

To: Metrolinx Board of Directors
From: Peter M. Zuk
Chief Capital Officer, Capital Projects Group
Date: December 7, 2017
Re: **Capital Projects Group Quarterly Report**

Recommendation

That this report is received for information.

Executive Summary

The Capital Projects Group (CPG) continues to advance a large and growing program, involving signature projects including the Regional Express Rail (RER) program, the Eglinton Crosstown Light Rail Transit (LRT), Finch West LRT, Hurontario LRT, Hamilton LRT and the Bus Rapid Transit (BRT) program.

CPG has made progress in the advancement of RER enabling works projects using both the Alternative Financing and Procurement (AFP) and traditional procurement models. Progress also continues on rapid transit projects as construction on the Eglinton Crosstown LRT moves forward and the Hamilton and Hurontario LRT projects prepare documentation required to secure an AFP contractor.

CPG is pleased to report the following accomplishments this quarter:

- the EA for the Barrie Rail Corridor Expansion was approved by the Minister of Environment and Climate Change on October 12, 2017;
- the EA for the Lakeshore East (Don River to Scarborough GO Station) Expansion was approved by the Minister of Environment and Climate Change on November 20, 2017;
- the EA for the 407 and Bronte Bus Park and Ride was approved by the Minister of Environment and Climate Change on October 24, 2017;
- the Notice of Completion for the Electrification Program EA was issued on October 11, 2017;
- the Request for Proposals (RFP) for the East Corridor Expansion build-finance contract was issued in November 2017;
- the RFP for the new bus terminal at Kipling Station closed on October 12, 2017;
- the Cooksville Station Redevelopment Project achieved Financial Close on November 3, 2017;
- the RFP for the new crew centre design-build project closed on October 3, 2017;

- the RFQ for the Milton Corridor design, build and finance project issued on November 15, 2017; and
- the RFP for the Rutherford GO Station design, build and finance project was released on November 21, 2017.

A summary of Metrolinx's major capital projects is shown in Table 1.

Table 1: Project Status

Corridor	Project Stage	Approved Budget for Capital Construction	In-Service Date ¹
Eglinton Crosstown LRT	Construction	\$5,300,000,000 ²	2021
Finch West LRT	Procurement	\$1,000,000,000 ²	2022
Hurontario LRT	Procurement	\$1,400,000,000 ³	2022
Hamilton LRT	Procurement and Planning	\$1,000,000,000 ³	2024
Viva BRT	Various	\$1,400,000,000 ²	Various
Total Rapid Transit	Various	\$10,100,000,000	Various
Barrie	Design	\$1,506,000,000	2025
Kitchener	Design	\$1,534,000,000	2025
Lakeshore East	Design	\$735,000,000	2025
Lakeshore West	Design	\$401,000,000	2025
Milton	Design	\$4,000,000	2025
Stouffville	Design/Construction	\$581,000,000	2025
USRC	Design	\$682,000,000	2025
Network Infrastructure ⁵	Design	\$4,493,000,000	2025
Vehicles	Design/Study	\$2,583,000,000	2025
Parking, Access & Property	Design/Study	\$981,000,000	Various
Total RER		\$13,500,000,000^{3&4}	
Bowmanville Extension	EA and Design	\$550,000,000 ³	2024
Kitchener Extension	EA and Design	\$2,250,000,000 ⁶	2024
Niagara Extension	EA and Design	\$160,000,000 ³	2023
Total Extensions		\$2,960,000,000	

¹ Actual in-services dates are subject to schedules submitted by the successful AFP bidders. 2025 indicates the announced timeline of '2024 / 25'.

² 2010\$

³ 2014\$

⁴ RER project budgets have been updated to reflect the current budget baseline.

⁵ Includes Electrification and Signals.

⁶ 2016\$

Background

RAPID TRANSIT

LRT Update

Eglinton Crosstown LRT

Crosslinx Transit Solutions (Crosslinx), the consortium delivering the design-build-finance-maintain (DBFM) contract for the Eglinton Crosstown LRT project, is proceeding with design and construction.

