



**STAFF REPORT  
ACTION REQUIRED  
with Confidential Attachment**

Procurement Authorization - PNR Railworks Inc.- Toronto-York Spadina  
Subway Extension

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| <b>Date:</b>                                | May 27, 2015  |
| <b>To:</b>                                  | TTC Board   |
| <b>From:</b>                                | Chief Executive Officer   |
| <b>Reason for Confidential Information:</b> | This report contains advice that is subject to solicitor-client privilege, including communications necessary for that purpose. |

**Summary**

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The TTC has been working towards the replacement of the aging subway signalling system with a Computer Based Interlocking system (CBI) and installation of an Automatic Train Control system (ATC). One contract was issued to Alstom Power Transport Canada Inc. (Alstom) for installation of the ATC system on Line 1 including the Toronto-York Spadina Subway Extension (TYSSE). Three separate contracts were awarded to Ansaldo STS Canada Inc. (Ansaldo) for replacement of the existing signalling system on Line 1 and installation of a CBI system on TYSSE.

Approval was received at the March 26, 2015 Board Meeting to transfer the replacement of the existing signalling system from Ansaldo and consolidate the work of four contracts and two companies into a single contract with Alstom.

Two contracts with Ansaldo were for design and supply of the new CBI system on Line 1 to replace the existing signalling system. Installation is being carried out by TTC forces. The third contract with Ansaldo was for design, supply and installation of the CBI system on the TYSSE. Ansaldo sub-contracted out the installation of the CBI system to PNR Railworks Inc. (PNR). Upon termination of the contract with Ansaldo, the PNR subcontract with Ansaldo will also be terminated. It is recommended that TTC forces assume the responsibility for installation of the CBI system on TYSSE similar to their work on Line 1.

The PNR subcontract includes the procurement and leasing of a variety of site specific installation equipment including tunnel construction vehicles with person lifts, cranes, flatcars, cable reel equipment, custom made tunnel communication system, emergency rescue equipment and various hoisting equipment, storage units and trailers (collectively

the “PNR Assets”). To ensure a safe and efficient transfer of the installation work from PNR to TTC forces and to ensure that the approved budget and completion date of TYSSE by December 2017 is maintained, it is recommended that as part of the Ansaldo contract termination, the TTC commence negotiations with PNR in order to have PNR assign the PNR Assets to the TTC for continued use by the TTC.

## **Recommendations**

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### **It is recommended that the Board:**

1. Authorize TTC staff to negotiate with PNR to have PNR assign the PNR Assets from the Ansaldo contract to the TTC for continued use by the TTC including any/all maintenance and training requirements to support the installation of the Automatic Train Control (ATC) system required for the TYSSE line.
2. Approve the recommendation as set out in the Confidential Attachment.
3. 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.

### **Implementation Points**

Following approval of this recommendation, adjustments to the A70-9 Ansaldo TYSSE contract can be made and close out costs finalized and negotiations with PNR can commence.

### **Financial Summary**

Sufficient funds for this expenditure are included in the Capital Project 2.4 - Signal Systems - YUS ATC Resignalling and Capital Project – Toronto-York Spadina Subway Extension (TYSSE) in the 2015-2024 Capital Budget as approved by City Council at its meeting on March 11, 2014.

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

### **Accessibility / Equity Matters**

There are no accessibility or equity issues related to this report

### **Decision History**

#### **2008: Existing Signal System Replacement with CBI – South Yonge (Contract C31PV07834)**

Signal system replacement on south Yonge was identified as Phase 1 on Line 1 (i.e. St Patrick to Eglinton Stations). Approval was received from the Board for award of a contract in September 2008 for design, supply and installation of a CBI signal system on

the south Yonge portion of Line 1, to Ansaldo. This was initiated through a pre-qualified competitive procurement process. Minutes of the Board meeting are available on the TTC website. Refer to: agenda item 12 in the following link:

[http://www.ttc.ca/About\\_the\\_TTC/Commission\\_reports\\_and\\_information/Commission\\_meetings/2008/Sept\\_18\\_2008/Supplementary\\_Agenda/index.jsp](http://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2008/Sept_18_2008/Supplementary_Agenda/index.jsp))

**2009: ATC – Entire Line 1 (Contract C31PV08752)**

Approval was received from the Board in April 2009 for award of a contract to Alstom for design, supply and installation of ATC on the entire Line 1 and supply of ATC equipment for installation on 39 Toronto Rocket subway trains through a publicly advertised competitive procurement process. Minutes of the Board meeting are available on the TTC website. Refer to agenda item 4 in the following link:

[http://www.ttc.ca/About\\_the\\_TTC/Commission\\_reports\\_and\\_information/Commission\\_meetings/2009/Apr\\_27\\_2009/Agenda/index.jsp](http://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2009/Apr_27_2009/Agenda/index.jsp))

