

Subject: Stage 2 Light Rail Transit Project

File Number: ACS2025-TSD-RCP-0002

Report to Transit Committee on 12 June 2025

**Submitted on June 3, 2025 by Renée Amilcar, General Manager, Transit Services
Department**

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Ward: Citywide

Objet : Phase 2 du projet de train léger sur rail

Numéro de dossier : ACS2025-TSD-RCP-0002

Rapport présenté au Comité du transport en commun

Rapport soumis le 12 juin 2025

**Soumis le 3 juin 2025 par Renée Amilcar, Directrice générale, Services de
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REPORT RECOMMENDATION

That the Transit Committee receive this report for information.

RECOMMANDATION DU RAPPORT

Que le Comité du transport en commun prenne connaissance du présent rapport à titre d'information.

BACKGROUND

On March 6, 2019, Council approved the Contract Award of Ottawa's Stage 2 Light Rail Transit Projects and Related Matters report ([ACS2019-TSD-OTP-0001](#)).

TransitNEXT (TNEXT) was awarded the contract to design, build, finance, and maintain the Trillium Line extension, including the Airport Link. The Trillium Line operates from Bayview Station to Limebank Station (Line 2) and includes the Airport Link (Line 4).

East/West Connectors (EWC) was awarded the contract to design, build, and finance the Confederation Line extensions. The project will extend Line 1 from Blair Station to Trim Station in the east and from Tunney's Pasture Station to Moodie Station (Line 3), and to Algonquin Station (Line 1) in the west.

As part of the 2022-2026 Council Governance Review report, Council approved the following Motion 2022 - 03/06, moved by Councillor Desroches and seconded by Mayor Sutcliffe:

THEREFORE BE IT RESOLVED that City Council establish a Light Rail Sub-Committee of Council to provide oversight over non-operational matters related to the Confederation Line 1 and the construction of Confederation Stage 2 and Trillium Lines.

Based on this motion, Transit Services provided a regular Stage 2 Light Rail Transit Project presentation to Light Rail Sub-Committee (LRSC).

On January 29, 2025, Council approved the 2022-2026 Mid-term Governance Review report ([ACS2025-OCC-GEN-0001](#)), which included the following recommendation:

- The following Council committee structure for the remainder of the 2022-2026 Term of Council, effective immediately and including that the Light Rail Sub-Committee be dissolved, and the Transit Commission be renamed as the Transit Committee.

As a result, updates to the Stage 2 Light Rail Transit Project, which had previously been provided to LRSC, will now be provided to the Transit Committee.

DISCUSSION

This report, and the presentation prepared for the Transit Committee meeting on June 12, 2025, provides a construction update on the O-Train Confederation East and West Extensions, as well as a status update on Line 2 and Line 4 (Trillium).

1. Line 2 and Line 4

O-Train Line 2 and Line 4 launched with five-day service on January 6, 2025. Six-day service started on January 25, 2025, and seven-day service began on March 16, 2025. The gradual opening of both lines with parallel bus service followed the recommendations of the Ottawa Light Rail Transit Public Inquiry.

As both lines are now fully operational, Transit Services is focused on working closely with TNEXT to close out of all remaining work, which includes:

- Bearing condition monitoring system: This system provides real-time monitoring of the axle bearing condition of the trainsets on the line, per Transport Canada requirements. The design of the system has been completed and variation or costs are being finalized to execute this work.
- Conformal frog: A frog is part of the switch that helps transfer wheels from one track to another. A draft design and workplan has been received for two locations, Beech and Brookfield, and is currently under review.
- Locomotive Video and Voice Recorder (LVVR) deficiencies: modifications are being implemented to ensure compliance with regulations.

In addition to addressing remaining works noted above, the reduction of train bell volumes was investigated in response to noise complaints. Following a safety risk assessment to ensure regulatory compliance, train bell volumes were modified on all Stadler FLIRT trains. This work was completed in mid-April 2025.

As noted in the March 2025 report ([ACS2025-TSD-RCP-0001](#)), the outstanding work does not affect any safety-critical systems or normal rail operations. Line 2 construction and installation work is expected to be completed by July 2025.

Future reporting will be brought forward in the context of ongoing rail operations, similar to Line 1, and not as part of the Stage 2 Construction Update reports.

2. Line 1 East Extension Construction

In the east, final construction activities and train testing are well underway and nearing completion. Remaining major fleet activities include software upgrades and operator training.

Communication rooms and the setup of system parameters, to ensure devices such as switches and cameras function as required, is now complete at all stations in the east. Communication systems testing continues.

Technical Standards and Safety Authority (TSSA) certifications for elevators and escalators have all been obtained.

All Traction Power Sub Stations (TPSS) and station permanent power in the east have been energized.