Construction is in progress across Eglinton Avenue. At the Eglinton Maintenance and Storage Facility, steel erection is nearing completion, roof and wall cladding is ongoing, and civil infrastructure and track assembly activities continue in the yard area. Utility relocations, preparation for excavation (shoring) and excavation is in progress at the 15 underground stations, with traffic diversions in place to ensure safety. At Keele and Caledonia Stations, two of the stations being constructed using the cut and cover method, Crosslinx has excavated down to the level of the twin bored tunnels. At Oakwood and Laird Stations, two of the stations being constructed using the sequential excavation method (or mining method), Crosslinx has started mining the station caverns.

Crosslinx continues to fill the invert of both the east and west tunnels with concrete to provide a flat base where the track will be installed. This work is progressing west of Yonge Street.

Preparatory activities including removal of medians and utility relocations are already underway in the at-grade portion, east of Brentcliffe Road, to support the upcoming road widening and guideway construction.

Finch West LRT

In May 2017, Alstom was confirmed as the new vehicle supplier for Finch West LRT and the RFP for the DBFM contract for the Finch West LRT project has resumed. The final design presentation meetings were conducted in mid-September. One ad hoc commercially confidential meeting requested by a proponent was held on October 17, 2017. Currently, the proponents are working on finalizing responses to the RFPs in order to meet the target RFP Close.

Utility works continue on various sections of the corridor.

Hurontario LRT

Design presentation meetings commenced in October. Memoranda of understanding with the cities of Mississauga and Brampton and the Region of Peel have been executed to allow negotiation of the other agreements, such as master agreements, required to advance the project. The project team signed another memorandum of understanding

with the Ministry of Transportation to outline some of the more detailed items such as costs and commitments.

Preparatory works to relocate telecommunication utilities have started at the Port Credit GO and Cooksville GO stations.

Community engagement is progressing through open houses, corridor committees and canvasses of the corridor.

Hamilton LRT

Due diligence activities continued as the project team conducted sub-surface utility, environmental, and geotechnical investigations to encompass the three kilometre extension of the route from the Queenston Traffic Circle to the Eastgate Square shopping centre.

On November 24, 2017, Metrolinx President and CEO Phil Verster sent a letter to the Hamilton City Manager Chris Murray indicating that the Province and Metrolinx strongly recommend that the DBFOM model be retained for the project. The letter also set out the commercial and operational obligations the City of Hamilton would assume under contract with Metrolinx if it were to become the LRT operator. This letter was in response to a motion passed by Hamilton City Council in August 2017 requesting that Hamilton Street Railway operate and maintain the future LRT line.

The City has been advised that Metrolinx will continue to proceed on the assumption that the project will be delivered through a DBFOM model, with ProjectCo delivering the operations unless the City formally confirms in the form of a council resolution by January 24, 2018, their agreement to deliver the operations in accordance with the conditions of the letter.

Metrolinx is working with the Province on a Treasury Board submission to obtain approval to adjust the project budget to accommodate the three kilometre extension to Eastgate Square announced by the Minister of Transportation in May 2017. Pending the response from the City, a change to the procurement model may also be added to this submission for approval.

Bus Rapid Transit (BRT) Update

VivaNext BRT

Yonge Street - Viva Bundle - Richmond Hill to Newmarket

The final design and field investigations are ongoing and utility relocations continue in all three segments of the line. Road widening work is commencing on the north segment.

Highway 7 - Vaughan to Richmond Hill

Construction continues on the Hwy 400 bridge widening. Utility relocation work is progressing and storm sewer installation and roadwork have begun on segments of the line.

Highway 7 - Vaughan Metropolitan Centre

Construction is advancing and on track.

Bus Infrastructure

Construction on the Kitchener bus maintenance and storage facility continues. The park-and-ride program is in various stages of planning, design, procurement and construction. The EA for the 407 and Bronte Bus Park and Ride was approved by the Minister of Environment and Climate Change on October 24, 2017.

The Renforth Station was placed into service and opened for customers on the Mississauga Transitway on November 22, 2017. This completes the current phase of the Mississauga Transitway program.

