

**Agenda – Standing Policy Committee on Finance – March 3, 2016**

**REPORTS**

**Item No. 3                      Automatic Fare Collection System (Project No. 4230001409) –  
Financial Status Report No. 14 for the Period Ending December 31,  
2015**

**WINNIPEG PUBLIC SERVICE RECOMMENDATION:**

That the financial status of the Automatic Fare Collection System Replacement Project, as contained in the report, be received as information.

## ADMINISTRATIVE REPORT

**Title:**                **AUTOMATIC FARE COLLECTION SYSTEM (PROJECT NO. 4230001409) – FINANCIAL STATUS REPORT NO. 14 FOR THE PERIOD ENDING DECEMBER 31, 2015**

**Critical Path:**    **STANDING POLICY COMMITTEE ON FINANCE**

### AUTHORIZATION

Author	Department Head	CFO	CAO
T. Dreolini	D. Wardrop	M. Ruta	D. McNeil

### RECOMMENDATIONS

That the financial status of the Automatic Fare Collection System Replacement Project, as contained in the report, be received as information.

### REASON FOR THE REPORT

Administrative Standard No. FM-004 requires quarterly reporting to the Standing Policy Committee on Finance.

### EXECUTIVE SUMMARY

This is a multi-phase capital project that has already updated Transit's fare collection hardware with electronic fareboxes and will introduce a smart card system for fare payments to replace paper tickets and passes. This updated technology will provide more flexibility and convenience for passengers to purchase fare products and will enhance security and data collection over the previous fare collection system.

### IMPLICATIONS OF THE RECOMMENDATIONS

None.

**HISTORY**

On February 22, 2006, Council approved the report submitted by the Transit Department entitled Implementation Plan for Rapid Transit Task Force Recommendations. The implementation plan included a recommendation that the existing fareboxes be replaced with an automated fare collection system. The fareboxes dated back to the early 20th Century and had been out of production for decades. Implementation of a new fare collection system was intended to modernize and simplify the fare collection process, provide more convenience and options for passengers, and improve the security of fare collection.

The Automatic Fare Collection System has a total budget of \$17.74 million; \$15.24 million was approved in the 2011 and earlier Capital Budgets and Council approved the transfer of an additional \$2.5 million from surpluses in the 2011 Transit Buses Capital Project and the Transit System Funds retained earnings at its meeting of July 20, 2011.

**MAJOR PROJECT STEERING COMMITTEE**

Administrative policy for projects with capital costs exceeding \$10 million requires formation of a Major Capital Project Steering Committee. The Committee has been formed and its members are:

Paul Olafson, Corporate Controller, Corporate Finance Department  
Clive Wightman, Director of Community Services  
Dave Wardrop, Director of Transit

The Committee has reviewed this report and recommends that the report be sent to the Standing Policy Committee on Finance.

**PROJECT STATUS**

The project remains within budget but is behind schedule.

**DESCRIPTION OF PROJECT**

Fare collection is a core element of Transit's business and has an impact on the operations of every division within the department. This is an extremely complex technology project involving the installation of electronic validating fareboxes on Transit's fleet and the implementation of a smart card-based automatic fare payment system that is supported by the necessary financial and information technology hardware and software systems.

The electronic validating fareboxes have been configured to accept coins and valid tokens only and collect, secure, reliably count and report all fare payments. They have been configured to print and validate transfers. They have also been equipped to read and write to contactless electronic smart cards.

Pre-purchased fare products will be offered on electronic smart cards. These cards will contain a record of the payment, including the time of payment, and will constitute the "transfer" to permit the passenger to board another bus for free during the valid time period.

Retail outlets, as well as telephone and on-line systems, will be used by passengers to conveniently reload transit products or value onto the reloadable electronic smart cards.

As an enhancement to this project, Transit will introduce a single ride token that will be used exclusively for schools and social service agencies. The tokens have been produced by the Royal Canadian Mint and have a unique electro-magnetic signature that will be verified by the new fareboxes to prevent counterfeiting. The tokens should last a minimum of 10 years.

The primary contract for the supply of the automatic fare collection system was awarded to Garival Inc. of Laval, Quebec in the estimated amount of \$12,934,470.00 before all taxes in January 2012.

### **PROJECT SCHEDULE**

The Automatic Fare Collection System Project is being delivered in two phases. Phase 1 was completed in June 2013 and consisted of the installation of the new fareboxes on the entire bus fleet. Paper tickets and monthly and weekly flash passes will continue to be used during Phase 1 and early in Phase 2 of the project.

