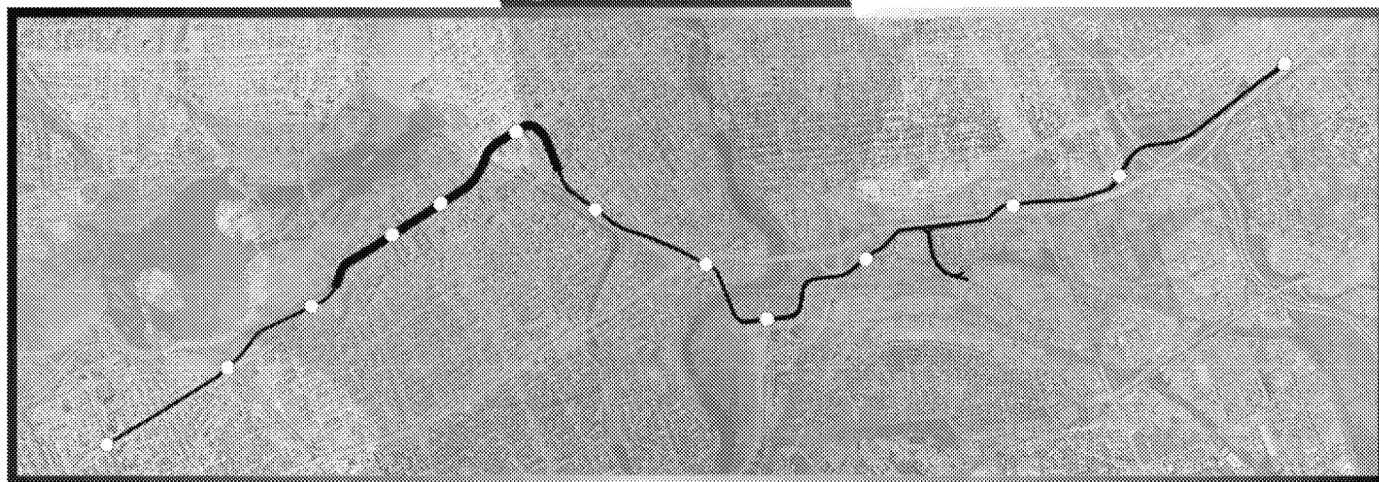




Confederation Line
Ligne de la Confédération



Confederation Line Project Quarterly Report #30

Prepared for the Ministry of Transportation Ontario

CONFIDENTIAL

October 1 to December 31, 2018

Date: March 8, 2019

www.confederationline.ca



www.lignedelaconfederation.ca

Our Mission

*To deliver on time and on budget the City of Ottawa's
light rail and associated infrastructure that provides
the capacity to support growth*

Our Vision

*To deliver world class light rail systems that
seamlessly connect city-wide transit services to
communities, making transit a clear choice for
residents in their daily lives*

Table of Contents

1. Executive Summary	4
2. Risk Management.....	5
3. Schedule Management.....	7
4. Finance and Agreement Administration	7
5. Tender Award Dates.....	8
6. Summary of Previously Provided Documentation	8
Appendix A – Financial Summary	9
Appendix B – Contribution Agreement Activity.....	11

1. Executive Summary

This document is provided to the Ministry of Transportation in accordance with the Contribution Agreement with the Province of Ontario. It includes:

- Updated information regarding the schedule and risks that may affect the Project's completion (Section 2 and 3);
- Tender awards for the period (See Section 5); and,
- Spending as of the date of the report and specific breakdown of costs for the most recent quarter by Project component (See Appendix A and B).

