



**To:** Metrolinx Board of Directors

**From:** John Jensen  
*Chief Capital Officer, Capital Projects Group*

**Date:** December 8, 2016

**Re:** **Capital Projects Group Quarterly Report: December 2016**

### Recommendation

That this report is received for information.

### Executive Summary

The Capital Projects Group (CPG) is advancing a large and growing program, involving signature projects like Regional Express Rail (RER), the Eglinton Crosstown LRT, the Finch West LRT, the Hurontario LRT and the Hamilton LRT. Each project has its own profile in terms of schedule, budget and risk management plan. In addition to managing specific projects, work is also underway to enhance overall program management systems, controls and processes in order to improve outcomes, apply consistent and replicable standards and monitor the entire program in a more comprehensive fashion.

Metrolinx's capital program continues to grow with the Province's June 2016 announcement to expand GO Transit rail service to Bowmanville, Niagara and Kitchener. The 20-kilometre extension to Bowmanville is expected to open by 2024 and will serve Durham residents with four new stations. Weekday service to Niagara Region is expected to begin in 2021 with service to Niagara Falls by 2023. Metrolinx has secured an agreement-in-principle with CN which will allow RER service on the Kitchener Corridor and begins the planning for a new freight corridor that will remove most freight traffic from the Kitchener Corridor.

Metrolinx's major capital projects are currently on-time and on-budget, as shown in Table 1.

**Table 1: Project Status**

Corridor	Project Stage	Approved Budget for Capital Construction	In-Service Date <sup>1</sup>	On-Time	On-Budget
<b>Rapid Transit Projects</b>					
Eglinton Crosstown LRT	Construction	\$5,300,000,000 <sup>2</sup>	2021	●	●
Finch West LRT	Design/Construction	\$1,000,000,000 <sup>2</sup>	2021	●	●
Hurontario LRT	Design	\$1,400,000,000 <sup>3</sup>	2022	●	●
Hamilton LRT	Design	\$1,000,000,000 <sup>3</sup>	2024	●	●
Viva BRT	Various	\$1,500,000,000 <sup>2</sup>	Various	●	●

Corridor	Project Stage	Approved Budget for Capital Construction	In-Service Date <sup>1</sup>	On-Time	On-Budget
<b>Regional Express Rail Projects</b>					
Barrie	Design	\$1,440,000,000	2025	●	●
Kitchener	Design	\$1,540,000,000	2025	●	●
Lakeshore East	Design	\$740,000,000	2025	●	●
Lakeshore West	Design	\$400,000,000	2025	●	●
Milton	Design	\$4,000,000	2025	●	●
Stouffville	Design/Construction	\$570,000,000	2025	●	●
USRC	Design	\$690,000,000	2025	●	●
Network Infrastructure <sup>4</sup>	Design	\$4,480,000,000	2025	●	●
Vehicles	Design/Study	\$2,600,000,000	2025	●	●
Parking, Access & Property	Design/Study	\$1,030,000,000	Various	●	●
<b>Total RER</b>		<b>\$13,500,000,000<sup>3</sup></b>			

<sup>1</sup> Actual in-services dates for RER projects are subject to schedules submitted by the successful AFP bidders.

<sup>2</sup> \$2010.

<sup>3</sup> \$2014.

<sup>4</sup> Includes Electrification and Signals.

## **Design Excellence**

Metrolinx is building design excellence into all of our projects as we go forward. To strengthen our commitment to design excellence, CPG and Planning and Policy have worked together to delineate roles and responsibilities for how design excellence will be implemented in all capital projects, which will ensure that our mandates are aligned, that we address gaps in our processes and we develop clear specifications for how design excellence can be achieved.

The roles are as follows:

- Program Design Excellence (PDX) staff within Planning and Policy;
- Project Leads within CPG;
- Designers embedded within the Technical Advisor (TA) team; and
- Master Architect who is part of Project Company (the consortium delivering the project).

Responsibilities are defined by which phase the project is in as to which role has primary responsibility. PDX staff will set the vision, guidelines, and policies and will also provide oversight throughout the process and report to the Board of Directors. The Project Leads within CPG include the Station Centre of Excellence and other CPG staff who will guide the preliminary design that informs the Reference Concept Design (RCD). The Technical Advisor design consultant will lead the preparation of the RCD and the development of the Project Specific Output Specifications (PSOS). Finally, the Master Architects will use the RCD and PSOS to develop design solutions for what will be constructed. CPG will develop the roles, responsibilities and hand-off procedures to ensure design excellence is implemented in a consistent, repeatable way and that designs are delivered with quality.