**2011: ATC – Additional Trainsets for Line 1 (Contract C31PV08752)**

A contract change was subsequently issued June 2011 to Alstom pursuant to approval from the Board to increase the supply of ATC equipment for Toronto Rocket subway trains from 39 to 60 trains (21 additional sets of equipment). Minutes of the Board meeting are available on the TTC website. Refer to agenda item 5 in the following link:

[http://www.ttc.ca/About\\_the\\_TTC/Commission\\_reports\\_and\\_information/Commission\\_meetings/2011/April\\_6\\_2011/Agenda/index.jsp](http://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2011/April_6_2011/Agenda/index.jsp))

**2012: Existing Signal System Replacement with CBI – Remainder of Line 1 (Contract C31PV11825) and Addition of CBI on TYSSE Line (Contract A70-9)**

Approval was received from the Board for award of contracts in March 2012 for design, supply and installation of a CBI signal system for the remainder of Line 1 in four phases and for the addition of a new CBI based signal system to the TYSSE line to Ansaldo through a pre-qualified competitive procurement process. Minutes of the Board meeting are available on the TTC website. Refer to agenda item 13 in the following link:

[http://www.ttc.ca/About\\_the\\_TTC/Commission\\_reports\\_and\\_information/Commission\\_meetings/2012/March\\_30/Minutes\\_Other/Sup\\_Agenda\\_Mar\\_30.jsp](http://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2012/March_30/Minutes_Other/Sup_Agenda_Mar_30.jsp)

**2013: ATC – Additional Trainsets for TYSSE (Contract C31PV08752)**

A contract change was issued January 2013 to Alstom to increase the supply of ATC equipment for Toronto Rocket subway trains from 60 to 70 trains (10 additional sets of equipment). Approval for this contract change was within staff's signing authority under the Authorization for Expenditures and Other Commitments Policy.

**2014: Changes to Scope and Schedule for Alstom ATC Contract**

Approval was received from the Board in April 2014 for changes to the contract scope and schedule with Alstom for design, supply and installation of ATC on the entire Line 1

and supply of ATC equipment for an additional 10 Toronto Rocket subway trains. Minutes of the Board meeting are available on the TTC website. Refer to agenda item 5a in the following link:

[http://www.ttc.ca/About\\_the\\_TTC/Commission\\_reports\\_and\\_information/Commission\\_meetings/2014/April\\_30/Agenda/index.jsp](http://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2014/April_30/Agenda/index.jsp)

### **March 26, 2015- Board Report- Changes to the TTC Resignalling Contract**

The TTC Board approved a contract change to the Alstom ATC signalling contract, transferring the CBI scope of work from Ansaldo to Alstom. This consolidated the signalling contracts under one supplier and reduced the three contracts with Ansaldo and one contract with Alstom (total four contracts) to a single contract with Alstom. Analysis and estimates indicated that as a result of the complexity reduction and savings on existing implementation methods, the project team would be able to deliver project expectations within the approved budget of \$562,000,000 including all termination and de-scoping costs. Refer to agenda item 5b in the following link:

[http://www.ttc.ca/About\\_the\\_TTC/Commission\\_reports\\_and\\_information/Commission\\_meetings/2015/March\\_26/Agenda/index.jsp](http://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2015/March_26/Agenda/index.jsp)

## **Issue Background**

The existing TTC subway signalling system consists of an aging infrastructure and a train operation technology that is not capable of supporting an ever-increasing passenger ridership. This results in delays due to signal equipment breakdowns, leading to overcrowding on station platforms and customer service deterioration. The signalling system is therefore in need of both end of life replacement and an increase in system capacity. The resignalling of the line achieves both of these objectives.

From 2008, TTC incrementally awarded publically tendered contracts to address the immediate, medium and long term challenges related to the resignalling of Line 1 and more recently the signalling of TYSSE. Ansaldo and Alstom won different elements of the overall solution.

Over recent years, ridership growth predictions have increased, TYSSE signalling was added to the original ATC scope and in addition technical and schedule issues have arisen within the solutions of some of these contracts and interfaces between suppliers which could not have been foreseen.

Given the implementation challenges of these contracts, in 2014 TTC commissioned Parsons Consultants to conduct an independent study of the signalling contracts for Line 1 and TYSSE. This report concluded that the existing arrangements with four contracts and two contractors was the least efficient option against a background of rising costs and delays to deliver the project. The report determined the most effective solution to deliver on budget and schedule as well as the best way to manage the risks, is to complete the resignalling of Line 1 and the signalling of TYSSE, by consolidating the signalling

contracts under one supplier, Alstom. This report aligned with TTC's Subway Operations own evaluation.