REGIONAL EXPRESS RAIL

RER is using the AFP delivery model for many of the enabling works projects, in total there are 15 enabling works contracts. The Cookville Station AFP project is the first to move to contract award. The Lakeshore East - East Corridor Expansion, Stouffville Stations, Highway 401/409 Rail Tunnel, and Kipling Bus Terminal projects are moving through the RFP stage and the Rutherford Station, Lakeshore East - Central Corridor expansion build-finance contract, and Union Station Revitalization projects are preparing for RFP release.

Off Corridor Infrastructure Update

In the course of developing preliminary designs for the Early Station Improvements project, savings were identified on certain components of work being rolled out across numerous stations, reducing the total project cost estimate below the threshold for AFP delivery. The procurement strategy will change to traditional design build as a result.

Due diligence and environmental studies are ongoing for the New Stations and Existing Stations Renovations AFP. Initial Preferred Designs are complete for all 12 new stations, and now proceeding into detailed design. The first round of public consultation meetings for new Smart Track stations is complete. The first round of public consultation meetings for new RER stations will be held in early 2018.

The Off Corridor procurement package continues to develop. With further refinement of the RER program procurement strategy, it was decided to immediately initiate the upgrade program for a selected set of existing stations. Off corridor work will now focus

on major renovations at existing stations and advancement of concept development, including the EA for 12 potential new stations.

Corridor Infrastructure Update

Barrie Corridor

Work continues on the train layover facility in Bradford to support additional service. The Bradford layover was put into service in September 2017, while other works including wayside power are still being finalized.

The second City of Toronto Design Review Panel for the Davenport Diamond Grade Separation project was held on October 12, 2017.

The Environmental Assessment (EA) for the Barrie Rail Corridor Expansion was approved by the Minister of Environment and Climate Change on October 12, 2017.

Construction of the Downsview Park GO Station, including the Sheppard Avenue bridge extension, is substantially completed.

The Rutherford GO Station project RFP was released on November 21, 2017.

Kitchener Corridor

In September and October, Metrolinx staff met with municipal councils in Waterloo Region, the cities of Kitchener, Waterloo and Guelph, and Guelph Eramosa Township to discuss RER and work being undertaken in these municipalities. In September, Metrolinx staff participated in a charrette hosted by the City of Brampton and Ryerson University for the University development in the vicinity of Brampton GO Station. There was continued collaboration between Metrolinx staff and the Region of Waterloo on the Kitchener transit hub development.

Design work is underway for the Bramalea GO Station and parking structure. Site investigations including surveys, real estate transaction due diligence, and geotechnical investigations were undertaken on the site as well as on the adjacent site where there will be temporary parking to replace the parking in the active construction zone.

The first phase of track construction for the fourth track project between Union Station and the Airport Spur is underway.

Lakeshore East Corridor

The pedestrian bridge at the Ajax GO Station was opened to the public in October 2017.

The new GO and VIA Oshawa station building was opened in October 2017.

The RFP for the East Corridor Expansion build-finance contract was issued on November 17, 2017.

The EA for the Lakeshore East (Don River to Scarborough GO Station) Expansion was approved by the Minister of Environment and Climate Change on November 20, 2017.

The Request to Qualify and Quote for TA services for the Bowmanville Extension commenced in September 2017. A Technical Advisory Committee meeting with key stakeholders including CP, MTO, Region of Durham, Town of Whitby, City of Oshawa, and Municipality of Clarington were held in October 2017.

Lakeshore West Corridor

The construction tender to complete enabling works involving earthworks, drainage, and underground utility modifications, to accommodate a future Confederation GO Station in Stoney Creek, closed in September 2017. The contract was awarded in November 2017, and mobilization work began in November 2017.

Enabling works for the Aldershot GO Station south parking expansion project commenced in October 2017. The enabling works project will provide flood storage capacity and enhancements to the hydrologic conditions in Grindstone Creek, which will facilitate the development of Metrolinx lands currently in a floodplain.