Design and Construction updates for the period of October 1 to December 31, 2018 are available in the Monthly Independent Certifier (IC) reports, as well as in the Q4 City of Ottawa Quarterly Memo to the Mayor and members of Council, which were previously distributed. The O-Train Confederation Line Project Updates presented to Council on February 12 and March 5 (also previously distributed) provides the most current project status, on-going activities and critical elements that are being monitored. Construction highlights include:

At December 31, 2018	At March 5, 2019
<ul style="list-style-type: none"> • Building inspections at 4 stations have been completed (Hurdman, Tremblay, Cyrville and Blair Stations) • Building inspections for Tunney's Pasture, Bayview, Pimisi, Lyon, uOttawa, Lees, and St-Laurent Stations are in progress. Building inspections for Parliament and Rideau Stations are being scheduled with completion of all station inspections anticipated in Q1 2019. 	<ul style="list-style-type: none"> • Building inspections at 9 stations have been completed and are ready for occupancy (Bayview, Pimisi, Lyon, uOttawa, Lees, Hurdman, Tremblay, Cyrville and Blair Stations). • Building inspections for Tunney's Pasture, St-Laurent, Parliament and Rideau Stations are in progress with completion anticipated in Q1 2019.
<ul style="list-style-type: none"> • The installation of the power supply and distribution system is complete across the alignment. 	<ul style="list-style-type: none"> • Final verification of the electrical network is progressing to demonstrate reliability and capacity for the service.
<ul style="list-style-type: none"> • Vehicle tests continue with multi-vehicle and dynamic testing using the Computer Based Train Control (CBTC) on board. 	<ul style="list-style-type: none"> • Safety certificate for integrated system provided; safety certificate for 24 of 34 vehicles provided; some outstanding items to be resolved.

At December 31, 2018	At March 5, 2019
<ul style="list-style-type: none"> Final vehicle assembly is underway with final retrofits in progress. 	<ul style="list-style-type: none"> All 34 vehicles are built and are going through final acceptance, troubleshooting and testing.

Subsequent to December 31, 2018, there have been changes to the RSA date, including an RTG commitment for a March 31 RSA. However, on February 27, RTG advised the City that March 31 would not be achieved. On March 5, the City notified the Mayor and Council that RTG will not be achieving the March 31 RSA date and that RTG indicated a possible new RSA date for Q2. City staff continue to monitor all critical elements required for Substantial Completion.

2. Risk Management

The City continues to monitor retained risks (e.g. Stakeholders, traffic and utilities impacts); however, the primary area of focus is the risk to successfully achieving the Revenue Service Availability (RSA) date. In addition to rigorous analysis of RTG's schedule (see Section 3 Schedule Management), the O-Train Construction Office is actively monitoring several issues that have the potential to affect costs and schedule.

The City and RTG agree with the following list of key activities required to achieve project completion:

1. Safety Assurance and Systems Engineering program completion leading to confirmation by the Independent Safety Auditor that safety requirements are met:

Safety Compliance is one of several requirements for the Independent Certifier to certify that the system is ready for Revenue Service Availability. RTG is to provide a completed engineering safety case as part of their final project completion documentation. The City's Independent Safety Auditor is to validate that safety requirements are met at the time of project handover. The preliminary safety case is expected to be provided to the City in mid-March to initiate the final review process.

2. Station completion and attainment of station occupancy at every location:

Station occupancy permits are required for all 13 stations and the MSF. Nine stations are now ready for occupancy while the remaining four should be completed by March 31.

3. Tunnel Ventilation System (TVS) testing and commissioning completion:

The Tunnel Ventilation Systems are a very critical life-saving system in the event of smoke or fire in the downtown, St. Laurent tunnel, and yard-mainline connector tunnels. The system manages the fans that control the flow and movement of air and

smoke in the tunnel and needs to operate correctly in the event of an emergency. There is rigorous testing required to ensure systems are operating as required. Corrections to minor equipment and minor installation issues are progressing.

4. Final light rail vehicle assembly and acceptance of each individual vehicle:

A fleet of 15 double vehicles is required to run end to end to provide peak hour service, plus 4 single vehicles for spares. All 34 vehicles are built and are going through final acceptance, troubleshooting and testing. Vehicles tests continue with multi-vehicle and dynamic testing using the Computer Based Train Control (CBTC) on board. As of February 27, 12 single vehicles have been consistently in service for training, testing and commissioning.

