



To: Metrolinx Board of Directors

From: John Jensen
Chief Capital Officer, Capital Projects Group

Date: February 17, 2017

Re: **Capital Projects Group Quarterly Report: February 2017**

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.

In December 2016, the Metrolinx Board of Directors approved 12 new stations (including stations for SmartTrack) as part of the RER program. The 12 stations were agreed to by Metrolinx and relevant municipal councils (City of Toronto, Township of Woolwich, Region of Waterloo, Town of Innisfil, City of Vaughan, Region of York and Town of Newmarket). Further planning will continue over the next few months in consultation with the public and municipalities. CPG and Planning and Policy are working together to advance the planning of these stations.

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 ¹ | On-Time | On-Budget |
|-------------------------------|---------------------|--|------------------------------|---------|-----------|
| Rapid Transit Projects | | | | | |
| Eglinton Crosstown LRT | Construction | \$5,300,000,000 ² | 2021 | ● | ● |
| Finch West LRT | Design/Construction | \$1,000,000,000 ² | 2021 | ● | ● |
| Hurontario LRT | Design | \$1,400,000,000 ³ | 2022 | ● | ● |
| Hamilton LRT | Design | \$892,000,000 ⁴ | 2024 | ● | ● |
| Viva BRT | Various | \$1,500,000,000 ² | Various | ● | ● |

| Corridor | Project Stage | Approved Budget for Capital Construction | In-Service Date ¹ | On-Time | On-Budget |
|---|---------------------|--|------------------------------|---------|-----------|
| Regional Express Rail Projects⁵ | | | | | |
| 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 ⁶ | 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 | | \$13,500,000,000³ | | | |

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

² 2010\$.

³ 2014\$.

⁴ Hamilton LRT budget has been updated to reflect the recent Treasury Board approval amount and the removal of the A-Line. 2015\$.

⁵ RER project budgets have been updated to reflect the current budget baseline.

⁶ 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 in both the Rapid Transit and RER programs. These roles and responsibilities are now being incorporated into procedures.

RAPID TRANSIT

Light Rail Transit (LRT) Update

Eglinton Crosstown LRT

Crosslinx Transit Solutions (Crosslinx), the consortium delivering the design-build-finance-maintain contract for the Eglinton Crosstown LRT project, continues with design and construction. The 60% design cycle is nearly complete and the 90% cycle is in progress, including master specifications, system-wide reports and some station-specific submissions. Working groups involving Metrolinx, Crosslinx and various third parties (including the City of Toronto, Emergency Services and the TTC) continue to meet regularly on the project.

Utility relocations and traffic diversions are in progress across Eglinton Avenue. Foundation work has started at the Eglinton Maintenance and Storage Facility. Preparations for excavation work is underway at many of the stations, including Mount Dennis, Caledonia, Fairbank, Oakwood, Forest Hill, Chaplin, Avenue, Mount Pleasant, Leaside, Laird and Science Centre stations. Keelesdale station is the furthest advanced of the Eglinton Crosstown LRT stations with decking installed over an excavated portion of Eglinton Avenue.

Finch West LRT

The Request for Proposal (RFP) for the design-build-finance-maintain contract for the Finch West LRT was released in February 2016 and the project is now in the in-market period. The successful proponent will be announced after commercial and financial close in Fall 2017.

Hurontario LRT

The Request for Qualifications (RFQ) for interested parties to design, build, finance, operate and maintain the Hurontario LRT project was released in October 2016 and was formally announced by Minister of Transportation Steven Del Duca. The RFQ closed on January 26, 2017.

The technical advisor for the Hurontario LRT project is working towards completing the technical documents that will be part of the RFP, which will be released in Winter 2017.

Hamilton LRT

The RFQ for the design-build-finance-operate-maintain contract for the Hamilton LRT project was released in February 2017. The RFQ is scheduled to close in March 2017.

The technical advisor for the Hamilton LRT is working towards completing the technical documents that will be part of the RFP, which will be released in Summer 2017.

