



**STAFF REPORT
ACTION REQUIRED
with Confidential Attachment**

Automatic Train Control (ATC) Project Quarterly Update Report

Date:	September 28, 2015
To:	TTC Board
From:	Chief Executive Officer
Reason for Confidential Information:	This report contains advice that is subject to solicitor-client privilege, including communications necessary for that purpose.

Summary

The Board requested staff to report quarterly on the progress of the Automatic Train Control (ATC) project starting from June 2015. This second report covers the progress made since the previous report, the current status and a three month look ahead. The completion date of 2020 and budget of \$562.8 million are maintained.

Approval was received at the March 26, 2015 Board meeting to transfer the Computer Based Interlocking (CBI) scope of work from Ansaldo to Alstom. The Alstom works are progressing well and the Ansaldo contracts are now closed.

Consolidated within the scope of the ATC project is the commissioning of the signaling system on the TYSSSE extension before the end of 2017. This work is also well underway and on schedule.

Recommendations

It is recommended that the Board:

1. Receive the information as set out in the Confidential Attachment;
2. Authorize that the information provided in the confidential attachment is to remain confidential in its entirety as it contains information that is subject to solicitor-client privilege.

Financial Summary

This report has no financial impact as the purpose is to provide a status update on the progress of the ATC project.

Financial Summary - ATC Resignaling

(In Thousands)	Estimated Forecast at Completion	Total Actual Spend To Date	2015 Probable Spend
		Dec/31/2014	
Engineering Support and Signal Design			
Consultant costs	37,135	21,257	4,327
TTC Engineering costs	59,940	26,463	3,094
Total costs - Engineering Support and Signal Design	\$ 97,075	\$ 47,720	7,421
Speed Control System Implementation	\$ 3,773	\$ 2,765	508
Automatic Train Control	-		
Contract costs	196,577	62,938	24,468
TTC Installation costs	65,910	24,408	2,279
Total costs - ATC	\$ 262,487	\$ 87,346	26,747
Engineering Test Track & Training Facility(ETTF)	\$ 16,902	\$ 12,598	1,500
CBTC- Facility Rooms	\$ 44,258	\$ 9,897	5,759
Project Equipment , Materials & Tools Costs (Inc TRs)	\$ 72,950	\$ 50,888	3,528
Project Closures & System Recovery	\$ 33,620	\$ 7,584	1,500
Other Items to be included in cash flow(Holding back)	\$ 3,108	(5,442)	(2,104)
Project - Contingency	\$ 28,662		3,000
Total ATC Project Cash Flow	\$ 562,835	\$ 213,355	\$ 47,859

Accessibility/Equity Matters

This report and recommendations have no accessibility or equity issues.

Decision History

The full decision history on the ATC project was received by the Board in June 2015. Minutes of the Board meeting are available on the TTC website. Refer to item 7 in the following link:

https://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2015/June_22/Reports/ATC_quarterly_update_June_2015.pdf

Comments

The following provides an update on the targets set for the period June to September 2015.

Target:

Complete dynamic testing of first Toronto Rocket (TR) Train by July 15, 2015.
{Dynamic testing consists of proving that the train can be controlled by the new signaling system hardware and software onboard the train as it moves down the track. It is a major component of a very complicated interface that must be proven before the next steps of testing the signaling system can take place}

Achievement:

Dynamic testing was successfully conducted on the first TR train at the Engineering Test Track & Training Facility (ETTF) on June 30, 2015. This significant milestone paves the way for dynamic testing of the remaining 77 TR trains for Line 1.

Target:

Complete design of ETTF by August 14, 2015.

Achievement:

The engineering design that supports the proof of concept of the Alstom product in the TTC environment was completed on August 07, 2015.

Target:

Complete review of all system requirements by September 30, 2015.

{Requirements are detailed technical statements that translate normal language of a contract into clear statements that can be agreed by TTC and proven with tests or analysis. They are created first at the system level and then at a sub-system level}

Achievement:

The system requirements were received from Alstom on August 31, 2015 and are currently being reviewed by TTC. The TTC review will be completed by September 30, 2015. Review of the sub-system requirements will follow and be completed by December 18, 2015. Resolution of the issues found and formal acceptance is also scheduled for December 18, 2015.

Target:

Complete dynamic testing of four additional TR's by September 30, 2015.

Achievement:

Dynamic testing has been completed on three further TR trains with the fourth being completed in the first week of September 2015. It is likely a further two trains will be dynamically tested before the end of September 2015.

Target:

Complete installation of ETTF with new signaling equipment.

Achievement:

Installation of all equipment, both trackside and in the equipment rooms at ETTF is progressing well and is on track to be completed by the end of September 2015. This is a significant milestone in establishing a robust environment to conduct the proof of concept testing, conduct further testing and establish a "real world" facility to train all TTC staff.

The following targets are set for the October to December 2015 period:

October to December 3 Month Look ahead	Date
1. Conduct ATC/ATO demonstration at ETTF	October 30, 2015
2. Commence axle counter trial at Wilson	November 30, 2015
3. Complete dynamic testing of 10 additional TR's	December 18, 2015
4. Complete the design Proof Of Concept at ETTF	December 18, 2015
5. Complete Intermediate Design Review (IDR)	December 18, 2015

The overall schedule and phased commissioning remains unchanged and is shown below:

PROPOSED SCHEDULE		2015				2016				2017				2018				2019				2020			
CBTC PHASES	CBTC PHASE#	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
SYSTEM DESIGN	N/A																								
ETTF	0																								
WILSON - ST.CLAIR WEST	1																								
VAUGHAN CORPORATE - WILSON (INC YARD INTERFACE)	2																								
ST.CLAIR WEST - BLOOR	3																								
BLOOR - EGLINTON	4																								
LAWRENCE - FINCH	5																								
MAIN LINE & INTERFACE TO WILSON YARD	6																								

LEGEND

ATC Commissioning

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Attachments

Confidential Attachment – ATC Project Quarterly Update Report