5. Transit Operations Control Centre (TOCC) – commissioning of all critical systems:

System integration tests for all Confederation Line communication systems are occurring using the Supervisory Control and Data Acquisition (SCADA) system. The SCADA system is fed into the City's TOCC so operators can monitor system and communication activity across all transit operations (OC Transpo, Para-Transpo, and Trillium Line Services). Systems are largely complete with a software upgrade planned for mid-March to address final incomplete elements; some user interface issues and final integration tests to be completed to the satisfaction of the City.

6. End-to-end traction power and overhead catenary reliability and performance:

The installation of the power supply and distribution system is complete across the alignment. Testing resiliency of equipment and winter response plans is progressing.

7. System testing in automated Communications Based Train Control (CBTC) mode:

The primary focus at this stage of the project is RTG's management of the interface between their vehicle manufacturer (Alstom), and the train-control systems supplier (Thales). Achieving RSA relies heavily on the integration and testing activities going smoothly and achieving quick turn-around in debugging issues and implementing fixes. There are some final tests and protocols that are required to be signed off by Thales and by RTG to be complete.

8. Practice Running and final Trial Running performance:

RTG has offered to perform practice running of the fleet and systems to ensure that operations are stable and robust. This is to prepare for the trial running period which consists of 12 consecutive days of train operations. This is a required element for revenue service availability. Once fleet availability and train-control elements are complete, this activity can commence. Moving to double train operations is a major step towards this plan.

9. Winter Operations:

As a result of significant winter events, RTG has experienced challenges with maintenance issues that have impacted train deployment on the track. RTG is working closely with Rideau Transit Maintenance (RTM), the maintainer for 30 years, to enhance its capabilities and winter maintenance approach. RTG/RTM have modified their winter operating plans and have acquired additional equipment and added resources to improve winter maintenance reliability. The City is conducting detailed analysis and closely monitoring the progress of these discussions.

The City is currently monitoring all critical elements and many are trending very well. The results of vehicle testing and the ability of RTG to operate 15 double car trains consistently will ultimately determine the new RSA date.

3. Schedule Management

On January 3, 2019, RTG provided an updated Revenue Service Availability (RSA) date of March 31, 2019. A joint City-RTG schedule workshop was held in late January to re-assess RTG's progress, and their plans to mitigate the schedule delays. Based on analysis extrapolated from dates in the RTG's December Works schedule, the City had low confidence in RTG's ability to meet a March 31 RSA date.

Although RTG had provided advanced notice that Substantial Completion would be met on or before February 27, to permit a March 31 RSA date, RTG has subsequently indicated that a notice would not be provided. RTG has advised that the system will be handed over to the City in Q2 2019. RTG has indicated that the next 14 days of consistent vehicle testing on the track are critical in determining the new RSA date. City staff continue to monitor the list of items noted in the Section 2 Risk Management.

Following RSA and handover to the City, City staff will need to undertake the operational readiness activities required to ensure that the Confederation Line seamlessly integrates into the OC Transpo's network prior to opening day, including additional City-led system integration and staff training. It is expected that Confederation Line service would be launched within one month of achieving the RSA date.

4. Finance and Agreement Administration

During the reporting period, Finance activity included:

- Claims processing (see Appendix B);
- Funding agreement administration;
- Update Schedule B; and,
- Addressing questions relating to eligibility and providing additional information on claimed expenses.

Agreement Administrative activities:

- Scope changes and variations are continually tracked within a variation log; and,
- Independent Certifier Report #s 63, 64 and 65 were reviewed during the period.

5. Tender Award Dates

Subcontractor Name	Brief Description/Scope	Date
Classic Tile Contractors Inc.	Segment 2 – 209 Rideau Station Tiling Manpower Support	16-Oct-18
	Segment 2 – 210 Ornamental Metals Additional Support at Rideau	12-Nov-18

