



## MEMO / NOTE DE SERVICE

To / Destinataire	Mayor and Members of Council	File/N° de fichier: 46-2023
From / Expéditeur	Michael Morgan Director, Rail Construction Program Transit Services Department	
Subject / Objet	O-Train Stage 2 Light Rail Transit Project Quarterly Update (Q3 2023)	Date: November 1, 2023

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The following memo outlines the progress made during Q3 2023 on the Stage 2 project and provides an overview of the planned work for Q4 2023.

### **Stage 2 Trillium Line Project**

#### **Schedule**

- The City has been working closely with TransitNEXT to advance critical works that would enable the handover of the system to the City this year. Based on the current review of all inputs including an agreement on the training requirements, the updated working timeline for the project handover is Spring 2024.
- Note that this timeline is based on the information we have available and assumes that completion of remaining milestones will be relatively smooth. There remains some risk and uncertainty in the completion of the remaining works.
- The achievement of the handover milestone is contingent upon:
  - successful completion of signal testing
  - successful completion of systemwide commissioning including stations
  - regulatory approvals by Transport Canada
  - training completion
- Trackwork is largely complete; however, signal testing progressed slowly over the summer and requires additional time. Staff also continue to monitor progress at stations noting that all stations still require occupancy permits and all stations require TSSA approvals for elevators.
- Subsequent to project handover, the City will make an assessment regarding the timing for start of public service. Final readiness activities and an assessment of system performance and system maturity will be made after handover from the build team.

## **Design**

- Staff worked with TransitNEXT in Q3 2023 to continue resolving open comments for stations, guideways, and maintenance facilities. Staff reviewed issues for construction drawings for the Hunt Club Rail Bridge and the final design submissions for the communication systems.
- Final signage and wayfinding shop drawings for the stations and Walkley Maintenance and Storage Facility (MSF) have also been submitted by TransitNEXT for a final accuracy review by Transit Services.

## **Construction – Highlights**

- During Q3 2023, the construction of all 13 Trillium Line stations continued, including elevator installation, platform work, utilities work, aluminum composite panels (ACM) and shelter installation, painting, glazing installation, communications cable pulling, mechanical, electrical, and plumbing work. Building Code Services (BCS) occupancy permit inspections and deficiency closeouts for all stations and the MSF are ongoing with full BCS occupancies targeted for end of 2023.
- Civil works at Leitrim Station and Bowesville Park and Ride continued in Q3 2023. Permanent fence posts installation along sections of the guideway continued in Q3 2023. Operational signage installation along the guideway is in progress.
- Works progressed at the new Albion Yard Facility (formerly called Walkley Maintenance and Storage Facility), including Mechanical, HVAC and Electrical deficiencies closeout, commissioning of the HVAC system and wayside cabinets continued. Work in the train wash building with deficiency closeouts and train wash equipment installation is nearing completion. Electrical, mechanical and HVAC rough-in scope progressed at the inspection building during Q3 2023. Communications cable pull, device install, and termination continued in Q3 2023.
- Trackwork progressed along the north section of the alignment (Segment 2) including track welding, destressing, and final surfacing. The south section of the alignment was provisionally completed with the tonnage run being completed as well. Vehicle testing continued between the Walkley MSF and Limebank Station. Airport elevated guideways trackwork was provisionally completed. The first train was sent out to the Airport Station during Q3 2023.
- Hunt Club bridge remaining works are expected to be completed by end of Q4 2023. Work progresses at the University Road pedestrian bridge with the installation of steel decking, rebar and deck concrete pour. Bridge approach work is also in progress. All University Road pedestrian bridge works are expected to be completed by Q4 2023.

## **Testing & Commissioning (T&C)**

- T&C program for the Trillium Line is well underway. The test process consists of the Post Installation Checkout (PICO), followed by System Acceptance Testing (SAT), and finally System Integration Tests (SIT).

- Both vehicle types (Stadler FLIRT and Alstom LINT) are predominantly complete. Their test program supports ongoing test efforts for other Trillium Line Systems.
- The Signaling and Train Control System (S&TCS) is being tested daily, with a gradual ramp up of vehicle quantity operating on both the Mainline and Airport Spur. The intent is to have nine vehicles operating on the complete Trillium Line at one time.

