



## **STAFF REPORT INFORMATION ONLY**

### **Automatic Train Control Project Update**

<b>Date:</b>	December 16, 2015
<b>To:</b>	TTC Board
<b>From:</b>	Chief Executive Officer

### **Summary**

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The Board requested staff to report quarterly on the progress of the Automatic Train Control (ATC) project starting from June 2015. This third report covers the progress made since the previous report in September and a three month look ahead.

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.

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

The completion date of 2020 and budget of \$562.8 million are maintained.

In future, the quarterly update on the ATC project will be provided to the Board through the Chief Executive Officer's report update in lieu of a separate quarterly Board report.

### **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)	EFC	Total Actual Spend To Date	2015 Probable
		Dec/31/2014	
<b>Engineering Support and Signal Design</b>			
Consultant costs	37,135	21,257	4,327
TTC Engineering costs	59,940	26,463	3,094
<b>Total costs - Engineering Support and Signal Design</b>	<b>\$ 97,075</b>	<b>\$ 47,720</b>	<b>7,421</b>
<b>Speed Control System Implementation</b>	<b>\$ 3,773</b>	<b>\$ 2,765</b>	508
<b>Automatic Train Control</b>	-		
Contract costs	196,577	62,938	24,468
TTC Installation costs	65,910	24,408	5,779
<b>Total costs - ATC</b>	<b>\$ 262,487</b>	<b>\$ 87,345</b>	<b>30,247</b>
<b>Engineering Test Track &amp; Training Facility(ETTF)</b>	<b>\$ 16,902</b>	<b>\$ 12,598</b>	<b>1,500</b>
<b>CBTC- Facility Rooms</b>	<b>\$ 44,258</b>	<b>\$ 9,897</b>	<b>5,759</b>
<b>Project Equipment , Materials &amp; Tools Costs ( Inc TRs)</b>	<b>\$ 72,950</b>	<b>\$ 50,888</b>	<b>3,528</b>
<b>Project Closures &amp; System Recovery</b>	<b>\$ 33,620</b>	<b>\$ 7,584</b>	<b>1,500</b>
<b>Other Items to be included in cash flow(Holding back)</b>	<b>\$ 3,108</b>	<b>(5,442)</b>	<b>(2,104)</b>
<b>Project - Contingency</b>	<b>\$ 28,662</b>		<b>3,000</b>
<b>Total ATC Project Cash Flow</b>	<b>\$ 562,835</b>	<b>\$ 213,355</b>	<b>\$ 51,359</b>

The Chief Financial & Administration Officer has reviewed this report and agrees with the financial impact information.

## **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](https://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2015/June_22/Reports/ATC_quarterly_update_June_2015.pdf)

For the previous targets and achievements in the period June to September 2015 refer to item 9 in the following link:

[https://www.ttc.ca/About\\_the\\_TTC/Commission\\_reports\\_and\\_information/Commission\\_meetings/2015/September\\_28/Reports/ATC\\_Project\\_Quarterly\\_Update\\_Report\\_PT\\_15\\_Sept\\_15.pdf](https://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2015/September_28/Reports/ATC_Project_Quarterly_Update_Report_PT_15_Sept_15.pdf)

## **Comments**

The following provides an update on the targets set for the period October to December 2015:

### **Target:**

Conduct ATC/ATO demonstration at ETTF by October 30, 2015

### **Achievement:**

A successful demonstration of ATC/ATO was conducted in early November. The demonstration included a train traversing the track in ATO whilst indications were observed on the equipment in the ETTF trailers

### **Target:**

Commence an axle counter reliability trial at Wilson by November 30, 2015

### **Achievement:**

The trial at Wilson is progressing well with wayside equipment installed and expected to be functional by December 11, 2015. There is no impact to the schedule.

**Target:**

Complete dynamic testing of 10 additional TR's by December 18, 2015

**Achievement:**

At the time of this report eight additional trains, twelve in total, have been dynamically tested. The target will be exceeded before December 18, 2015

**Target:**

Complete the design Proof of Concept at ETTF by December 18, 2015

**Achievement:**

Determining that Alstom's product operates satisfactorily in Toronto's subway environment is called the Proof of Concept. Following the successful demonstration of ATC/ATO this target is on track to be met before December 15, 2015

**Target:**

Complete Intermediate Design Review (IDR) by December 18, 2015

**Achievement:**

Following the Proof of Concept at ETTF Project staff and Alstom can hold the intermediate review of the design solution. Given the proximity to the holidays this target is likely to slip into early January 2016 for final sign off. There is no impact to the Final design review in May 2016 or the overall schedule.

<b>January to March 2016 - 3 Month Look ahead</b>	<b>Date</b>
1. Submission of Phase 2 scheme plan from Alstom	February 28, 2016
2. Complete cable tray installation from Sheppard W to York U	March 31, 2016
3. Complete dynamic testing of 10 additional TR's	March 31, 2016
4. Commence signaling cable installation on Phase 1	March 31, 2016
5. Delivery of first batch of Phase 2 axle counters to TTC	March 31, 2016

In future, the quarterly update on the ATC project will be provided to the Board through the Chief Executive Officer's report update in lieu of a separate quarterly Board report.

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

<b>PROPOSED SCHEDULE</b>		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 <span style="display: inline-block; width: 10px; height: 10px; background-color: #000080; border: 1px solid black;"></span>

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