Conventional Tender Dates for Confederation Line

Vendor Name	Purchase Order #	Tender Call Date (DD-MMM-YYYY)	Tender Award Date (DD-MMM-YYYY) *
BERRN CONSULTING LTD	46493420	Request for Proposal - Data Unavailable	4-Oct-2018
LANSDOWNE TECHNOLOGIES INC	45084555	Standing Offer - Call Up	5-Oct-2018
BELL MOBILITY INC	45087181	Request for Proposal - Data Unavailable	17-Oct-2018
GOLDER ASSOCIATES LTD	45087283	Standing Offer - Call Up	5-Nov-2018
DICKIE MOORE RENTALS LTD	46417123	Lowest Responsive Bid - Contract Amendment	7-Nov-2018
STONEHURST AND ASSOCIATES LTD	45081423	Standing Offer - Call Up	7-Nov-2018
TIREE FACILITY SOLUTIONS	45081587	Request for Proposal - Contract Amendment	13-Nov-2018
PODIUM PROJECTS INC	45081512	Standing Offer - Call Up	23-Nov-2018
LINDSEY QUALITY SOLUTIONS INC	45081738	Standing Offer - Call Up	28-Nov-2018
STONEHURST AND ASSOCIATES LTD	45081422	Standing Offer - Call Up	29-Nov-2018
KILLIN PRMC INC	45081559	Standing Offer - Call Up	3-Dec-2018
MDOS CONSULTING	45081446	Request for Proposal - Contract Amendment	21-Dec-2018
* Tender Award Date = Date the purchase order was issued			

6. Summary of Previously Provided Documentation

1. Q4 2018 Quarterly Memo to Council (February 1, 2019)
2. October, November and December IC Reports
3. FEDCO O-Train Confederation Line Project Updates on February 12 and March 5, 2019

Appendix A – Financial Summary

Confederation Line Provincial Contribution Agreement

Claim	Period	Date Submitted	Amount		Total	Paid	Fiscal Year Paid	Comment
			BCF	Gas Tax		Y/N		
1a	09/01/10-09/30/11	01/19/2012	11,122,825		11,122,825	Y	2012/13	Conventional at 28.6%
1b	09/01/10-09/30/11	09/13/2012	4,434,880		4,434,880	Y	2012/13	Conventional at 11.4%
2	10/01/11-12/31/11	05/17/2012	5,935,992		5,935,992	Y	2012/13	Conventional at 40%
3	01/01/12-03/31/12	05/28/2012	2,364,788		2,364,788	Y	2012/13	Conventional at 40%
4	04/01/12-06/30/12	09/13/2012	19,211,411		19,211,411	Y	2012/13	Conventional at 40%
5	07/01/12-09-30-12	11/30/2012	4,179,685		4,179,685	Y	2012/13	Conventional at 40%
6	10/01/12-12/31/12	02/26/2013	5,391,533		5,391,533	Y	2013/14	Conventional at 40%
7	01/01/13-03/31/13	05/28/2013	2,094,265		2,094,265	Y	2013/14	Conventional at 40%
8	04/01/13-06/30/13	04/09/2013	15,277,613		15,277,613	Y	2013/14	Conventional at 40%
9	07/01/13-09/30/13	12/04/2013	2,133,901		2,133,901	Y	2013/14	Conventional at 40%
M1	02/12/13-11/25/13	12/06/2013	106,683,433		106,683,433	Y	2013/14	Milestone #1
10	10/01/13-12/31/13	02/28/2014	3,425,092		3,425,092	Y	2014/15	Conventional at 40%
11	01/01/14-03/31/14	06/03/2014	1,422,129		1,422,129	Y	2014/15	Conventional at 40%
M2	11/26/13-06/29/14	07/16/2014	54,589,214		54,589,214	Y	2014/15	Milestone #2
12	04/01/14-06/30/14	09/10/2014	1,827,485		1,827,485	Y	2014/15	Conventional at 40%
M3	06/30/14-09/03/14	09/15/2014	22,268,590		22,268,590	Y	2014/15	Milestone #3
M4	09/04/14-11/05/14	11/17/2014	18,959,530		18,959,530	Y	2014/15	Milestone #4
13	07/01/14-09/30/14	12/05/2014	1,984,524		1,984,524	Y	2014/15	Conventional at 40%
14	10/01/14-12/31/14	02/27/2014	1,505,783		1,505,783	Y	2015/16	Conventional at 40%
M5	11/06/14-05/24/15	05/29/2015	45,310,714		45,310,714	Y	2015/16	Milestone #5
15	01/01/15-03/31/15	05/29/2015	1,345,970		1,345,970	Y	2015/16	Conventional at 40%
16	04/01/15-06/30/15	05/16/2015	1,232,825		1,232,825	Y	2015/16	Conventional at 40%
17	07/01/15-09/30/15	11/12/2015	1,827,991		1,827,991	Y	2015/16	Conventional at 40%
18	10/01/15-12/31/15	03/24/2016	1,709,283		1,709,283	Y	2016/17	Conventional at 40%
M6	05/25/15-03/21/16	04/06/2016	92,044,345		92,044,345	Y	2015/16	Milestone #6
19	01/01/16-03/31/16	05/06/2016	1,103,990		1,103,990	Y	2016/17	Conventional at 40%
M7	03/22/16-06/30/16	07/11/2016	54,457,691		54,457,691	Y	2016/17	Milestone #7
20	04/01/16-06/30/16	08/05/2016	1,419,538		1,419,538	Y	2016/17	Conventional at 40%
21	07/01/16-09/30/16	11/21/2016	1,025,098		1,025,098	Y	2016/17	Conventional at 40%
22	10/01/16-12/31/16	02/08/2017	1,157,543		1,157,543	Y	2016/17	Conventional at 40%

