

To: Metrolinx Board of Directors

From: Peter M. Zuk  
*Chief Capital Officer, Capital Projects Group*

Date: March 8, 2018

Re: **Capital Projects Group Quarterly Report**

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## Recommendation

That this report is received for information.

## Executive Summary

Since the last quarterly update in December 2017, the Capital Projects Group (CPG) continues to advance a large and growing program, involving signature projects in the Regional Express Rail (RER) and Bus Rapid Transit (BRT) programs, as well as Light Rapid Transit (LRT) projects: the Eglinton Crosstown, Finch West, Hurontario, and Hamilton.

CPG has made progress in the advancement of RER enabling works projects using both the Alternative Financing and Procurement (AFP) and traditional procurement models.

CPG is pleased to report the following accomplishments this quarter:

- the RFP for the Finch West LRT closed on December 13, 2017 with 3 submissions;
- Hamilton City Council passed a motion to proceed with the DBFOM model for delivery of the Hamilton LRT, with conditions on December 18, 2017;
- the Vaughan Metropolitan Centre VivaNext BRT station opened in conjunction with the Toronto York Spadina Subway Extension in December 2017;
- the Mississauga Transitway completion was officially celebrated by the Minister of Transportation on December 18, 2017;
- the RFO for the design-build procurement for the Early Stations Improvement project was released in December 2017;
- Downsview Park GO Station opened for service on December 17, 2017;
- construction began on the new Confederation GO Station in Stoney Creek;
- the Union Station Trainshed project, which started construction in 2010, reached substantial completion on schedule in December;
- the contract for enabling works for the Union Station Enhancement project was awarded in January 2018 and construction began in February 2018;

- the RFPs for the Union Station Enhancement Project, Phase 1 and the West Track Enhancement project will be released in March 2018; and
- the notice to proceed for the GO Rail Network Electrification project was issued by the Minister of the Environment and Climate Change on December 11, 2017.

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

**Table 1: Project Status**

Corridor	Project Stage	Approved Budget for Capital Construction	In-Service Date <sup>1</sup>
<b>Rapid Transit Program</b>			
Eglinton Crosstown LRT	Construction	\$5,300,000,000 <sup>2</sup>	2021
Finch West LRT	Procurement	\$1,000,000,000 <sup>2</sup>	2022
Hurontario LRT	Procurement	\$1,400,000,000 <sup>3</sup>	2022
Hamilton LRT	Procurement & Planning	\$1,000,000,000 <sup>3</sup>	2024
Viva BRT	Various	\$1,400,000,000 <sup>2</sup>	Various
<b>RER Program</b>			
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 <sup>5</sup>	Design	\$4,493,000,000	2025
Vehicles	Design/Study	\$2,583,000,000	2025
Parking, Access & Property	Design/Study	\$981,000,000	Various
<b>Extensions</b>			
Bowmanville Extension	EA and Design	\$550,000,000 <sup>3</sup>	2024
Kitchener Extension	EA and Design	\$2,250,000,000 <sup>6</sup>	2024
Niagara Extension	EA and Design	\$160,000,000 <sup>3</sup>	2023

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

<sup>2</sup> 2010\$

<sup>3</sup> 2014\$

<sup>4</sup> RER project budgets have been updated to reflect the current budget baseline.

<sup>5</sup> Includes Electrification and Signals.

<sup>6</sup> 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.

The Maintenance and Storage Facility roof and wall cladding is nearly complete, and track installation continues in the yard. Utility relocations, preparation for excavation and excavation is in progress at the 15 underground stations. At Mount Dennis station, the existing Kodak Building, which will be the main transfer area between the Eglinton LRT, TTC buses, GO Train and UP Express, was relocated back to its final location. Track diversions for GO and CP are complete.

At Keele and Caledonia stations, excavation has progressed down to the level of the LRT tunnels. Excavation for the Oakwood, Avenue, and Laird stations also continues. At Kennedy station, the temporary TTC bus terminal was completed which provides more space to proceed with utility relocations and excavation.

Filling the inverts of both the east and west tunnels with concrete to provide a flat base for the track continues.

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

#### **Finch West LRT**

On December 13, 2017, the RFP closed with all three proponents submitting proposals. Financial evaluation is now underway and the preferred proponent will be identified in spring 2018.

The first project community office at 2540 Finch Avenue West opened on December 13, 2017.

The conformance review and technical evaluation of the submissions commenced December 20, 2017.

Preparatory works to relocate Enbridge gas mains are continuing.

## **Hurontario LRT**

Memoranda of Understanding (MOU) with the cities of Mississauga and Brampton and the Region of Peel have been executed, which allows negotiation of the master agreements and others required to advance the project. A separate MOU with the Ministry of Transportation was executed to outline detailed items such as costs and responsibilities.