## **RAPID TRANSIT**

### ***Light Rail 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 construction. Early works, including utility relocations and traffic diversions, are in progress at all underground

stations. Heavy construction, which includes shoring and excavation, is underway on some of the underground stations. As underground station construction continues along Eglinton Avenue, Metrolinx is working with Crosslinx to identify opportunities for construction hoarding and signage at various station locations.

In November 2016, the selected artists for the Design Excellence integrated art initiative were contracted to Crosslinx. These artists were selected through a call for artwork concept design, which prequalified and short-listed artists for six of the future underground stations. A series of short videos is being produced to introduce the artists and their concepts and will be shared on the Crosstown website and through social media.

The tunnelling of the underground portion of the Eglinton Crosstown LRT is now complete. The tunnelling of the west segment was completed in May 2016 and the east segment was completed in August 2016. Work on the excavation shafts is still ongoing and will continue until mid-2017.

### **Finch West LRT**

The Request for Proposal (RFP) for the DBFM contract for the Finch West LRT was released in February 2016 and the project is now in the in-market period. Meetings with the three proponents (Humber Valley Transit Partners, Mosaic Transit Group and FACT Partners) are ongoing, with a focus on the design presentation meetings. These meetings will help prepare the proponents in completing their proposals in Winter 2017. The successful proponent will be announced after commercial and financial close in Summer 2017.

### **Hurontario LRT**

The Request for Qualifications (RFQ) for interested parties to design, build, finance, operate and maintain the Hurontario LRT project was released on October 18, 2016 and was formally announced by Minister of Transportation Steven Del Duca. The RFQ is scheduled to close in late January 2017.

The technical advisor for the Hurontario LRT project is working towards completing two key components of the tender documents: the RCD and the PSOS. These technical documents will be part of the RFP, which will be released in Winter 2017.

During late October and throughout November 2017, the City of Mississauga and Metrolinx hosted a series of open houses and ward meetings to share information about the project and build community awareness. Another round of meetings is scheduled to take place in Spring 2017.

### **Hamilton LRT**

The technical advisor for the Hamilton LRT is working towards completing two key components of the tender documents: the RCD and the PSOS. The second draft of the PSOS document was completed at the end of November and is now with Metrolinx for review. These technical documents will be part of the RFP, which will be released in Summer 2017.

The Real Estate Services Protocol between Metrolinx and the City of Hamilton was formally executed in September 2016 and Metrolinx provided its approval of the City's Property Acquisition Unit in October 2016, which will undertake property acquisition activities required for the Hamilton LRT project. The Property Acquisition Unit has been hiring key positions throughout October and November and has moved into its office in downtown Hamilton.

Metrolinx and the City of Hamilton, as co-proponents, continue to advance work on an addendum to the 2011 Environmental Assessment (EA) to address changes to the announced project scope. The EA addendum is currently on track to be completed by Spring 2017. A second round of public information sessions will take place across Hamilton in January 2017 to provide the public with details on the proposed project design and seek public feedback.

### ***Bus Rapid Transit (BRT) Update***

#### *Yonge Street – Viva Bundle – Richmond Hill to Newmarket*

The final design and field investigations by York RapidLINX Constructors, the design-build (DB) team led by Aecon and Dufferin, are ongoing and utility relocations are taking place in all three segments of the line. The overall project schedule and completion date are currently under review.

#### *Highway 7 – Vaughan to Richmond Hill (H2)*

Construction of the Bathurst Street water main between Centre Street and Highway 407 was completed in November 2016, meeting the project agreement milestone. The overall project is expected to be completed by the end of 2020 with service starting in 2019.

#### *Highway 7 – Vaughan Metropolitan Centre (H2 VMC)*

Construction of the Highway 7 VMC BRT is advancing and substantial completion and handover of the section east of Jane Street is expected before the end of 2016.

#### *Davis Drive – Newmarket (D1)*

The Davis Drive rapidway opened for revenue service in November 2015. Since then, construction crews have been working on the finishing touches of the project, including planting trees and installing the last sections of sidewalk. On October 7, 2016, a media event was held to celebrate the transformation of Newmarket with the grand opening and total completion of the project.

### **Mississauga Transitway**

Modifications to the Erin Mills Transitway station, including the installation of replacement fencing, additional landscaping and station modifications, are well underway and are expected to be completed by the end of 2016. This work was developed in collaboration with the Metrolinx Design Excellence team.