Claim	Period	Date Submitted	Amount		Total	Paid	Fiscal Year Paid	Comment
23	01/01/17-03/31/17	05/05/2017	1,681,598		1,681,598	Y	2017/18	Conventional at 40%
M8	07/01/16-03/10/17	07/07/2017	41,779,283		41,779,283	Y	2017/18	Milestone #8
24	04/01/17-06/30/17	08/16/2017	1,172,514		1,172,514	Y	2017/18	Conventional at 40%
25	07/01/17-09/30/17	11/17/2017	1,184,659		1,184,659	Y	2017/18	Conventional at 40%
26	10/01/17-12/31/17	03/01/2018	1,035,067		1,035,067	Y	2017/18	Conventional at 40%
27	01/01/18-03/31/18	04/25/2018	1,348,089		1,348,089	Y	2018/19	Conventional at 40%
28	04/01/18-06/30/18	08/08/2018	1,321,976		1,321,976	Y	2018/19	Conventional at 40%
29	07/01/18-09/30/18	11/29/2018	1,485,915		1,485,915	N	2018/19	Conventional at 40%
Total			538,456,760	74,500,000	612,956,760			

Appendix B – Contribution Agreement Activity

Confederation Line Federal Contribution Agreement

Claim	Period	Date Submitted	Amount		Retention on Claim	Total	Paid	Fiscal Year Paid	Comment
			BCF	Gas Tax					
							Y/N		
1	09/01/10-09/30/12	02/13/2013	28,430,156			28,430,156	Y	2012/13	Conventional at 40%
2	10/01/12-12/31/12	04/18/2013	1,914,890			1,914,890	Y	2013/14	Conventional at 40%
3	01/01/13-03/31/13	07/29/2013	1,022,723			1,022,723	Y	2013/14	Conventional at 40%
4	04/01/13-06/30/13	10/18/2013	3,016,825			3,016,825	Y	2013/14	Conventional at 40%
FM1	02/12/13-12/02/13	12/06/2013	106,683,433			106,683,433	Y	2013/14	Milestone #1
5	07/01/13-09/30/13	02/07/2014	884,300			884,300	Y	2013/14	Conventional at 40%
6	10/01/13-12/31/13	03/31/2014	2,559,914			2,559,914	Y	2013/14	Conventional at 40%
7	01/01/14-03/31/14	06/12/2014	536,256			536,256	Y	2014/15	Conventional at 40%; PAYE*
FM2	11/26/13-07/07/14	09/04/2014	54,589,214			54,589,214	Y	2014/15	Milestone #2
9	04/01/14-06/30/14	10/17/2014	1,379,206			1,379,206	Y	2014/15	Conventional at 40%
FM3	06/30/14-09/03/14	10/21/2014	22,268,590			22,268,590	Y	2014/15	Milestone #3
FM4	09/04/14-11/05/14	12/17/2014	18,959,530			18,959,530	Y	2014/15	Milestone #4
10	07/01/14-09/30/14	01/27/2015	881,492			881,492	Y	2014/15	Conventional at 40%
11	10/01/14-12/31/14	04/27/2015	944,456			944,456	Y	2015/16	Conventional at 40%
12	01/01/15-03/31/15	08/12/2015	677,902			677,902	Y	2015/16	Conventional at 40%; PAYE letter submitted April 2, 2015
