

To: Metrolinx Board of Directors
From: Peter M. Zuk
Chief Capital Officer, Capital Projects Group
Date: September 14, 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 like the Regional Express Rail (RER) program, the Eglinton Crosstown Light Rail Transit (LRT), Finch West LRT, Hurontario LRT, Hamilton LRT and Bus Rapid Transit.

CPG has made progress in the advancement of 15 RER enabling works projects using the Alternative Financing and Procurement (AFP) model. Progress also continues on Rapid Transit (RT) 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 continues to refine the RER program's scope, schedule and project budgets, giving careful attention to contract interdependencies to ensure an on-time delivery of the program. The implementation of new systems, controls and processes will assist in monitoring and reporting progress, providing timely and fact based decision making.

CPG is pleased to report the following accomplishments this quarter:

- the Request for Proposal (RFP) to design, build, finance, operate and maintain the Hurontario Light Rail Transit (LRT) project was released to the three shortlisted teams on August 17, 2017;
- the RFQ for the Barrie Rail Corridor Expansion Grading project was released on June 8, 2017; and
- the technical advisor (TA) for the Bowmanville Extension project was awarded to Stantec Consulting Ltd. in September 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 RT | 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 | Design | \$550,000,000 ³ | 2024 |
| Kitchener Extension | Design | \$2,250,000,000 ⁶ | 2024 |
| Niagara Extension | 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 consortia delivering the design-build-finance-maintain (DBFM) contract for the Eglinton Crosstown LRT project, are proceeding with design and construction.

Construction is in progress across Eglinton Avenue. At the Eglinton Maintenance and Storage Facility, concrete foundation works are complete, building steel erection is nearly complete and cladding installation continues. Utility relocations, traffic diversions, preparation for excavation (shoring) and excavation is in progress at the 15

underground stations. Mining activities have started on the station caverns at the Oakwood and Laird Stations. East and west early tunnel mining has been completed and the only remaining surface work is the removal of the material that has been excavated.

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

Finch West LRT

In May 2017, Alstom was confirmed as the new vehicle supplier for Finch West LRT and the RFP for the Design Build Finance Maintain (DBFM) contract for the Finch West LRT project has resumed.

In June 2017, the proponents were informed that Alstom would be the LRV supplier and that key procurement dates were revised.

Also in June 2017, the Government of Canada announced funding of up to \$333 million for the Finch West LRT.

Hurontario LRT

In June 2017, Metrolinx and IO announced the three shortlisted teams to design-build-finance-operate-maintain the Hurontario LRT project from the Request for Qualifications (RFQ). The RFP was issued to the shortlisted teams on August 17, 2017.

Hamilton LRT

The Ministry of the Environment and Climate Change approved the Environmental Project Report Addendum for the Hamilton LRT project in August 2017.

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.

The project was originally targeted to open in December 2018. Due to delays in completing the Utility Relocation Program, it has had a ripple effect that has delayed the start of roadway construction, resulting in the schedule shifting and project opening by the end of 2020.

Highway 7 - Vaughan to Richmond Hill (H2)

The Centre Street water main replacement works were completed in July 2017. Construction continues on the Hwy 400 bridge widening.

Highway 7 - Vaughan Metropolitan Centre (H2 VMC)

Construction of the Highway 7 VMC BRT 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.

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 Cooksville 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

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 new station construction, including the design and construction of 12 new stations. The RFQ for the Early Stations Improvements project was released on July 28, 2017.

Corridor Infrastructure Update

Barrie Corridor

To support train service in both directions, work continues on the train layover facility in Bradford and the Double Track project between York University and Rutherford GO Stations.

The fourth Davenport Diamond Community Advisory Committee meeting was held on June 26, 2017 as a Public Design Workshop.

The RFQ for the Barrie Rail Corridor Expansion Grading project was released on June 8, 2017 and includes double track expansion on the Barrie line between Union Station and Aurora GO Station.

The Downsview Park Station is 80 percent complete, including the Sheppard Avenue bridge extension. The station is expected to open in conjunction with the Toronto-York Spadina subway extension (TYSSE).

The Dufferin Bridge Expansion was completed on time in June 2017 and handed over to the City of Toronto. This work included accommodations for a future rail path and tie-in to a new City of Toronto park.