Construction of the Winston Churchill station continues and is expected to be complete by the end of 2016. Bus service to this station will begin in early 2017.

### **Bus Infrastructure**

The construction contract for the Kitchener bus maintenance and storage facility was awarded in September 2016 and a media event was held on October 21, 2016 with the Member of Provincial Parliament for Kitchener-Centre Daiene Vernile to kick-off construction of the new facility. The facility will provide maintenance and storage for twenty buses in the Kitchener-Waterloo area and will improve service reliability and support service expansion in the western region of the GTHA. The new facility includes environmentally-friendly features aimed at achieving LEED Gold certification. The facility is expected to open in 2018.

## **REGIONAL EXPRESS RAIL**

Capital Projects Group continues to advance the procurement strategy framework for GO Regional Express Rail. The procurement strategy includes an enabling works program that is currently underway.

The enabling works program consists of design-bid-build (DBB), design-build (DB) and design-build-finance (DBF) procurements necessary to prepare for delivery of major elements such as electrification. The enabling works program will be advancing a number of projects, including but not limited to new stations on the Stouffville Corridor, a rail-rail grade separation at Davenport, a new tunnel under the 401 to accommodate new tracks and various other projects.

To further the procurement strategy, Metrolinx and Infrastructure Ontario (IO) completed a robust market sounding exercise, including sharing the scope of the RER program at the annual C2P3 conference in Toronto on November 14, 2016. Metrolinx and IO staff spoke about the program and its complexity. This discussion was to engage potential proponents from across the globe to better understand the exciting work that will soon be procured. Some of the early works include:

- Stouffville Stations Package;
- Highway 401/409 Rail Tunnel;
- Cooksville Station Redevelopment;
- Union Station Upgrades;
- Rutherford Station Package;
- Davenport Diamond Grade Separation; and
- Kipling Bus Terminal

These early works packages will support subsequent procurement packages for on-corridor and off-corridor works.

The off-corridor works will include new and renovated stations to accommodate forecasted increases in passenger volumes generated by the implementation of RER. IO's alternative finance and procurement (AFP) model will be used to procure one or more contracts to build and improve stations, including expansion of associated station facilities, such as car parking and bus interchanges. Some station expansion may integrate Transit-Oriented Development (TOD).

On-corridor works are envisioned to include track, signals, electrification and vehicles. This procurement package is anticipated to be delivered as an AFP contract or via multiple AFP procurement packages.

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

#### **Barrie Corridor**

Construction on the Dufferin Street Bridge is underway. Metrolinx is partnering with the City of Toronto to extend the West Toronto Railpath, a multi-use trail, to the West Queen West community. This extension will run along the existing rail corridor, creating a new connection between Dupont Street and Dufferin Street. This community investment is in addition to the recently announced new GO train stations proposed in Liberty Village and Bloor-Davenport. Metrolinx is also sharing the cost of a new city park, which will act as a hub for the railpath users.

Construction continues on the Downsview Park GO station. This work is in collaboration with the TTC's Toronto-York Spadina Extension (TYSSE) project and is expected to be complete by the end of 2017, in time for the opening of the subway extension.

### **Kitchener Corridor**

The construction of the Shirley Avenue layover in Kitchener reached partial completion in September 2016, which allowed for two additional peak-hour trips on the Kitchener Corridor. The layover was fully completed in November 2016. These additional trips were also made possible with the completion of the bridge widening and new track near Georgetown GO station.

The John Street pedestrian bridge, located north of Weston GO station, was completed and opened to the public on October 30, 2016.

The RFQ for the construction of a new second track under Highway 401 was released on September 12, 2016 and closed on November 14, 2016. The new track will allow for both UP Express and future GO service increases to move under the highway without the requirement to reduce speeds through this section of the corridor.

### **Lakeshore East Corridor**

The Notice of Completion for the EA covering the corridor expansion between Guildwood and Pickering GO stations was issued on November 4, 2016 and Ministerial review is scheduled to be completed in January 2017. This segment of the Lakeshore East Expansion project includes the 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.

The initial public meetings for the EA covering the corridor expansion between the Union Station Rail Corridor and the Scarborough Junction were held in November 2016.

The detailed design of the fourth track between the Union Station Rail Corridor and Scarborough Junction commenced in October 2016 and is scheduled to be complete by the end of 2017 to facilitate construction of the fourth track to support implementation of RER service in 2024.