The communication-based train control system (CBTC) commissioning is well advanced with multiple trains continuing to run in loops. Boundary testing between Stage 1 and Stage 2 territories has been completed.

Correction of deficiencies at all stations and in the guideway is ongoing and progressing well.

The works outside the guideway will be completed in two phases: The first phase, currently underway, is required for Substantial Completion and includes grading, drainage, headwall installation, slope finishing, top-lift paving, guardrail installation and landscaping along OR-174. This work is expected to be completed in Q2 2025. The second phase will proceed following Substantial Completion and is considered part of remaining works. This will include work on the slope finishing, top-lift paving, guardrail installation and landscaping to finish the OR-174.

OR-174 upload

As part of the Province's commitment to upload OR-174, the City of Ottawa is currently providing the Ministry of Transportation (MTO) information related to maintenance of the road. For example, this information includes operating procedures for snow clearing; infrastructure related to the road, such as drainage and bridge specifications; and, specifications related to the Stage 2 LRT project, such as access points. Staff do not believe that uploading the OR-174 will affect the Stage 2 LRT project, either during construction or once the system is operational.

Line 1 East Stations

Station occupancy for the east stations is nearly complete with deficiency closeout, building code service reviews, and occupancy permits expected in Q3 2025.

2.1 Line 1 East Rail Activation Management Program (RAMP)

The path to revenue service for the east extension includes Testing and Commissioning, Substantial Completion, Trial Running, and Final Safety Approval.

Substantial Completion will validate that the system infrastructure designed and built by EWC meets the requirements of the Project Agreement.

Trial Running follows Substantial Completion and will demonstrate that Transit Services and the maintainer, Rideau Transit Maintenance (RTM), can achieve the performance requirements for passenger service.

Final Safety Approval is the final step before Revenue Service and will include a statement from the Independent Safety Assessor and Auditor that the system is safe for passenger service.

The Rail Activation Management Program (RAMP) structure and reporting mechanisms ensure comprehensive tracking and support for all activities and milestones during the transition from construction to revenue service. This work is done in coordination with the Transit Services Rail Operational Readiness (ROR) Program. Regularly scheduled RAMP meetings assemble the Transit Services Departmental Leadership Team and key stakeholders, including RAMP leads, Stage 2 contractors, subject-matter experts (SMEs), and support staff. These meetings serve as a platform to exchange updates, coordinate activities, identify emerging issues, and assign responsibilities for resolution. Identification of critical activities is essential for a successful public launch and take into consideration services that may have high-impact disruptions.

A progress summary of critical activities include:

2.1.1. System Installation, Integration, Testing and Commissioning

Significant work is currently underway to integrate communication systems for the east extension with the existing live systems on Line 1. Testing of systems began in a lab environment and will be migrated to a production environment over the next several weeks. This iterative and complex integration process will be phased and carefully coordinated to minimize customer impact.

The majority of system integration work will be conducted during overnight engineering hours; however, the complexity of some systems, like the Supervisory Control and Data Acquisition (SCADA) system, which receives data from several other safety-critical systems, may require longer closures. As testing and integration work progresses, it determines the readiness for work. Staff will communicate details on potential service impacts as soon as readiness is determined. Any impacts to revenue service are being carefully planned to avoid weekdays and major public events.

The Systems Steering Committee oversees the system integration process and is responsible for all key systems-related decisions. This committee includes representatives from RTM, Hitachi, RCP, OC Transpo and EWC. The focus is mainly around interfaces between the various systems to ensure alignment between the stakeholders.

2.1.2 Safety Certification and Approvals

A comprehensive safety certification program is in place to guide assessment and documentation of system safety through various milestones like Substantial Completion and Revenue Service. This includes safety cases for the Stage 2 East system (EWC), operator (City), and maintainer (RTM) that are required for Trial Running.

A railway level safety case is also under development by the City to assess changes to the Stage 1 system combined with all Stage 2 East systems and activities. Further levels of assessment are provided in all cases by the Independent Safety Assessor and Auditor.

2.1.3. Operations and Maintenance Readiness

Training Program, Staffing and Recruitment, and Maintenance Readiness: Work is progressing in these areas. New Electric Rail Operator (ERO) hiring, and familiarization training is underway on Stage 1, while training on Stage 2 East is expected to commence in late July leading to certification of the required number of personnel in support of Trial Running. Training is also scheduled for Electric Rail Controllers (ERC) and maintainer (RTM) personnel.

2.2 Interface Committee

The Stage 2 east extension presents a new challenge of coordination between the City, its constructor, EWC, and its maintainer (RTM). An Interface Committee of representatives from all parties meets regularly to discuss issues and resolve concerns between the three parties. Recent discussions have been centered on establishing an escalation protocol for outstanding issues. Specifically, the committee has discussed spare parts, maintenance of vehicles at the LMSF, and engaging a warranty independent expert for warranty and/or defect management. This process will ensure timely and binding decision-making on critical matters in the lead up to Substantial Completion.