Smart cards are being implemented as Phase 2 of the project. The smart card system has been in development since 2013. The complexity of the implementation has required more system development, verification and rework than was initially anticipated and this has caused the project to fall behind schedule.

Detailed System Integration Testing has been underway in Transit's and the system developer's test lab environments since October 2014 and has continued throughout the course of this reporting period. In addition to lab testing, field testing is being used to verify the critical functions required to purchase fare products, manage the card inventory, use the smart cards on buses and create system reports. The field tests are intended to generate large volumes of test transactions using Transit employees and in service buses and will verify the operation of all hardware and software systems.

Field Test One occurred in June 2015 and generated over 100,000 smart card transactions on 340 buses. This test identified a number of areas in the system that required debugging and rework. Transit representatives attended the smart card system development site in Chicago in September 2015 and observed a successful comprehensive test of the system. This version of the system was installed and lab tested in Winnipeg in October and November 2015. Field Test Two occurred in November and December 2015. This field test identified two farebox hardware issues and a few minor software bugs that must be corrected before the system is ready for implementation.

The decision to implement the smart card system will not be made until the entire system successfully completes all lab and field testing. This is expected to be completed Spring 2016 to allow the cards to be introduced to the public in a staged roll out beginning in early summer 2016.

The delivery of the project is being accomplished through seven separate contracts that were awarded as shown in the table below.

Bid Opportunity Number	Description	Date of Contract Award	Estimated Completion Date	Award Amount
550-2008	The Gooderham Group - Consultant Services for the Update of Transit Fare Collection Systems and Technology	October 22, 2008	December 2011	\$86,973.00
345-2011	Infodev Electronic Designers International - Integration of On-Board Security Camera and Fare Collection Systems with Existing Advanced Transit Communication and Vehicle Location System	May 13, 2011	November 2012	\$919,175.00 <sup>1</sup>
777-2011	McKim Cringan George - Development and Implementation of a Multimedia Public Information Campaign	November 23, 2011	September 2014	\$159,400.00 <sup>1</sup>
878-2011	The Gooderham Group - Implementation Project Manager	November 23, 2011	December 2015	\$285,526.00
925-2010	Garival Inc. - Automatic Fare Collection System	January 1, 2012	December 2015	\$12,934,470.00
877-2011	Ernst and Young LLP - Professional Accounting/Audit Advisory Services	February 10, 2012	December 2014	\$22,750.00
Sole source	KPMG LLP – Consulting Services	May 7, 2012	December 2014	\$85,000.00

Total Award Amount  
\$14,493,294.00

<sup>1</sup>A portion of these awards have been charged to separate projects as the contract work spanned multiple projects (\$461,125.00)

Total Award Amount Applied to Fare Collection \$14,032,169.00

### **RISK AND MITIGATION STRATEGIES**

This new technology must undergo extensive testing and verification before it can be introduced to the public. Rushing the development and testing in the interests of rapid deployment creates a risk that the system provided to the public will contain defects that impact their ability to purchase or use fare products. Several recent smart card implementations in North America have had to be pulled back after introduction or have caused substantial passenger dissatisfaction when systems did not function properly.

The risk of delay in the development of the smart card technology has been mitigated with the two phase implementation. With a phased implementation, the coin validating and automated transfer verification technology have already been placed into service.

The risks of technical or card distribution problems following the smart card implementation are being mitigated by extensive testing at the contractor's test environment, Transit's test environment and in service. Smart cards will be introduced by passenger classes beginning with Handi-Transit registrants, seniors, youth, full fare, eco pass and post-secondary customers. During the roll out, paper passes and tickets will not be phased out until the volume of smart cards sold is sufficient to avoid a surge in demand and excessive line ups at card distribution points.

This project is in part financed by the Manitoba Winnipeg Infrastructure Fund. The commitment expired on March 31, 2015. The City put forward a request to the Province in March requesting the deadline be extended to claim the remaining commitment of \$1.8 million. The Province approved the funding extension to March 31, 2017 on September 30, 2015.

### **FINANCIAL ANALYSIS**

<b>Project Component</b>	<b>Budget</b>	<b>Value/Cost Estimate</b>	<b>Variance Budget to Contract Value/Cost Estimate</b>	<b>Change in Variance from Last Report</b>
Professional Services	\$1,200,000	\$1,238,195	(\$38,195)	-
External Contracts	14,680,000	14,680,000	-	-
Other Equipment	860,000	860,000	-	-
Overhead and Others	1,000,000	961,805	38,195	-
	<b>\$17,740,000</b>	<b>\$17,740,000</b>	<b>-</b>	<b>-</b>

#### **Summary**

Contracts Issued to Date	\$14,032,169
Total Change Orders (Garival)	\$338,222
Other Project Costs (Provincial Retail Sales Tax, Overheads, Salaries, Communication and Other Contingencies):	<u>\$3,369,609</u>
<b>Total Approved Budget:</b>	<b>\$17,740,000</b>

No change orders were approved during this reporting period. In total, eighteen change orders with Garival were implemented at a total net cost, before taxes, of \$338,222.40.

