

REGIONAL EXPRESS RAIL PROGRAM UPDATE

This document was prepared by Metrolinx for inclusion in this report.

Regional Express Rail (RER) is a \$13.5B transformational program to expand GO service, bringing 15 minute two-way all day electrified service on core segments of the network and expanding service elsewhere by 2024/25. The program will see an increase in GO service from 1,500 to 6,000 trains per week, meaning far more opportunities for residents to travel in and around the city and region. It includes electrification of the Barrie, Stouffville, Lakeshore East, Lakeshore West, Kitchener and Union Station rail corridors.

The RER program presents a significant opportunity to make progress on shared transportation objectives, including the City of Toronto's SmartTrack plan. As one of the largest infrastructure projects in North America, this transit expansion involves:

- Laying more than 150 kilometers of new track;
- New electric trains;
- New and modified infrastructure to accommodate rail traffic;
- Renovating existing GO stations to meet new standards; and
- Constructing new stations to bring transit closer to more residents.

In Toronto, the RER program will include work in and along rail corridors, at Union Station and at other station locations. Toronto plays a critical role in the delivery of the program, as the city is host to Union Station, 18 additional stations which represent a third of current GO stations in the network, and to portions of every corridor, with associated layovers, bridges, crossings, and other infrastructure. As such, Metrolinx will work in close partnership with the City on project delivery requirements, and associated processes necessary to implement this program.

Coordination with the City of Toronto

RER/SmartTrack integration is a significant initiative that requires dedicated time and resources to complete. With this plan, there is significant potential for new and more frequent service to complement the existing transit network. The program is an opportunity to enhance transit infrastructure for generations to come.

Metrolinx is committed to working in partnership with Toronto to ensure RER and SmartTrack infrastructure is constructed in a manner that reflects City input and meets shared objectives. As part of implementing the program, Metrolinx will seek to provide information related to process and secure support and assistance. In some cases, similar to the LRT program, Metrolinx may request streamlined reviews and approvals to assist in meeting schedule.

Previous Metrolinx LRT projects within the City of Toronto have benefited from defined timelines of review by the City. To achieve those timelines, the City has dedicated staff for design coordination and review of Metrolinx submissions. In particular, these projects have had consistent interaction with dedicated staff within Major Capital Infrastructure Coordination, Engineering and Construction Services, Toronto Water, Transportation Services, City Planning, Toronto Building, and others. Implementation of RER and Smart Track will be enhanced by a similar level of dedication within these divisions.

Procurement Approach

Metrolinx is delivering RER in three “packages” of work. This consists of a set of early enabling works that are currently in procurement to be completed mostly by 2020, followed by a program of off-corridor work (e.g., stations and parking) and a program of on-corridor work (e.g., signals, track and electrification) to be procured in 2018 and completed by 2024-25.

Early Enabling Works

These are works in each of the rail corridors that are required to be completed in advance of broader network infrastructure such as track work, signalling, and electrification. This work is currently being procured through a combination of Alternative Financing and Procurement (AFP) and traditional contracts. Within the City of Toronto, the early enabling works include the projects outlined in Table 1.

Table 1. Early RER enabling works within the City of Toronto.

Project	Description	Construction Start
Early GO Rail Station Improvements	Early stations improvements include a variety of off-corridor work on existing stations on the GO Network. Includes: rail platform edge tile installations, new digital signage, elevator modernization, secured bike parking, electric vehicle charging stations, station access, provision for future retail, and State of Good Repair (SOGR).	2019
Stouffville GO Rail Corridor Improvements	This project involves double tracking the corridor from Unionville Station to Scarborough Junction. It includes the realignment of the existing tracks, the addition of a new track, layout/grading work, installation of noise walls, signal works, retaining walls, widening of bridges, extension of pedestrian underpass, crash wall protection, upgrade at level crossings, extension of culverts and protection of existing signals/utilities and Kennedy Station interchange improvements.	underway