2.3 Trial Running Overview

After Substantial Completion, the City will undertake Trial Running of the System Infrastructure on the east extension and existing Stage 1 system. The objective is to validate that the fully integrated system functions in accordance with the requirements of the Project Agreement by demonstrating the specified travel times, headways and operational performance requirements.

Trial Running will exercise and evaluate the performance of system infrastructure, subsystems, vehicles, operating and maintenance personnel, as well as operating

procedures to demonstrate the reliability of the system and its ability to deliver passenger service without interruptions.

Trial Running will be integrated with regular revenue service on the existing Line 1 segment. A detailed trial running plan is currently in development and will help ensure successful completion of Trial Running. It will specify staged completion of a Performance Test and Pre-Trial Running period to progressively demonstrate readiness and allow stakeholders to prepare and adjust for the 21-day Trial Running period.

2.4 Line 1 East Communications

As directed by Council, staff will continue the practice of holding technical briefings to provide information on upcoming major milestones and progress towards revenue service for the east extension. This will ensure continued transparency and timely information is shared with Members of Council, public and media partners. Regular progress updates will be also shared on octranspo.com/otrain-x.

3. Confederation Line West Extension Construction

In the west, construction of stations, guideway, track, off-guideway utilities, and roadway works continue in all areas. A series of traffic detours continue to be necessary to enable various construction activities. Cut and cover tunnel construction was completed in 2024 with works now ongoing for guideway infrastructure inside the tunnel. Inside the tunnel, the track and dry-fire line installation is complete. Work is ongoing for the lighting installation, cable pulling, and preparation for overhead catenary system (OCS) installations.

Line 3 Stations

Interior finishes, including testing and commissioning of mechanical and electrical components at stations, continue as they near closer to completion. These stations include Moodie, Pinecrest and Queensview.

Construction of the platforms and work on the elevators continues at Bayshore Station, and work on the permanent bus loop is expected this year. Work for the Moodie bus loop is expected to advance this year.

Line 1 West Stations

Structural work is nearing completion at all stations. Westboro Station is expected to be structurally complete by mid-2025, and work has been progressing well with concourse pre-cast panel and structural steel installation ongoing. Elevator installation is ongoing.

Mechanical and electrical installation work is ongoing at Kichi Zibi, Sherbourne, and New Orchard stations. Work on remaining Line 1 west stations is progressing well. Interior finishes, including testing and commissioning of mechanical and electrical components at stations, continue as work nears completion. These stations include Lincoln Fields, Iris and Algonquin stations. Construction of the platform at Lincoln Fields Station is expected this spring and work is ongoing for the permanent bus loop construction.

Construction of the pedestrian bridge at Algonquin Station is ongoing.

Light Maintenance Storage Facility (LMSF)

At the LMSF, crews have completed work on the OCS, which is at the western limit of the project. Work for the OCS is starting to progress east from Moodie Station towards Pinecrest Station. Electrification of the yard and start of train testing is expected late Q2 2025.

In addition to the delivery of the first train to the LMSF in fall 2024, two additional trains were delivered by truck before the end of 2024 and have been reassembled. This allows for testing to begin, including clearance tests, pantograph and OCS tests. It will be followed by CBTC testing starting at the LMSF and gradually progressing eastward over the next several months. Testing and commissioning of maintenance equipment at the LMSF has been completed.

Work to finalize the areas around the LMSF building is ongoing. Work completed last year included curb installations and first lift or layer of asphalt for the parking lots and access roads. This work is expected to continue this year, with completion of the pavement, fencing, gates, signs, and landscaping.

Vehicles

Currently, 25 of the 38 light rail vehicles (LRVs) for the Stage 2 fleet have been delivered and accepted by the City. Seven additional vehicles are at various stages of testing and acceptance, and the remaining six are awaiting production. LRVs are currently on track to meet trial running and operational requirements for the east extension.

Guideway Construction

West extension guideway construction is progressing well. A small section of track near Westboro Station remains outstanding for installation but the remainder of track is final

or near final configuration. OCS installation is ongoing, wire pulling is ongoing between Moodie and Pinecrest stations. Pole and cantilever installation is ongoing between Lincoln Fields and Algonquin stations.

Off-Guideway Construction

Remaining civil work is advancing at the four Ministry of Transportation (MTO) interchanges along the alignment. Ramp closures are in place and future staging is expected to complete the remaining work. Work is ongoing to complete Carling Avenue construction, and to construct the Kichi Zibi Mikan to its final alignment.