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 and final round of public information sessions took place in 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 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 Centre Street water main is underway. The overall Highway 7 BRT 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 Vaughan Metropolitan Centre BRT is advancing and substantial completion and handover of the section east of Jane Street was obtained in early 2017 and is planned to be operational in Spring 2017.

Mississauga Transitway

The Winston Churchill station opened for revenue service on December 31, 2016. The Renforth Gateway station, which is the eastern terminus of the Transitway, is currently under construction and is targeting for completion in Fall 2017.

Bus Infrastructure

Construction on the Kitchener bus maintenance and storage facility continues with completion expected in early 2018. Parking at the Square One bus terminal is being expanded with construction completion expected in Spring 2017. The park-and-ride program continues with 10 new or expanded locations and is in various stages of planning, design, procurement and construction.

REGIONAL EXPRESS RAIL

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

In January 2017, the Executive Committee of the Board of Directors approved the award of two contracts for technical advisory services to support the delivery of the RER program. There is a contract providing services for each of the first two procurement packages (Packages 1 and 2) on an as-needed basis. Consolidating the technical advisory services into two large contracts will ensure that efforts are coordinated across each package and provide for administrative efficiencies and economies of scale.

The enabling works program consists of design-bid-build (DBB), design-build, build-finance and design-build-finance 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 the 13 design-build-finance/build-finance projects identified below:

- Stouffville Stations Package;
- Highway 401/409 Rail Tunnel;
- Cooksville Station Redevelopment;
- Union Station Upgrades;
- Rutherford Station Package;
- Davenport Diamond Grade Separation;
- Kipling Bus Terminal;
- Lakeshore East, Eastern Stations;
- Lakeshore East, East Segment;
- Lakeshore East, Central Segment;
- Lakeshore East, West Segment;
- Lakeshore West Infrastructure; and
- Barrie Corridor.

To further the procurement strategy, Metrolinx and Infrastructure Ontario (IO) completed a robust market sounding exercise in 2016. Metrolinx and IO staff spoke with the marketplace 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. Further engagement will be conducted in Europe, where staff will carry out similar discussions going into further detail to ensure vendors are aware of potential interface challenges and how best to mitigate.

CPG has established a dedicated off-corridor team aligned to oversee Package 2 (off-corridor works). This team will ensure that there is consistency in our station designs and we are actively applying lessons learned to optimize the development of Package 2 works. This team will be the subject matter experts (SMEs) for stations and will be the single point of contact with the Package 2 technical advisor and Project Company to help with interface coordination between on- and off-corridor works.

Corridor Infrastructure Update

Barrie Corridor

Construction on the Dufferin Street Bridge is underway and the main bridge span was completed in December 2016. The completion of the bridge allowed for the re-opening of Dufferin Street on time as promised to the City of Toronto. The next phase of the project, involving the extension of the West Toronto Railpath, is scheduled to be completed in Spring 2017. The Railpath runs along the existing rail corridor and will create a new connection between Dupont and Dufferin Streets.

Construction of the Aurora GO station pedestrian tunnel is underway. Two successive weekend shutdowns were carried out in December 2016 to install a portion of the two pedestrian tunnels. This work was completed ahead of schedule, allowing Metrolinx to return a portion of the contractor's working area to customer parking.

Work continues on the EA to add an additional track to the corridor and train layover facility in Bradford to support train service in both directions. The draft Environmental Project Report (EPR) will be circulated to external stakeholders, including review agencies, in February 2017 and the Notice of Commencement is expected in April 2017.

Kitchener Corridor

The RFQ for the design-build-finance construction of a new second track under Highway 401 closed in November 2016. Three consortia were qualified and will participate in the RFP, which was released in February 2017. The new tunnel 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

Ministerial approval for the EA covering the corridor expansion between Guildwood and Pickering GO stations was received on January 9, 2017 and the Statement of Completion was issued on January 11, 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 draft Environmental Project Report, which covers the corridor expansion between the Union Station Rail Corridor (USRC) and the Scarborough Junction, was circulated to the City of Toronto and review agencies in December 2016 and follow up is ongoing to address comments prior to issuing the Notice of Commencement. The Ministerial review is scheduled to be completed in Fall 2017.