Project	Description	Construction Start
Barrie GO Rail Corridor Improvements	Double tracking along the 58-kilometre GO corridor between Union Station and Aurora, three major bridge expansions, new road crossings, and track and signalling to support 15-minute two-way all-day service.	2018
Barrie GO Rail Corridor Stations	Downsview Park GO Station: adjoining the Downsview Park TTC Subway Station currently under construction. Scope includes a new platform and ticket sales. Caledonia GO Station: Located at Eglinton and the Barrie Corridor, and will link the Eglinton Crosstown LRT with the Barrie GO Rail Corridor. Scope includes new platforms, new station building, pedestrian bridge linking to the Caledonia Crosstown Station, and a platform canopy.	underway
Stouffville GO Rail Corridor Stations and Steeles Avenue Grade Separation	Station modifications at Agincourt GO, Milliken GO and Unionville GO stations, and construction of a new road under rail grade separation at Steeles Avenue, adjacent to Milliken GO Station.	2018
Highway 401/409 Rail Tunnel	Construction of a new, two-track tunnel under the Highway 401/409 interchange, including grading, retaining wall(s) and related works from west of Islington Avenue to east of Kipling Avenue.	2017/18
Kipling GO Bus Terminal	Construction of a new bus terminal to accommodate MiWay and GO buses (which will replace the existing facilities at the Islington Subway Station), new accessible pedestrian connections to the GO Rail Platform and TTC subway, and parking replacement for the TTC.	2018
Rouge Hill GO station	Accommodate new third track, new station building, new tunnel, existing platform rehabilitation, new connection to Port Union Waterfront Park, and electrification enabling works.	2019
Lakeshore East GO Rail Corridor (Central Corridor Expansion)	New third track between Guildwood GO station and Beechgrove Drive, which will include grading, retaining walls, culvert extensions and the construction of three new road under rail grade separations at Morningside Avenue, Galloway Road, and Scarborough Golf Club Road.	2019

Project	Description	Construction Start
Lakeshore East GO Rail Corridor (East Corridor Expansion)	New third track between Beechgrove Drive and Durham Junction and includes grading, retaining walls, culvert extensions and the expansion and upgrading of Highland Creek and Rouge River bridges.	2018
Lakeshore East GO Rail Corridor (West Corridor Expansion)	Infrastructure required for a new fourth track between Scarborough Junction and Don River and includes grading, retaining walls and culvert extensions and the expansion of the Danforth Avenue, Warden Avenue, Birchmount Road and Woodbine Avenue bridges and improvements to Danforth GO station.	2019
Davenport Diamond	Eliminate the existing at grade crossing at Mile 4.6 between the single track GO Newmarket subdivision (Barrie Corridor) and the two tracks of the CP North Toronto Subdivision.	2018/19
Lakeshore West GO Rail Corridor Improvements	Includes tunnels and platform upgrades at Exhibition GO station; full station rehabilitation at Mimico GO and Long Branch GO stations; and various other corridor and station improvements.	2019
Kitchener GO Rail Corridor Improvements	Work includes track construction to support RER service levels with allowances for future SmartTrack stations at St. Clair Avenue and Liberty Village, grading, Bloor Street bridge realignment, West Toronto rail path realignment and connection to the City of Toronto Phase 2 Railpath, and Bloor GO station connection to Dundas TTC Subway station.	underway
Union Station Rail Corridor and Revitalization	A variety of initiatives including three new east approach tracks and crossovers to facilitate increases train routing capacity into Union Station; additional west approach mainline capacity and increased track speed capabilities; a new Bay Concourse that increases overall concourse capacity and adds retail and vertical access and a new bus terminal at 81 Bay Street to replace and double the capacity of the current terminal. This bus terminal project is being undertaken in partnership with a private developer.	underway

Off-Corridor Works

The Off-Corridor works include activities such as: parking, station initiatives, state of good repair, new stations and other facilities. These will be procured through multiple AFP contracts. It includes two new GO stations in the City of Toronto (Spadina and Bloor-Lansdowne) and integration with approved City of Toronto SmartTrack stations. Functional plans, developed in collaboration with City of Toronto Planning, have progressed to initial designs.