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

The acquisition of the first wave of properties is progressing. Expropriation of properties began in January to ensure the property is secured when required; however, staff continue to work with owners on amicable agreements.

## **Hamilton LRT**

Due diligence activities continued with sub-surface utility, environmental, and geotechnical investigations for the 3-kilometre extension from the Queenston traffic circle to the Eastgate Square shopping centre.

At the December 18, 2017 Hamilton City Council meeting, Council passed a motion to move forward with the DBFOM model conditional upon Metrolinx requiring ProjectCo to provide operations and maintenance staff with comparable wages and benefits to those working for Hamilton Street Railway, OMERS pensions, and representation of staff by the Amalgamated Transit Union (ATU) Local 107. Metrolinx and Infrastructure Ontario are reviewing the City's requests to assess potential implications.

### ***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 starting on the north segment.

##### *Highway 7 - Vaughan to Richmond Hill*

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

### Highway 7 - Vaughan Metropolitan Centre

The Vaughan Metropolitan Centre station opened in conjunction with the Toronto York Spadina Subway Extension (TYSSE) in December 2017.

### **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 407 GO Bus Terminal opened for service on December 30, 2017 and directly connects to the Highway 407 subway station as part of the TYSSE.

The Mississauga Transitway completion was officially celebrated by the Minister of Transportation and others on December 18, 2017.

### **REGIONAL EXPRESS RAIL**

RER is using the AFP delivery model for many of the enabling works projects; in total there are 13 enabling works contracts. The Lakeshore East - Central Corridor Expansion, and the Lakeshore West Package 1 AFP are moving through the RFQ stage, and the Union Station Enhancement Project Phase 1, South Platform and Concourse and West Track Enhancement project 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. As a result, the procurement strategy was changed to a traditional design-build procurement. The RFQ was released in December 2017.

Due diligence and environmental studies are ongoing for the New Stations and Existing Stations Renovations AFPs. Initial Preferred Designs are complete for all 12 new stations, and are now proceeding into the detailed design phase. EA work on the RER and SmartTrack Stations is well advanced, with the first round of public consultation meetings completed for eight stations, two RER stations in the City of Toronto and the new SmartTrack stations.

In addition, Off Corridor Infrastructure is assisting the Metrolinx Fare Systems team in the "Construction of Civil Works for Add-Value Machine Deployment". This contract was awarded in September 2017 and work is in progress.

Six secure bike rooms will be constructed at six GO station locations in accordance with the Station Access Strategy and being delivered through a funding agreement with the Ministry of the Environment and Climate Change. The RFP for this design-

build contract was released in December 2017 and closed at the end of January 2018.

### ***Corridor Infrastructure Update***

#### **Barrie Corridor**

Downsview Park GO Station opened for service on December 30, 2017.

The Allandale and Bradford Layovers, as well as the passing track between Steeles Avenue to Rutherford Station, were completed in December. These new tracks were required to facilitate future two-way, all-day and hourly weekday service on the Barrie Corridor.

The Davenport Diamond RFP was released on February 22, 2018 and includes the grade separation work required to facilitate increased service on the corridor. Specifically, the construction will eliminate the at-grade crossing of two CP tracks and have the Barrie Corridor elevated over the CP corridor. The project also includes extensive public realm and public art initiatives and a future connection to the West Toronto Railpath.

#### **Kitchener Corridor**

The Highway 401 Tunnel Design-Build-Finance project reached financial close on December 4, 2017. Toronto Tunnel Partners (TTP), a joint venture of EllisDon and Strabag is the successful proponent and is currently working on design submittals and permitting requirements to begin construction.

There was continued collaboration between Metrolinx staff and the Region of Waterloo on the Kitchener transit hub development, as well as with the City of Brampton and Ryerson University on the Brampton Station redevelopment. Design work continues as part of the Design-Build contract at Bramalea GO Station.

#### **Lakeshore East Corridor**

Evaluation of the responses to the RFQ for the Central Corridor Expansion build-finance contract was completed in December 2017 and the selected pre-qualified proponents were notified in January 2018.

The demolition of the existing GO and VIA Oshawa Station building commenced in January 2018.

The new east tunnel at Guildwood GO Station opened in December 2017 and the elevators were placed into service in January 2018, allowing for the permanent closure of the existing east tunnel and platform rehabilitation work in its vicinity to commence.

Progress continues to be made on the Bowmanville Extension project through technical stakeholder meetings held with CP, MTO, and the Region of Durham in December 2017 and January 2018. Agreements to access the CP corridor for surveying and engineering investigations were finalized in February 2018.