Work is ongoing with associated traffic stages to advance the Revitalizing Richmond Road Scope.

FINANCIAL IMPLICATIONS

1. Stage 1 and Stage 2 Contingency Funds

The Stage 1 Confederation Line contingency fund is \$115 million. To date, \$102 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 (approved by Council on July 06, 2022) and an additional \$110 million (approved by Council on November 22, 2023) due to unforeseen costs and improvements to the project. Approximately \$260 million of the \$287.6 million Stage 2 contingency fund has been committed to date. As per the last funding report, a residual budget pressure is forecasted for City and other costs; however, that pressure will be addressed at a future date.

1. Stage 1 and Stage 2 Capital Budgets

In keeping with Council's approved 2017 Stage 2 Report ([ACS2017-TSD-OTP-0001](#)), 2019 Stage 2 Report ([ACS2019-TSD-OTP-0001](#)), 2022 Stage 2 Report ([ACS2022-FSD-FIN-0009](#)) and 2023 Stage 2 Report ([ACS2023-TSD-RCP-0017](#)), approximately \$4.364 billion has been spent as of April 30, 2025, and relates to the RTG MOU for Belfast Yard and vehicle assembly mobilization (\$469 million), Confederation Line extension mobilization and construction period payments (\$2.367 billion), Trillium Line extension capital costs including financial close for the Revenue Vehicle Supply Contract (\$841 million), and contingency (\$186 million). The remaining \$501 million was spent on planning, procurement, project delivery and City retained scope.

April 30, 2025				
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	102,180,545	12,819,455	-
Total Stage 1	2,245,000,000	2,232,180,545	12,819,455	-
Stage 2				
Confederation Line Extensions DBF Contract	2,680,832,113	2,367,124,625	313,707,488	-
Trillium Line Extension DBFM Contract	850,966,493	702,255,205	10,189,298	-
Deferred Equity (Maintenance Term)	-	138,521,990	-	-
RTG Stage 2 MOU (includes 38 Alstom vehicles)	516,184,423	468,484,941	47,699,483	-
City Costs (includes planning, procurement, property acquisitions, City retained scope, and delivery oversight)	574,629,108	500,968,245	26,970,764	46,690,099
Contingency	287,640,000	186,172,886	74,096,295	27,370,819
Total Stage 2	4,910,252,137	4,363,527,891	472,663,328	74,060,918

Delays could have implications on the project's budget. Staff will report to Committee and Council on any adjustments to the contingency budget, as required.

LEGAL IMPLICATIONS

There are no legal impediments to receiving this report for information.

ACCESSIBILITY IMPACTS

All components of the Stage 2 LRT project adhere to the *Accessibility for Ontarians with Disabilities Act* (AODA). Any policy or procedural development, as well as customer communications and public engagement identified in the report's recommendations will include the application of the City's Equity and Inclusion Lens. Staff will continue to engage persons with disabilities and accessibility stakeholders to ensure that their perspectives are considered and incorporated, and to promote inclusion. Staff will also ensure that any applicable accessibility legislation, standards and guidelines are adhered to during the execution of the projects and initiatives identified in this report.

ASSET MANAGEMENT IMPLICATIONS

The City of Ottawa's Comprehensive Asset Management program uses widely accepted asset management practices and long-range financial planning, in compliance with provincial asset management regulations, to manage the City's infrastructure portfolio worth over \$70 billion to provide for the safe delivery of reliable and affordable services to the community. Asset management is an internationally recognized and implemented practice that supports informed, transparent decision making, giving Council a framework to provide direction on the appropriate balance of service delivery, cost, and risk, through a process of optimizing the lifecycle management of the City's assets which support the services it delivers.

The implementation of the Comprehensive Asset Management program enables the City to effectively manage existing and new infrastructure to maximize benefits, reduce risk, and provide safe and reliable levels of service to community users. The report identifies potential improvements to the Business Case and Project Management Policy and Project Management Framework. These are guiding documents to the Comprehensive Asset Management program, and as such, any changes to these core documents will be reviewed and reflected in the program.

RURAL IMPLICATIONS

The City's transportation network, including light rail transit, is designed to provide options for all residents. Once completed, Stage 2 LRT will span from Trim Road to Moodie Drive and south all the way to Riverside South. Rural residents will have access to Park and Ride lots at various stations which will allow them to easily use public transit.

TERM OF COUNCIL PRIORITIES

The 2023-2026 Term of Council Priorities include:

- A city that is more connected with reliable, safe and accessible mobility options.
- A city that it is green and resilient.

DISPOSITION

Transit Services will provide ongoing information to Transit Committee and Council as Substantial Completion of O-Train Line 1 East is finalized.

Construction updates for O-Train Line 1 and Line 3 will continue to be provided to Transit Committee.