The Lakeshore West Package 1 project, which consists of station redevelopments, station upgrades, grade separations, bridge replacements, layover, trackwork, and corridor infrastructure to support electrification, is in preparation for the RFQ release.

Significant progress was made related to planning activities for the Niagara Extension project. Site plan options for the future Grimsby GO Station were reviewed with stakeholders and the preferred option was selected in November 2017. CN, the owner of the rail corridor, continued planning work for corridor infrastructure between West Harbour GO Station and Confederation GO Station in November 2017.

Milton Corridor

The RFP for the new bus terminal at Kipling Station closed on October 12, 2017.

The Cooksville GO Station Redevelopment Project achieved Financial Close on November 3, 2017.

The RFQ for the Milton Corridor design, build and finance project, which consists of an expansion of Milton GO Station, redevelopment of Meadowvale GO Station and a new Stations Operations West Facility was issued on November 15, 2017.

The Milton Corridor Capacity Study was completed and the final draft of the report is underway, following an extension to allow for the study of a scenario considering the potential impact of express trains.

Richmond Hill Corridor

Design work for a new station building, platform rehabilitation and stairs providing connectivity from Major MacKenzie Drive to the Richmond Hill GO Station platforms is progressing.

Stouffville Corridor

Evaluation of the responses to the RFP for the Stouffville Stations and Grade Separation AFP project is currently underway.

The EA for the expansion of the Lincolnville Layover Facility is progressing with due diligence requirements underway.

Union Station Rail Corridor

The detailed design for tracks, bridges, and retaining structures for the East Track Enhancement Project is progressing and the EA is 90 per cent completion.

The vertical access construction contract for Bay Concourse was awarded in October 2017 and construction commenced in November.

The Union Station Structure South rehabilitation commenced in October 2017. This work includes geotechnical investigation, design of structural steel erection scheme and shoring system, and preparation of Composite Utility Plan and other submittals.

Network Infrastructure Update

Network Signals and Communication

The Technical Advisor for the signalling program is currently developing the project-specific output specifications for all signalling work related to on-corridor infrastructure for Package 3. This signalling work includes enhanced train control, new signals related to track expansion work, and electrification readiness.

An interim design review milestone for the Union Station Rail Corridor signalling subsystem was achieved in September 2017. The bungalow foundation work has begun in the east zone while the cable containment installation is ongoing in both the east and west zones.

Renovations of the Don Yard Business Resumption Center are proceeding on schedule.

The GO Transit Train Control System is progressing toward an interim design review milestone. The project team is continuing to review Metrolinx's comments on various system and design documents.

The Switch Machine Enabling Works project has completed all switch machine replacement work in the Scott, Cherry and John Street areas. This is an important milestone in the upgrade of the signalling system in Union Station Rail Corridor.

Network Facilities

Construction of the Network Operation Centre is progressing on schedule. Construction on the fuel system upgrade at the Willowbrook Rail Maintenance Facility in Etobicoke is also progressing on schedule with no safety incidents to report. The RFP for the design-build of the new crew centre closed on October 3, 2017.

Construction of the new Whitby Rail Maintenance Facility has progressed safely and on schedule. As part of commissioning, Metrolinx brought a four-piece consist to the site to perform dynamic commissioning activities in various shops in June and then in November 2017 for a period of two weeks each time. Substantial completion is expected by the end of the month.

RER Operator

On July 24, 2017, the RFQ for an RER Operator was issued. Based on feedback received from the market during the Operator procurement process, the process has been extended and will be adjusted to reflect a shift towards a DBFOM model for delivery of the on-corridor works for RER. The Operator procurement has been adjusted to a pre-qualification opportunity where Metrolinx will list the pre-qualified firms for DBFOM proponents to potentially partner with.

Electrification

The Notice of Completion for the GO Rail Network Electrification Transit Project Assessment Process was issued on October 11, 2017. Metrolinx continues to assess the viability of Hydrogen as an alternative to the overhead wire technology to achieve electrified service.

Respectfully submitted,

Peter M. Zuk
Chief Capital Officer, Capital Projects Group