### **Lakeshore West Corridor**

The preliminary designs for the new western lead track through Exhibition station, station rehabilitation and accessibility upgrades at Mimico and Long Branch stations, and the new Confederation station in Stoney Creek were completed this quarter.

Several projects on the Lakeshore West Corridor reached substantial completion this quarter, including the platform and parking rehabilitation work at Bronte station, the new West Harbour station and Centennial Bridge Replacement projects in Hamilton and the new Lewis Road layover facility in Stoney Creek.

CN has now completed its study to determine the scope of work required to provide new GO Transit rail service to Niagara Falls. This preliminary study outlines the required new infrastructure upgrades required to facilitate this new service.

By the end of 2016, additional infrastructure to support service expansion to Hamilton will also be advanced through the completion of additional track and embankment widening at Valley Inn Road, as well as a bridge span replacement over the Desjardin Canal.

### **Milton Corridor**

The RFQ for the Cooksville parking structure and new station building project was released on September 13, 2016 and the RFP will be released in January 2017. The project includes 1,900

new parking spaces, a new station building, a new bus loop, a new pedestrian bridge connection to the platform and various station access improvements.

The reinstatement of track that was previously removed during the reconfiguration of the West Toronto Diamond commenced in October 2016 and will be completed in early 2017. The track reinstatement is required to maintain current train frequencies on the Milton Corridor as well as allow for future increases in train trips.

Construction on expanding the Streetsville GO station surface parking lot began in October 2016. The expansion will add more than 250 parking spaces for customers and will be in service in 2018.

The RFQ for the new bus terminal at Kipling Station was released on November 30 and the RFP will be released in early 2017. The project includes the construction of a new bus terminal and pedestrian connections to the GO platform and TTC subway.

### **Richmond Hill Corridor**

Gormley station, the new northern terminus on the Richmond Hill Corridor, opened on December 3, 2016 and was celebrated with a media event. The opening of the station will bring GO train service to more residents in Richmond Hill and address future ridership demand on the corridor. Construction of the new Bloomington Road station will begin in the new year. Bloomington Road station will eventually be the northern-most station on the Richmond Hill Corridor.

### **Union Station Rail Corridor**

Design for the electrical and heritage components of the Union Station Enhancement Project (USEP) are underway and will be part of a DBB procurement in February 2017. The new south platform, platform widening and conversion of the VIA Rail platform at Union Station is also progressing with the completion of the Reference Concept Design and second draft of the output specification in December 2016. USEP is a key component of the RER initiative, as it will increase station capacity, upgrade customer service systems and prepare for GO electrification.

Design for the East and West Track Enhancement projects is progressing with a target of 50% completion by January 2017. The environmental assessment has also commenced for the East Track Enhancement project. These projects will add new track and improve existing track to increase speed capabilities and additional mainline capacity at the east and west limits of the Union Station Rail Corridor.

### ***Network Infrastructure Update***

#### **Network Signals and Communication**

The Request to Qualify and Quote (RQQ) for technical advisor services for the Enhanced Train Control and Conventional Signalling Program is currently going for approval and work will commence shortly. The Enhanced Train Control and Conventional Signalling Program includes the addition or replacement of signalling technology on the rail corridors to ensure compatibility with electrification and to improve the safety and capacity of the system in support of RER objectives. The consultant will provide technical and professional services to support Metrolinx in the management of the program through both the procurement and implementation phases.

The design-build (DB) contract for the centralized GO Transit Train Control System (GTCS) began in September 2015 and is well underway. The preliminary design milestone was completed in

September 2016 and the next interim design review milestone, which will specify most of the system requirements for the project, will be completed in January 2017.

### **Network Facilities**

Construction on the fuel system upgrade at the Willowbrook Rail Maintenance Facility began in August 2016 and is expected to be completed by the end of 2017. The fuel system is currently at the end of its lifecycle and is in need of replacement. This project will replace the existing system and add additional fuelling stations.

Construction of the new East Rail Maintenance Facility (ERMF) continues and is progressing well. Construction of the facility's buildings is well underway with the buildings now fully enclosed. The project has been registered to obtain a LEED Gold certification, based on its use of exceptional products, materials, construction methods and energy and water systems. The facility is expected to be completed by December 2017. Construction on the track connection between the mainline track and the ERMF began in November 2016 and is expected to be completed in December 2017 to coincide with the opening of the ERMF.

Construction of the new GO Transit Control Centre in Oakville started at the end of February 2016 and is progressing well. The project is expected to be completed in July 2018.

Respectfully submitted,

John Jensen  
*Chief Capital Officer, Capital Projects Group*