## **Handover**

- Following the completion of construction and then testing and commissioning program, TransitNEXT will begin a three-week trial running period to validate that all aspects of the system and maintenance activities perform as expected.
- Following the successful completion of Trial Running as well as completion of all PA requirements, Substantial Completion will be achieved.
- The system will then be available for OC Transpo to complete any remaining operational readiness activities before determining a final opening date to the public. The duration of this final process for validation of system readiness is still to be determined.

## **Stage 2 Confederation Line Project**

### **Schedule**

- The East extension currently has a forecasted completion date of Q1 2025.
- The West extension currently has a forecasted completion date of late 2026.

### **Design**

- In Q3 2023, City staff continued their review of EWC's designs of specific Confederation Line extension elements, including stations. The focus is now on closing open comments on design packages and Post-Issued for Construction (IFC) changes. In Q3 2023, staff continued the review of design documents for stations and remaining roads packages.
- The review of design for other works that can be completed following Substantial Completion, including the Richmond Road Complete Streets and the decommissioning of portions of the Transitway, will continue in Q3 2023.
- There is now a focus on review of testing and commissioning plans and documents.

### **Construction – Highlights**

- In Q3 2023, work continued throughout the west extension, including:
  - Station construction beginning at Sherboune Station
  - Building envelope and interior work for bus operator buildings at Lincoln Fields and Moodie stations

- Structural steel erection for station and pedestrian bridge at Queensview Station
- Escalator and elevator installations at Moodie Station
- Testing and commissioning for occupancy for the Light Maintenance and Storage Facility (LMSF) buildings
- Preparation for track has started between Kichi Zìbì (formerly named, Kìchì Sìbì) and Tunney's Pasture stations, with drainage, Overhead Catenary System (OCS) foundation installation, topper slab and drilling for plinth rebar. Rehabilitation of the existing structures and trench walls continues.
- The cut and cover tunnels have continued to progress and are nearing completion of excavation. Structural work and backfilling is ongoing.
- In the east, the majority of the 23-kilometre guideway barrier wall between the rail guideway and the highway has been completed with some exceptions for station/guideway entrances. Fence installation on top of the barrier walls continued in Q3 2023 and is expected to be completed in Q4, 2023.
- Overhead Catenary System (OCS) messenger wire installation has begun between west of the Blair Station pocket track area and east of Jeanne d'Arc Station and will continue in Q4 2023. OCS pole installation between Trim and Tenth Line Road has begun and will continue in Q4, 2023.
- Racks and cabinets installation in the communications room and cable pulling continued in the east stations and will continue in Q4 2023. Communication device configuration work has begun and will continue in Q4 2023.
- Skeleton track installation between Blair Station and Trim Road has been completed. All trackwork in the east is expected to be completed in Q4 2023.
- Finishing works at Montréal and Jeanne d'Arc stations continue. Concourse level pour and structural steel installation at Convent Glen Station were completed in Q3 2023, mechanical and electrical work will continue in Q4 2023. At Place d'Orléans Station, electrical and mechanical rough-in work, glazing installation, and pouring the concrete platform continues. Structural steel work has been completed and glazing and exterior cladding work continues at Trim Station.

## **Handover**

Following completion of the infrastructure and system commissioning by EWC, a three-week trial running period involving City operations, Rideau Transit Group (RTG), Rideau Transit Maintenance (RTM) and East-West Connectors (EWC) will be completed to verify operation and maintenance of the completed system. Following this work, additional time may be used for trial operations prior to opening for passenger service.

## **Stage 2 Project Vehicles**

- RTG is providing 38 additional Alstom Citadis Spirit light rail vehicles to ensure that the expanded Stage 2 Confederation Line operates as a single, uniform service. To date, 13 additional vehicles have been accepted and are in use as part of the operating fleet.
  - Configuration updates, software change, reliability and performance modifications that have been identified through Line 1 service since 2019 and have been applied to the Stage 1 vehicles, are being implemented on the Stage 2 vehicles in order to create a homogeneous fleet. The Stage 2 vehicles will need to be retrofitted with new axles once the updated design is available.
- TransitNEXT have supplied seven Stadler FLIRT vehicles for the expanded Trillium Line, which were already delivered to Ottawa. The existing Alstom LINT fleet have undergone a retrofit program and are now ready for systemwide testing and commissioning.