Kitchener Corridor

The construction contract for the Bramalea GO Station multi-level parking structure and master plan was awarded in August 2017. To offset impacts to parking, temporary parking in the vicinity is being pursued. This project is part of RER Package 1.

The contract for the construction of the fourth track from Nickle to Highway 427 was awarded in spring 2017 and construction began in July 2017.

The 401 Tunnel design-build-finance RFP closed on July 20 with proposals received from all three bidders.

Lakeshore East Corridor

The RFQ for the Central Corridor Expansion build-finance contract was issued in August 2017.

The Request to Qualify and Quote for TA services for the Bowmanville Extension closed on July 5, 2017 with the contract awarded in September 2017.

Lakeshore West Corridor

The construction tender to complete enabling works involving earthworks, drainage, and underground utility modifications, to accommodate a future Confederation Station in Stoney Creek, was released in July 2017.

Milton Corridor

The RFP for the new bus terminal at Kipling station was released April 3, 2017 and is anticipated to close in October 2017. A purchase order has been issued to start the Toronto Hydro utility relocation work which is required as enabling work to the main contract, and discussions are ongoing to finalize the design.

The Milton Corridor Capacity Study was completed and the final draft of the report expected in September 2017, following an extension to allow for the study of a scenario considering the potential impact of express trains.

Richmond Hill Corridor

The design-build contract for the construction of a temporary station and platform extension at Oriole GO Station was awarded in June 2017 and construction commenced in July 2017. The relocation is required due to construction on the adjacent highway ramp lead by the Ministry of Transportation.

For the Richmond Hill GO Station, design works for new station building, platform rehabilitation and stairs providing connectivity from Major MacKenzie Drive to the station platforms are progressing.

Stouffville

Construction on the Stouffville Corridor second track is underway. Increased coordination between the contractor and Operations is required due to additional train services that started in June 2017.

The RFP for interested parties to design, build and finance the Stouffville Stations and Grade Separation AFP project is currently in-market.

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 nearing 75% completion and the EA Project report is at 80% completion. The first public information session was held in June 2017.

The Union Station Enhancement Project (Heritage Restoration Enabling and Early Works) was approved for award in August 2017.

Downtown Bus Terminal

The new Downtown Bus Terminal, a transit oriented development that includes two new commercial buildings connected by a one-acre elevated park over the rail corridor project broke ground in June 2017.

Network Infrastructure Update

Network Signals and Communication

The TA for the signalling program is currently developing the Project Specific Output Specifications for all signalling work related to on corridor infrastructure for Package 3.

USRC Cable containment installation has continued on-site in both the east and west zones.

Toronto Hydro connections to the three USRC signalling Power Distribution Modules began in January 2017. Commissioning of two of the three Power Distribution Modules was completed in July and August 2017.

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

Package 3 signalling work includes Communications Based Train Control (CBTC), safety improvements, track expansion, and electrification readiness. Metrolinx has issued a two stage signalling prequalification for all the signalling work. The first stage was completed in May 2017 with five signalling suppliers satisfying the mandatory requirements and therefore deemed qualified to take part in the second stage. The second stage was issued in August 2017. The approved list of signalling suppliers will be issued with the Package 3 - Corridor Infrastructure RFP.

Network Facilities

Construction on the fuel system upgrade at the Willowbrook Maintenance Facility in Etobicoke is progressing well. The RFP for the design-build of the new crew centre was issued in July 2017.

Construction of the new East Rail Maintenance Facility (ERMF) is on schedule. As part of commissioning, GO brought a four-piece consist to the site to perform dynamic commissioning activities in various shops in June 2017 for a period of two weeks.

Early Operator

On July 24, 2017, the RFQ for an RER Operator was issued. The Operator is to be engaged in advance of the corridor infrastructure work for RER to assist in defining infrastructure required for optimized service. This strategy also enables the Operator to improve existing rail operations in the short term and engage with the ultimate infrastructure proponent to validate the infrastructure enhancements and phasing of implementation.

Electrification

The electrification project team continues to develop the procurement documents to ensure alignment with the procurement strategy and timeline for the RER program. As part of the Electrification EA Metrolinx has published the EPR, and the Notice of Commencement was issued on June 14, 2017. Formal public consultation meetings were held in June and July 2017. In parallel to the Electrification EA, 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