TTC was proactive in making the difficult choice to recommend adding the CBI scope to the Alstom contract and to cancel the three Ansaldo contracts to ensure TTC gets the maximum performance and reliability from ATC for many years to come on both Line 1 and TYSSE.

As detailed in the Decision History portion of this report, a total of three CBI contracts exist between TTC and Ansaldo; two contracts for Line 1 and one contract for the TYSSE portion. The Line 1 contracts include the design and supply of the Ansaldo CBI whereas the TYSSE contract includes the design, supply and the installation of the Ansaldo CBI.

The Line 1 installation has been performed by TTC Construction resources. Ansaldo has subcontracted out the installation work on TYSSE to PNR. PNR is a very reputable construction contractor within the rail industry specializing in track, transit and signal services throughout Canada.

Negotiations are underway with Ansaldo concerning the termination of the three signalling contracts. Given that the TYSSE contract included the installation portion, which was subcontracted to PNR, all PNR scope would be terminated, including all purchased and leased on site construction assets. The termination agreement with Ansaldo will be the subject of a future Board report.

To facilitate safe and efficient signalling system construction activities, PNR procured and leased a variety of site specific construction assets and strategically placed the assets over two surface road based sites along with locating construction vehicles and equipment within the available constructed tunnel areas of the TYSSE line. These assets formed a key part of the PNR construction strategy, ensuring secure storage of materials and tooling.

PNR was officially mobilized to commence construction on October 20, 2014 and continued CBI installation activities until January 23, 2015, when a stop work order was issued to PNR. Up until the point of ceasing construction activities, PNR had completed approximately 60% of the required CBI construction work in the Sheppard West to Downsview station tunnel area. All existing PNR assets remained on site but were recently relocated to allow for other contractors access into the aforementioned tunnel area.

Under the revised Alstom CBI consolidated concept, TYSSE and Line 1 CBI design, supply and installation activities are appropriately phased to meet scheduled commissioning deadlines. Project teams are being integrated to ensure a common approach with a go forward plan. As a result, it is recommended that all signalling installation activities be performed by TTC forces.

## **Comments**

### **ATC System – Moving Forward Plan**

With the Ansaldo contract termination proceedings underway and the Alstom contract amendment in effect on both the Line 1 and the TYSSE lines, all PNR construction equipment would be removed upon contract termination and not available for use by TTC construction forces. These assets are necessary components to ensure the success of the construction forces within the TYSSE environment. Some of the assets are as follows: tunnel construction vehicles with person lifts, cranes, flatcars, cable reel equipment, custom made tunnel communication system, emergency rescue equipment, various hoisting equipment along with suitable facilities for TTC construction employees. To ensure optimal functionality of the equipment and operational competency of TTC employees, arrangements to properly maintain the equipment, along with providing appropriate training to TTC employees will be required.

It is therefore recommended that as part of the Ansaldo contract termination, the TTC commence negotiations with PNR in order to have PNR assign the PNR Assets to the TTC for continued use by TTC.

### **Justification**

To achieve the aggressive construction schedule and support the opening of the TYSSE line by the end of 2017, proceeding with negotiations to have the PNR Assets assigned (or purchased) to the TTC provides the following schedule benefits:

- Avoids the preparation of new tender documents, lengthy tender and award periods for infrastructure already in place, which may involve multiple tenders or sublease arrangements;
- Eliminates lead times for the design and fabrication of the above mentioned equipment in particular the required construction vehicles;
- Demobilization and mobilization period for previous and any proceeding contractors;
- Avoidance of additional site planning and safety reviews of new infrastructure along with any new permit applications and executions required.

Procuring the PNR Assets, yields the following cost savings:

- No additional setup costs of new infrastructure would be incurred for design, procurement and installation of tooling, vehicles and equipment scaffolding etc;
- Reduced demobilization costs of PNR (lowering Ansaldo termination costs under TYSSE contract) and elimination of any future mobilization costs of subsequent contractors or TTC forces;
- Acquisition of customized signalling tools and equipment (i.e. scaffolding for shaft access; signalling equipment installation vehicles manufactured specifically

- for TTC rail and TYSSE tunnel structure) along with an established proven and effective security system at tunnel drop shaft and material storage location;
- Acquisition of customized safety and communication equipment specially designed for this work area and environment;
  - Realizing the benefit that all PNR costs are capped in 2012 pricing from the initial Ansaldo contract award as opposed to incurring inflationary 2015 pricing for new tender and award of assets.

The assignment of the PNR Assets to the TTC also significantly reduces any claims made by PNR against either Ansaldo or the TTC with respect to work performed or materials supplied to the TYSSE Project.

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## **Attachments**

Confidential attachment - Procurement Authorization - PNR Railworks Inc.- Toronto-York Spadina Subway Extension