### **Stage 1 and Stage 2 Contingency Funds**

The Stage 1 Confederation Line contingency fund is \$115 million. To date, \$100.91 million from the total fund has been spent. Remaining funds are primarily related to property requirements and remaining commercial matters.

The original Stage 2 contingency fund of approximately \$152 million was increased by \$25 million due to unforeseen costs and improvements to the project, as approved by Council on July 6, 2022. Approximately \$174 million of the Stage 2 contingency fund has been committed to date.

A budget pressure exists for City costs due to project delays and the additional costs for City oversight, existing and emerging variations for system improvements and lessons learned, residual project risks, as well as new and emerging commercial issues.

A contingency funding and operational budget report, detailing a summary of costs to date, a lookahead for future costs and, among other things, recommending that Council increase the Stage 2 LRT contingency budget by an additional \$110 million and the operating budget by \$42 million, will be tabled at the November 7, 2023 meeting of the Finance and Corporate Services Committee and will form part of the 2024 budget processes.

### **Stage 1 and Stage 2 Capital Budgets**

In keeping with Council's approved 2017 Stage 2 Report (ACS2017- TSD-OTP-0001) and 2019 Stage 2 Report (ACS2019-TSD-OTP-0001), approximately \$3.317 billion has been spent as of September 30, 2023 and relates to the RTG MOU for Belfast Yard and vehicle assembly mobilization (\$438M), Confederation Line extension mobilization and construction period payments (\$1.745B), Trillium Line extension construction period payments and financial close for the Revenue Vehicle Supply Contract (\$620M), and contingency (\$84M).

The remaining \$430 million was spent on planning, procurement, project delivery and City retained scope.

<b>September 30, 2023</b>				
Project Description	Authority	Actual Expenditures	Funds Reserved/Committed	Unspent/Uncommitted
<b>Stage 1</b>				
Confederation Line Program	2,130,000,000	2,130,000,000	-	-
Contingency	115,000,000	100,914,030	14,085,970	-
<b>Total Stage 1</b>	<b>2,245,000,000</b>	<b>2,230,914,030</b>	<b>14,085,970</b>	<b>-</b>
<b>Stage 2</b>				
Confederation Line Extensions DBF Contract	2,680,832,113	1,745,353,880	935,478,233	-
Trillium Line Extension DBFM Contract	810,159,585	619,700,051	51,937,544	-
Deferred Equity (Maintenance Term)	-	-	138,521,990	-
RTG Stage 2 MOU (includes 38 Alstom vehicles)	516,184,423	437,832,153	78,322,526	29,745
City Costs (includes planning, procurement, property acquisitions, City retained scope, and delivery oversight)	532,629,108	430,563,182	45,578,931	56,486,995
Contingency	177,640,000	84,042,790	89,778,299	3,818,911
<b>Total Stage 2</b>	<b>4,717,445,229</b>	<b>3,317,492,055</b>	<b>1,339,617,523</b>	<b>60,335,651</b>

## **Communications and Stakeholder Relations**

In Q3 2023, the Stage 2 LRT communications highlights include:

- Four videos with over 8,500 views combined
- 235 newsletters sent to 8,454 subscribers
- 36 weekly construction activity lookaheads
- Over 18,000 page views on [Ottawa.ca/Stage2](https://ottawa.ca/Stage2)

Through Q3 2023, the LRT Sub-Committee received three updates on the Stage 2 project. Summaries of each meeting listed below can be found on OC Transpo's [Commitment to Transparency webpage](#). Q3 2023 Light Rail Sub-Committee meetings include:

- April 29: Quarterly Stage 2 Construction Update
- September 29: Stage 2 Construction Update, O-Train South Rail Activation Management Program, Action Plan Status Update

Residents are encouraged to subscribe to the [Stage 2 LRT newsletter](#) and follow Stage 2 on Instagram [@OC\\_Transpo](#) to receive progress updates, construction photos and videos and area specific notifications regarding upcoming works. Residents can also subscribe to the electronic newsletters by visiting [ottawa.ca/Stage2Connect](https://ottawa.ca/Stage2Connect).

Should you have any questions about the information provided in this memo, please do not hesitate to contact me at extension 52718.

*Original signed by*

*Michael Morgan*

c.c. Senior Leadership Team  
Transit Services Departmental Leadership Team  
Director, Public Information and Media Relations