



MEMO / NOTE DE SERVICE

To / Destinataire	Mayor and Members of Council	File/N° de fichier: 11-2023
From / Expéditeur	Michael Morgan Director, Rail Construction Program Transit Services Department	
Subject / Objet	O-Train Stage 2 Light Rail Transit Project Quarterly Update (Q1 2023)	Date: May 9, 2023

The following memo outlines the progress made during Q1 2023 on the Stage 2 project and provides an overview of the planned work for Q2 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 current working timeline for the project handover is the beginning of October.
- 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 maturity will be made after handover from the build team.
- 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:
 1. completion of trackwork
 2. successful completion of signal testing
 3. successful completion of systemwide commissioning including stations
 4. regulatory approvals by Transport Canada
 5. training completion

Design

- Staff worked with TransitNEXT in Q1 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 Q1 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. The main breaker at Corso Italia, Carleton, Greenboro and Airport stations were energized during this period.
- Work progressed in the Dow's Lake Tunnel and pump house with cable pulling and termination of jet fan electrical connections.
- Works progressed at the new Walkley Yard Facility (MSF), including epoxy flooring installation, commissioning of the HVAC system and various equipment that will be used on the trains. Work progressed in the train wash building with the installation of the energy recovery unit, floor grating and overhead doors. The train wash building was energized on permanent power during Q1 2023. Electrical, mechanical and HVAC rough-in scope also progressed at the inspection building.
- Trackwork progressed along the entire alignment including track welding, destressing, and surfacing. Special trackwork installation continued at the Bayview and Limebank cross-over, and turnouts were also installed at various sections of the alignment. Direct fixation (DF) track installation started during Q1 2023 at Ellwood and Airport elevated guideways.
- Hunt Club bridge works continued in Q1 2023 with the barrier walls between the rail and pathway completed, median barrier wall started, and remaining bridge approach work progressed during Q1 2023. Bridge works on the elevated guideway at Ellwood and the airport are nearing completion.

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 is currently forecasting a completion date of January 16, 2025, which is an approximate 7-week delay from the Project Agreement (PA) completion date of November 26, 2024 – this is a slight reduction from previous reports.
- On the West extension, from Tunney’s Pasture Station to Moodie and Algonquin stations, the City is expecting a delay of up to 17 months against the contractual completion date of May 25, 2025. Specific elements such as the light maintenance and storage facility (LMSF) and Lincoln Fields Station are progressing well. Production rates and accumulated delays on the Cut and Cover Tunnel along the Sir John A. Macdonald Parkway and Byron Linear Park are pushing the overall project completion date to late 2026.
- Note that the project has two independent opening dates, with the eastern extension segment, from Blair Station to Trim Station, planned to open first.

Design

- In Q1 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. In Q1 2023, staff continued the review of design documents for stations and remaining roads packages.
- The review of other works that will be completed following Substantial Completion, including the Richmond Road Complete Streets and the decommissioning of portions of the Transitway, will continue in Q2 2023.
- There is now a focus on review of testing and commissioning plans and documents that are now being provided by EWC.

Construction – Highlights

- In Q1 2023, work continued at stations and the LMSF throughout the west extension, including:
 - Escalator installations and architectural finishing (acoustic panels and ceiling) at Algonquin Station
 - Interior finishes, Traction Power Substation (TPSS) installation, and excavation at Lincoln Field Station
 - Station works at Queensview Station
 - Steel erection, plumbing and building envelope at Pinecrest Station
 - Demolition, foundation, and platform level concrete work at Bayshore Station
 - Rail and equipment installation at the LMSF
 - Window and plumbing work at Iris Station
 - Concrete and structural steel works at Moodie Station