FM5	11/06/14-05/24/15	07/08/2015	45,310,714			45,310,714	Y	2015/16	Milestone #5
13	04/01/15-06/30/15	11/23/2015	976,688			976,688	Y	2015/16	Conventional at 40%
14	07/01/15-09/30/15	03/29/2016	1,076,388			1,076,388	Y	2015/16	Conventional at 40%; PAYE
15	10/01/15-12/31/15	9/12/2016	1,215,004			1,215,004	Y	2016/17	Conventional at 40%
16	01/01/16-03/31/16	9/12/2016	891,416			891,416	Y	2016/17	Conventional at 40%
FM6	05/25/15-03/21/16	06/14/2016	92,044,345			92,044,345	Y	2015/16	Milestone #6; PAYE letter submitted April 6, 2016
17	04/01/16-06/30/16	9/12/2016	869,042			869,042	Y	2016/17	Conventional at 40%
FM7	03/22/16-06/30/16	10/04/2016	54,457,691			54,457,691	Y	2016/17	Milestone #7
18	07/01/16-09/30/16	12/08/2016	819,786			819,786	Y	2016/17	Conventional at 40%
FM9-1	07/01/16-01/20/17	03/17/2017	16,824,958			16,824,958	Y	2016/17	Milestone #9 - 94.3% of milestone
19	10/01/16-12/31/16	02/21/2017	941,784			941,784	Y	2016/17	Conventional at 40%
20	01/01/17-03/31/17	06/27/2017	1,522,811			1,522,811	Y	2017/18	Conventional at 40%
FM8	01/21/17-.3/31/17	08/10/2017	44,101,864			44,101,864	Y	2017/18	Milestone #8

Claim	Period	Date Submitted	Amount		Retention on Claim	Total	Paid	Fiscal Year Paid	Comment
FM10	04/01/17-07/25/17	08/11/2017	11,702,679			11,702,679	Y	2017/18	Milestone #10
21	04/01/17-06/30/17	08/16/2017	945,320			945,320	Y	2017/18	Conventional at 40%
22	07/01/17-09/30/17	11/17/2017	1,013,974			1,013,974	Y	2017/18	Conventional at 40%
23	10/01/17-12/31/17	02/28/2018	844,236		770,397	73,839	Y	2017/18	Conventional at 40%
24	01/01/18-03/15/18	03/19/2018	877,757		877,757	-	Y	2017/18	Conventional at 40%
FM11	07/26/17-03/09/18	04/03/2018	13,602,021			13,602,021	Y	2018/19	Milestone #11
FM9-2	03/14/17-07/03/18	07/25/2018	566,448			566,448	Y	2018/19	Milestone #9 - 3.2% of milestone
25	03/16/18-06/30/18	08/08/2018	1,443,874		1,442,349	1,525	Y	2018/19	Conventional at 40%
26	07/01/18-09/30/18	11/26/2018	1,434,646		1,434,646	-	Y	2018/19	Conventional at 40%
FM9-3	07/04/18-11/30/18	12/07/2018	433,457			433,457	Y	2018/19	Milestone #9 - 2.4% of milestone
Total			538,665,789	74,500,000	4,525,149	608,640,640			

Claim 8 is an SIS adjustment claim only for \$0.00.

*PAYE represents a claim for costs that are payable at year end.