Budget revisions will be accommodated in the External Contracts portion of the project.

Professional Services include the following:

1. Technical engineering consultation on the design and testing of the fare collection system;
2. External auditing of systems and procedures necessary to secure revenue; and
3. Marketing to effectively communicate the changes to the public.

Other equipment includes the following:

1. Infrastructure changes and equipment in Transit garage buildings and treasury to allow secure revenue servicing and coin handling;
2. The communications hardware required for the new fareboxes to exchange route and bus stop information with the bus radio system and use the Wi-Fi system within Transit buildings to communicate with data servers to upload revenue collection information from the bus and download fare structure and smart card update information to the farebox on a daily basis.

The breakdown of payments under the Contract with Garival Inc. are itemized below. Phase 1 of the project consists of the installation of the great majority of the hardware necessary for the project including all fareboxes and cash vaults. The payment for this phase makes up 60% of the total value of the contract. A deficiency payment of 5% of the total contract is being retained from Phase 1 because the farebox transfer printers are not meeting reliability requirements. A written agreement regarding this deficiency payment has been accepted by Garival Inc. and will remain in place until the printers achieve specified reliability levels.

Phase 2 of the project is for the implementation of the smart card system and makes up 40% of the value of the contract. To date, 12.5% of the Phase 2 work has been deemed to be complete and paid. Further payments will be made as milestones are met by the contractor.

<b>Garival Contract Details</b>	
Contract Value	\$ 12,934,470
Payments to Date	-\$ 7,760,695
Holdback for Farebox Deficiencies	-\$ 646,736
Milestone Payments Not Yet Earned	\$ 4,527,039

The project cash flow is included in Appendix 1 (attached).

**FINANCIAL IMPACT**

**Financial Impact Statement**

**Date:** February 5, 2016

**Project Name:** Automatic Fare Collection System – Financial Status Report  
**First Year of Program** 2012

No. 14 for the Period Ending December 31, 2015

**Comments:**

There is no financial impact as this report is for information only.

original signed by:

Tanis Yanchishyn, CPA, CA  
Manager of Finance and Administration



**CONSULTATION**

**In preparing this report there was consultation with:**

None

**OURWINNIPEG POLICY ALIGNMENT**

**01-1b Key Directions for the Entire City** – *“Key Directions for Connecting and Expanding our Sustainable Transportation and Infrastructure Network.”*

Create a safe, efficient and equitable transportation system for people, goods and services.

**SUBMITTED BY**

Department:	Transit
Division:	Plant and Equipment
Prepared by:	Tony Dreolini, Manager of Plant & Equipment
Date:	February 5, 2016
File No.	925-2010

Appendix I

AUTOMATIC FARE COLLECTION SYSTEM  
TRANSIT DEPARTMENT  
As of December 31, 2015

Project Component	Capital Budget			Capital Expenditure Forecast			Surplus (Deficit)  From Revised Budget	Variance Last Report	Change in Variance
	Council Approved Changes July 20,2011			Actual Costs		Total			
	Original	Note 2	Revised	To Dec 31, 2015	2016	Forecast			
A PROFESSIONAL SERVICES Note 1	\$ 1,200,000	\$ -	\$ 1,200,000	\$ 842,319	\$ 395,876	\$ 1,238,195	(38,195)	(38,195)	0
B EXTERNAL CONTRACTS	12,180,000	2,500,000	14,680,000	9,317,702	5,362,298	\$ 14,680,000	-	-	-
C OTHER EQUIPMENT	860,000	-	860,000	757,784	102,216	\$ 860,000	-	-	-
D OVERHEADS AND OTHER	1,000,000	-	1,000,000	589,750	372,055	\$ 961,805	38,195	38,195	(0)
	\$ 15,240,000	\$ 2,500,000	\$ 17,740,000	\$ 11,507,555	\$ 6,232,445	\$ 17,740,000	0	\$ -	\$ 0

Explanatory Notes

1-Professional Services includes amounts for a communication/advertising campaign.

2-Prevailing market conditions increased expected costs.