- Bulk excavation in the existing transitway trench between Kìchì Sìbì and Tunney's Pasture stations progressed in Q1 2023 and is now complete for this area. Drainage work and rehabilitation of the trench walls including scaling and installation of anchors, shotcrete, and drapery continues in the trench.
- Rail and rail tie delivery to the LMSF started in Q4 2022, and rail welding and installation began in Q1 2023. Energization of the TPSS building at the LSMF is complete. Catenary poles and catenary work are expected following installation of rail this spring.
- In the east, the majority of the 23-kilometre guideway barrier wall between the rail guideway and the highway has been completed.
- Overhead Catenary System (OCS) pole and cable trough installation continued, and the majority has been completed from Blair to Jeanne d'Arc stations. The Majority of OCS poles' cantilever arms have been installed between the Blair flyover and Jeanne d'Arc Station as well.
- Track installation between Blair and Jeanne d'Arc stations is complete. Track installation between Trim and Place d'Orléans stations continues and is progressing well. Trackwork between Jeanne d'Arc and Place d'Orléans stations is expected to begin in Q2 2023.
- The TPSS units for Montréal and Place d'Orléans stations have been delivered and installed. The remaining three TPSS units in the East will be delivered in Q2 2023. Racks and cabinet installation as well as cable pulling started in the Train Signal equipment rooms in the East stations and will continue in Q2 2023.
- Finishing works at Montréal and Jeanne d'Arc stations continues. Footings and foundation walls work at Convent Glen Station were completed in Q1 2023, underground mechanical and electrical, slab-on-grade and steel erection work will continue in Q2 2023. Framing and sheet rock work continued at Place d'Orléans Station. The concourse level pour has been completed at Trim Station. Escalators were delivered and installed at Place d'Orléans and Trim stations.

Handover

The handover sequence for the Stage 2 Confederation Line is different than in Stage 1. Following completion of the infrastructure and system commissioning by EWC, a three-week trial running period involving City operations, Rideau Transit Group and Rideau Transit Maintenance and 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, 10 Stage 2 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, are being applied to the Stage 1 vehicles and to the Stage 2 vehicles in order to create a homogeneous fleet. Additional vehicles are undergoing final commissioning now and the fleet size is expected to be sufficient for the east extension by the end of this year. The remaining fleet order is expected to arrive well ahead of the west extension timelines.
- TransitNEXT will supply seven Stadler FLIRT vehicles for the expanded Trillium Line, which have already been 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, \$100.03 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 \$166 million of the Stage 2 contingency fund has been committed to date. Additional pressures remain on the contingency due to project delays increasing the cost for City oversight, existing and emerging variations for system improvements, residual project risks over the remainder of the project life, and open commercial issues.

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 \$3.019 billion has been spent as of March 31, 2023 and relates to the RTG MOU for Belfast Yard and vehicle assembly mobilization (\$424M), Confederation Line extension mobilization and construction period payments (\$1.537B), Trillium Line extension construction period payments and financial close for the Revenue Vehicle Supply Contract (\$602M), and contingency (\$61M). The remaining \$395M was spent for planning, procurement, project delivery and City retained scope.

Notably, the City received the final \$60M payment from the MTO for Stage 1 on March 15, 2023 and received the final \$60M payment from Transport Canada for Stage 1 in two installments, \$5.8M on April 12, 2023 and \$54.2M on April 18, 2023. No funds are outstanding and the funding agreements for Stage 1 of the Confederation Line are now closed. The City will continue to report on critical reliability issues on the Confederation Line to the funding partners as part of the Stage 2 funding agreement.

March 31, 2023				
Project Description	Authority	Actual Expenditures	Funds Reserved/Committed	Unspent/Uncommitted
Stage 1				
Confederation Line Program	2,130,000,000	2,130,000,000	-	-
Contingency	115,000,000	100,026,391	14,973,609	-
Total Stage 1	2,245,000,000	2,230,026,391	14,973,609	-
Stage 2				
Confederation Line Extensions DBF Contract	2,680,832,113	1,536,991,384	1,143,840,728	-
Trillium Line Extension DBFM Contract	810,159,585	601,609,174	70,028,421	-
Deferred Equity (Maintenance Term)	-	-	138,521,990	-
RTG Stage 2 MOU (includes 38 Alstom vehicles)	516,184,423	424,310,870	91,795,352	78,201
City Costs (includes planning, procurement, property acquisitions, City retained scope, and delivery oversight)	532,629,108	394,337,767	40,778,625	97,512,715
Contingency	177,640,000	61,307,396	105,008,910	11,323,694
Total Stage 2	4,717,445,229	3,018,556,592	1,589,974,026	108,914,610

Communications and Stakeholder Relations

In Q1 2023, the Stage 2 LRT communications highlights include:

- Five videos with over 6,000 views combined
- 79 newsletters to 7,396 subscribers
- 59,000 unique visitors on Ottawa.ca/Stage2
- 36 weekly construction activity lookaheads

On March 29, the LRT Sub-Committee received an update on the Stage 2 project. There is significant progress being made in the East, West and South that residents can see in [this video](#) and read about in [this blog story](#).

Residents are encouraged to subscribe to the [Stage 2 LRT newsletter](#) and follow [Stage 2](#) on Instagram [@Stage2Etape2](#) 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](#).

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