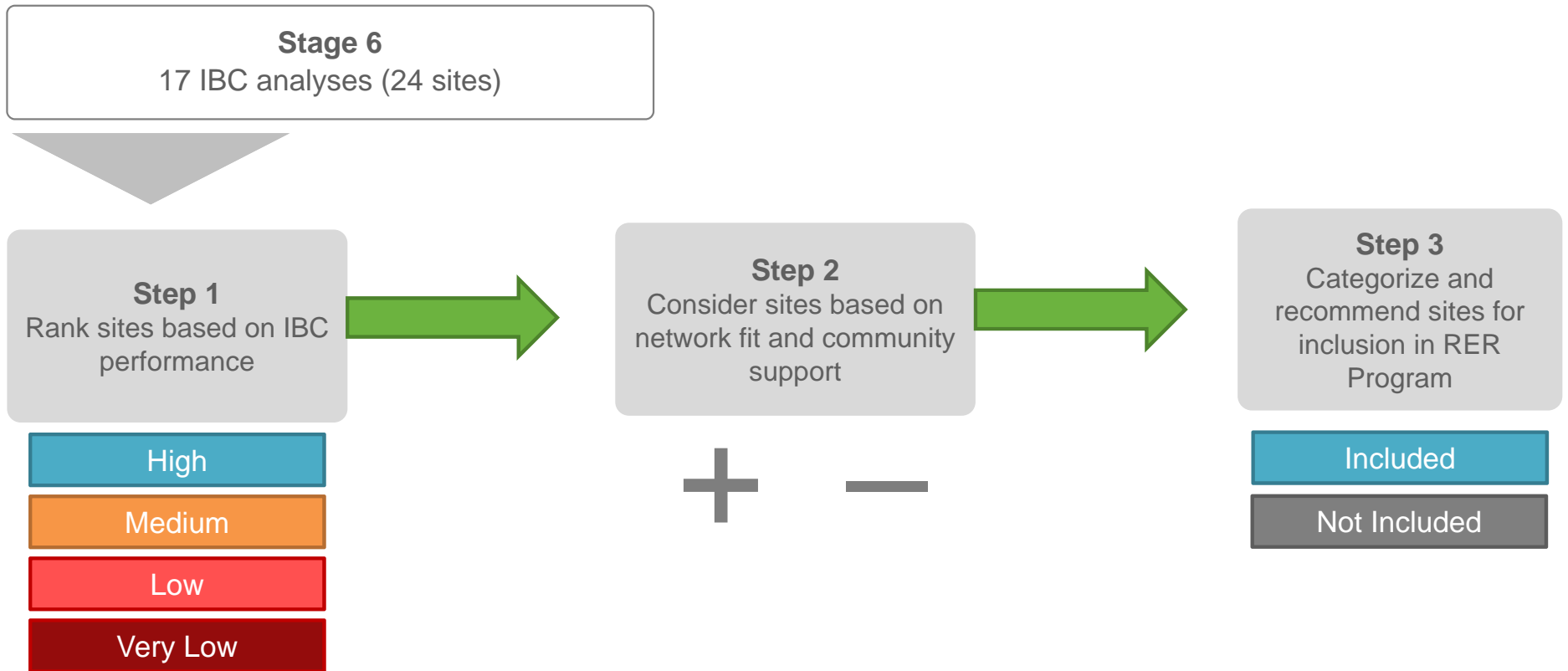
GO Corridor	Location	Municipality
BA	Spadina	Toronto
BA and KI	DOWNTOWN WEST: LIBERTY VILLAGE, DUFFERIN-QUEEN WEST, LANSDOWNE	Toronto
BA	Bloor-Davenport	Toronto
BA	St. Clair (Barrie Line)	Toronto
BA	HWY 7-CONCORD, YORK UNIVERSITY	York (Vaughan), Toronto
BA	Kirby	York (Vaughan)
BA	Mulock	York (Newmarket)
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