Geotechnical investigation, subsurface utility identification, and environmental studies are underway. Early public consultations are complete and round one of formal public consultation meetings occurred in October, 2017. Further public consultations are planned for early 2018 for the new stations. Notice of commencement of the environmental assessment through the Transit Project Assessment Process (TPAP) is planned for spring 2018.

A technical advisory committee (TAC) on station work has been established with City of Toronto staff. The TAC will provide support, input and guidance to the development of the reference concept design, TPAP, procurement documents, requirements and the approach for permits, licences and approvals, the review of bid submissions, and other tasks. This work is anticipated to be in procurement in 2018, with construction between 2020 and 2024/25.

In the Metrolinx Business Case lifecycle, Project Definition Business Cases take the recommended option of the Initial Business Case, refine it, and provide more detailed costing and analysis of benefits. Metrolinx is currently in the process of developing Project Definition Business Cases for all of those stations that underwent Initial Business Cases in 2016, including the 11 Toronto sites (Don Yard/ Unilever; Gerrard; Ellesmere; Lawrence East; Finch East; Spadina; Bloor-Davenport; St Clair W (Barrie corridor); Liberty Village; St Clair W (Kitchener corridor); and Park Lawn). Per the report to the Metrolinx Board in June 2016, Metrolinx is also continuing to work with the City on the business case for the Park Lawn site. Additionally, an Initial Business Case is underway for the Highway 27-Woodbine site.

A report on the new stations Project Definition Business Cases will be made to the Metrolinx Board at its meeting on February 16, 2018. This will provide the Board with updated and refined information on the expected benefits associated with these projects, which can be considered as one of multiple factors which contribute to decision-making.

On-Corridor Works

On-corridor work continues to develop. Fixed infrastructure procurement will include works across the whole network including electrification, signalling, track work, telecommunications, and related works, and are currently intended to be procured through an AFP contract.

Metrolinx has initiated procurement for an operator separately. As the system grows from 1,500 to 6,000 trains per week, the operator will work with Metrolinx to finalize plans and accelerate the safe construction and implementation of RER. Metrolinx may make adjustments to the program based on the market input received, and consideration is being given to how Metrolinx might better integrate operations with fixed infrastructure construction.

This work is anticipated to be in procurement in 2018, with construction between 2020 and 2024/25. While most work will be contained within the Metrolinx right of way, over the coming year, considerable coordination with the City on elements including utility

relocations, bridge modifications, bridge barriers, vegetation, noise walls, level crossings and grounding will need to continue so that the procurement captures these requirements.

Environmental Assessments

To support RER, a number of EAs have been completed, are underway or are in preparation. EAs critical to the success of RER are making significant progress, thanks to stakeholder and public engagement and a collaborative approach with municipal partners including Toronto.

For every EA, a series of Technical Advisory Committee meetings are held throughout the EA process and are the primary mode of engagement with the various City departments. These meetings can be and often are supported by engagement at a more senior level as required.

As part of the Electrification EA, Metrolinx has published the Environmental Project Report (EPR), and the Notice of Commencement was issued on June 14, 2017. For that initiative alone Metrolinx undertook:

- 81 Municipal Technical Advisory Meetings
- 32 Public Information Centre (PIC) Meetings
- Attended by a total of over 1400 people
- 17 meetings with Community group/Elected Officials
- 10 meetings with Indigenous Communities
- 20 meetings with Provincial and Federal Regulators
- 9 meetings with Conservation Authorities

A list of EA work within the City of Toronto is included in Table 2. The City is anticipated to be a co-proponent for SmartTrack stations.

Table 2. Environmental Assessment work within the City of Toronto.

Ongoing Metrolinx EA	Project Description	Key Dates
Barrie GO Rail Corridor Expansion	Corridor-wide track and associated infrastructure expansion	October 12th, 2017 – Statement of Completion
Lakeshore East GO Rail Corridor Expansion	Track and associated infrastructure expansion between Don River and Scarborough GO Station	November 20th, 2017 – Statement of Completion
GO Electrification	Assessment of GO Electrified Service	October 12th, 2017 – EA Notice of Completion; December 15th, 2017 – Statement of Completion

Ongoing Metrolinx EA	Project Description	Key Dates
Union Station Rail Corridor East Enhancements	Additional track and associated infrastructure	Early 2018 – EA Notice of Commencement
New RER and SmartTrack Stations	8 new stations	Stakeholder and public meetings occurred this Fall

Stakeholder Engagement & Consultation

Metrolinx recognizes that with construction come impacts to the community that must be worked through with residents and elected officials.