The Request to Qualify and Quote for the detailed design of Danforth station is currently under review for approval with design scheduled to commence in February 2017.

Lakeshore West Corridor

The Bronte Station South Platform Rehabilitation project was completed and put into service in December 2016.

The Lewis Road Layover Facility was substantially completed in January 2017 and GO Transit is expected to start using the facility starting in March 2017.

CN has 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 infrastructure upgrades required to facilitate this new service. CN has commenced detailed assessments of each at-grade crossing for the service expansion to identify specific needs at each crossing. CN has also commenced the preliminary design of the John Street bridge replacement, which will facilitate train service to the future Confederation station.

Milton Corridor

The RFQ for the Cooksville parking structure and new station building project was released on September 13, 2016 and the RFP was 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 by mid-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.

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

Richmond Hill Corridor

Construction on the new Bloomington Road station began in January 2017. This station will eventually be the northern-most station on the Richmond Hill Corridor and is expected to be completed in 2019.

Stouffville

Construction of one new train storage location as part of the new Lincolnville Layover was completed in December 2016. Two additional train storage locations are currently under construction and will be completed prior to the start of additional peak hour service along the Stouffville Corridor by 2019.

A temporary Stouffville Community Office was opened in December 2016 while work continues on a permanent community office, which is expected to be opened by March 2017.

The construction of the double track between Milliken Station and north of Agincourt Station is currently underway. The contract for the construction of the second track between the Scarborough Junction and Agincourt GO station was awarded in December 2016.

The design-build-finance RFP for the design and construction of three stations (Agincourt, Milliken and Unionville) and a grade separation at Steeles Avenue is currently in the in-market phase. The RFP is expected to close in March 2017 with financial close expected in Summer 2017.

Union Station Rail Corridor

Design for the electrical and heritage components of the Union Station Enhancement Project are underway and will be part of a DBB procurement scheduled to be tendered in March 2017. The new south platform, including platform reconstruction, waterproofing and electrification at Union station is also progressing with the first draft of the reference concept designs and second draft of

the output specification completed in December 2016. This project 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% detailed design completion by April 2017. The EA 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 contract for the technical advisory services for the Enhanced Train Control and Conventional Signalling Program was approved by the Metrolinx Board of Directors in December 2016. The Enhanced Train Control program includes the addition or replacement of signalling technology on the corridors to ensure compatibility with electrification and improve overall safety and capacity. The consultant is now mobilizing their resources to start the work.

The design-build contractor for the USRC Signalling System program reached a major milestone in December 2016 with the acceptance of its interim design. The entire project, which includes the re-signalling of the Cherry, Scott and John Street control areas in the USRC is scheduled to be completed by 2019.

Network Facilities

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. With the on-time completion of the road grade separation at South Blair, demolition of the existing Hopkins Street Bridge, which crosses through the site, commenced in December 2016. Once demolition is complete, the east and west ends of the site can be connected. 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 control centre in Oakville, known as the Network Operations Centre, started at the end of February 2016 and is progressing well. The project is expected to be completed in 2018. The implementation of the train control system, which will upgrade our current system, is expected to be completed in 2019.

Electrification

The project team continues to work with utility companies to validate their infrastructure requirements within the Metrolinx right of way, as well as their requirements to ensure mitigation to future electrification is in the final stages. It is anticipated that by Summer 2017 the electrification team will better understand the risks, develop a mitigation strategy and finalize costs related to utilities impacted by the Electrification program.

The reference concept designs for the Electrification program will be complete by Summer 2017.

As part of the Electrification Environmental Approval, the Environmental Project Report is ready to be sent to the agencies for their cursory review, prior to Notice of Commencement. The EA will be completed by early Fall 2017.

Respectfully submitted,

John Jensen
Chief Capital Officer, Capital Projects Group