### **Lakeshore West Corridor**

Construction commenced on December 4, 2017 for the future Confederation GO Station in Stoney Creek. The enabling works involve earthworks, drainage and underground utility modifications to accommodate the new station. Work to date includes mobilization, clearing, site preparation and utility relocation. Detailed design for the Confederation GO Station was completed in February 2018.

The Lakeshore West Package 1 AFP project RFQ was released to the market on December 7, 2017. This corridor-wide improvement project consists of station redevelopments, station upgrades, grade separations, bridge replacements, layover expansion, track work and corridor infrastructure to support future electrification. The RFQ closed in early February.

Total completion of the West Harbour Station was achieved in December 2017, including the completion of the retaining wall and a second track through the station limits. In February 2018, CN commenced construction of a third track between the existing Hamilton Yard and the Desjardins canal, as part of the ongoing Hamilton Rail Expansion program.

The Notice of Completion was issued on January 22, 2018 for the Burloak Drive Grade Separation Environmental Assessment.

Significant progress was made on the Niagara Expansion program. Council update presentations and public open houses for the new stations were successfully concluded in December, marked by positive feedback and strong community support for the expansion. The Request to Qualify and Quote (RQQ) for consultant services to support the Niagara Expansion project was released on December 21, 2017, and closed in late January 2018. Station planning for a new Grimsby GO station concluded in early December and planning work continues for the new Niagara Falls Layover facility and the redevelopment of the Saint Catharines and Niagara Falls stations.

### **Milton Corridor**

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

## **Richmond Hill Corridor**

Construction work continues on Bloomington GO Station. At Richmond Hill GO Station, design work for a new station building, platform rehabilitation and stairs providing connectivity from Major Mackenzie Drive to the platforms is progressing. At Oriole GO Station, construction of a temporary station is nearing completion to alleviate interruptions at the current location caused by work on Highway 401.

## **Stouffville Corridor**

Construction work continues on the double tracking of the corridor which includes installation of noise walls, supporting civil works and signal works.

The Stouffville Stations and Grade Separation AFP has identified a preferred proponent and is in final negotiations to achieve financial close.

The EA for the expansion of the Lincolnville Layover Facility is well advanced, with the Notice of Commencement being issued on November 30, 2017, and the Notice of Completion being issued on February 23, 2018.

## **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 well underway with ongoing stakeholder and community consultation planned to continue over the next several months.

The Union Station Trainshed project, which started construction in 2010, reached substantial completion in December.

The Union Station Enhancement Project Early and Enabling Works contract was awarded in January 2018 and construction began in February 2018.

The RFP for the Union Station Enhancement Project Phase 1, South Platform and Concourse will be released in March 2018.

The West Track Enhancement project RFP is scheduled to be released in March 2018.

## ***Network Infrastructure Update***

### **Network Signals and Communication**

The Technical Advisor for the signalling program is currently developing the project-specific output specifications (PSOS) and reference concept design (RCD) for all signalling work related to on-corridor infrastructure for Package 3, the network infrastructure work required for the RER program. This signalling work includes



enhanced train control, new signals related to track expansion work and electrification readiness. The Technical Advisor submitted the Enhanced Train Control 50% PSOS for Metrolinx review in December 2017 and the Enhanced Train Control 50% RCD in February 2018.

Metrolinx, in conjunction with the Technical Advisor, is preparing the scope of work relating to the fibre optic network. The USRC Signalling System Project is now working towards the System Final Design Review. Other construction work is ongoing, including foundation work and cable containment installation.

Renovations of the Don Yard Business Resumption Centre are proceeding on schedule with total completion in January 2018.

The GO Transit Train Control System achieved the Interim Design Review milestone on December 21, 2017 and is progressing toward Final Design Review. 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 Whitby Rail Maintenance Facility was scheduled to reach substantial completion in December 2017. Project Co. submitted their Notice of Substantial Completion on December 14, 2017, but upon review by Metrolinx and Infrastructure Ontario, it was determined that the facility was not ready for operations and a Negative Opinion was issued to the Independent Certifier who agreed with the evaluation. The facility is anticipated to achieve substantial completion in March 2018.

## **RER Operator**

In December 2017, five Prequalified Operators were selected in response to the RFQ for RER Operations issued in July 2017. The Prequalified Operators, along with Bombardier per terms of existing agreement, are eligible to participate as operators on applicant teams for the upcoming DBFOM procurement process for the RER on-corridor works.

## **Electrification**

The Notice to Proceed for the GO Rail Network Electrification Transit Project Assessment Process was issued by the Minister of Environment and Climate Change on December 11, 2017. An update to the Electrification EA is now underway to account for bridge compatibility in the Parkdale area of Toronto.

Metrolinx continues to assess the viability of hydrogen as an alternative to overhead wire technology to achieve electrified service.

Respectfully submitted,

Peter M. Zuk  
*Chief Capital Officer, Capital Projects Group*