Engagement with the City of Toronto specifically has followed the successful framework that has been established for the Eglinton LRT. Staff work closely together to align environmental assessments and other related engagement opportunities. In addition, Metrolinx and City staff are in regular contact with Councillor’s offices and their staff to provide project information and local updates in coordination with information that is shared with Members of Provincial Parliament and Members of Parliament. All elected officials, including Councillors, receive project information and communications for residents in advance and are provided an opportunity to provide feedback before they are issued. Metrolinx also attends local community fairs and other community engagement opportunities to provide targeted information about local projects.

Metrolinx staff also works with City of Toronto staff on reports to update Council on individual projects and the GO expansion program. Metrolinx staff is regularly available to answer questions from Council when reports include information that is specific to Metrolinx and items under its purview.

Level Crossings

There are 21 level crossings in the City of Toronto. Metrolinx undertook an assessment of all crossings, results of which were shared with city staff for discussion and appeared in a February 17, 2017 public report to the Metrolinx Board.

Fifteen level crossings in the City of Toronto were identified by Metrolinx as being of higher priority for consideration of grade separation. These locations all featured higher levels of projected traffic, were located on Metrolinx-owned rail corridors and included in the 15 minute service area. They are as follows:

- *Barrie Corridor*: Wallace Avenue, Castlefield Avenue
- *Lakeshore East Corridor*: Scarborough Golf Club Road, Morningside Avenue, Galloway Road, Manse Road, Poplar Road
- *Stouffville Corridor*: Steeles Avenue, Finch Avenue, McNicoll Avenue, Danforth Road, Huntingwood Drive, Progress Avenue, Passmore Avenue, Havendale Road

For these higher priority locations, additional consideration was given to each location's assessment, readiness to proceed (e.g. EA status, design work), proximity to station locations, and potential technical challenges. Consideration was also given to the number of projects that could be constructed per corridor.

Out of this exercise, five locations for grade separation were included in the summary of terms agreed to by the Province of Ontario and City of Toronto and approved by City Council at its meeting of November 8, 2016. These are:

- Scarborough Golf Club Road;
- Morningside Avenue;
- Galloway Road;
- Steeles Avenue; and
- Finch Avenue.

Note that within Toronto three of these location (Scarborough Golf Club Road, Galloway Road and Morningside Avenue) were previously announced by the Province of Ontario in 2015 for which planning, design and environmental assessment was already underway.

There is also one location (Wallace Avenue on the Barrie corridor) which will be effectively grade separated as a result of being captured within the footprint of work related to the Davenport Diamond project.

Metrolinx will work with municipal governments to continue to advance planning and design on higher priority locations in order to develop the case for an ongoing investment in grade separations. This includes locations that were the subject of City requests for assessment at its Council meeting of November 8, 2016. Metrolinx will also be working to implement a level crossing plan that will include improvements in infrastructure at level crossings, safety and education initiatives and public consultation through a Community Advisory Committee.

Bells & Whistles

Train whistling requirements at stations are controlled through the Canadian Rail Operating Rules (CROR) as prescribed under the Canada Railway Safety Act and approved by Transport Canada. Metrolinx is supporting the Ministry of Transportation in its request to discuss with the federal government options for communities, while balancing the need to ensure public safety.

Hydrogen Feasibility Study

A feasibility study on the use of hydrogen fuel cells as an alternative technology for electrifying GO rail service and the UP Express is underway. Ontario is committed to running electrified trains on the GO rail network by 2025. Studying the feasibility of hydrogen rail technology is part of due diligence to ensure that Metrolinx chooses the appropriate technology. Metrolinx brought industry leaders together for a symposium on November 16 to explore the potential application of hydrogen fuel cell technology and lessons learned from other jurisdictions.