

Agenda – Standing Policy Committee on Finance – January 10, 2020

REPORTS

**Item No. 4 Automatic Fare Collection System, Project ID: 4230001409,
Quarterly Project Status Report No. 28
For the Period Ended August 31, 2019**

WINNIPEG PUBLIC SERVICE RECOMMENDATION:

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

ADMINISTRATIVE REPORT

**Title: Automatic Fare Collection System,
Project ID: 4230001409,
Quarterly Project Status Report No. 28
For the Period Ended August 31, 2019**

Critical Path: Standing Policy Committee on Finance

AUTHORIZATION

| Author | Department Head | CFO | CAO |
|------------|-----------------|----------------------------|-------------------------|
| K. Cumming | G. Ewankiw | P. Olafson, Interim CFO | M. Ruta, Interim CAO |

EXECUTIVE SUMMARY

Project On Schedule: Yes No

Project On Adopted Budget: Yes No

Percent of Schedule Complete:

Percent of Adopted Budget Spent:

The project remains within the amended budget but is behind schedule. This is due to a delay between 2016 and 2018 of the contractor, Garival Inc., to deliver on several Phase 2 milestones.

During the period from May 31, 2019 to August 31, 2019, system stability was monitored in order to evaluate the system's final Operational Performance Test. Progress was made to address the remaining system issues, namely increasing the speed of farebox card readers and replacing the existing merchant card loading systems with a new, tablet-based system ("RPass 3"). Winnipeg Transit received shipment of all of the hardware components required for the RPass 3 system and began preparing a rollout schedule to merchant partners.

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

RECOMMENDATIONS

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

REASON FOR THE REPORT

The Asset Management Administrative Standard FM-004 requires all projects with a total estimated cost of \$23 million (2019) or more report quarterly to the Standing Policy Committee on Finance. This threshold is adjusted annually for construction inflation as part of the annual Capital Budget approval. The Standing Policy Committee on Finance may also request reporting on any capital project.

IMPLICATIONS OF THE RECOMMENDATIONS

No implications.

HISTORY/DISCUSSION

See Appendix C – Key Project Events (History)

Construction (Update from last report)

No updates since last report.

Table 1 – Contracts

| Contracts Table | | | | | | | |
|-------------------|--|---|--|---|---------------|--------------------|----------------------|
| Bid Opportunity # | Company Name | Description | Original Contract Award Value (GST & MRST extra as applicable) | Total Approved Over-Expenditures (Over-Expenditure amount only) | Date of Award | Date of Completion | Estimated % Complete |
| 550-2008 | The Gooderham Group | Consultant Services for the Update of Transit Fare Collection Systems and Technology | \$86,973 | \$ 147,344 | Oct 2008 | Dec 2011 | 100% |
| 345-2011 | Infodev Electronic Designers International | ¹ Integration of On-Board Security Camera and Fare Collection Systems with Existing Advanced Transit Communication and Vehicle Location System | \$919,175 | - | May 2011 | Nov 2012 | 100% |
| 777-2011 | McKim Cringan George | ¹ Development and Implementation of a Multimedia Public Information Campaign | \$159,400 | - | Nov 2011 | Dec 2016 | 100% |
| 878-2011 | The Gooderham Group | Implementation Project Manager | \$285,526 | 175,663 | Nov 2011 | Dec 2015 | 100% |
| 925-2010 | Garival Inc. | Automatic Fare Collection System | \$12,934,470 | - | Jan 2012 | | 87% |
| 877-2011 | Ernst and Young LLP | Professional Accounting/Audit Advisory Services | \$22,750 | - | Feb 2012 | Dec 2014 | 100% |
| Sole source | KPMG LLP | Consulting Services | \$85,000 | - | May 2012 | Dec 2014 | 100% |
| Sole source | The Gooderham Group | Implementation Project Manager | \$36,000 | - | Apr 2016 | | 71% |
| 319-2019 | Compugen Inc. | Supply and Delivery of Hardware | \$104,578 | | May 2019 | August 2019 | 100% |
| Total | | | \$14,633,872 | \$ 323,007 | | | |

Upcoming Procurements:

| Description | Anticipated Award Date |
|-------------|------------------------|
| | |
| | |

| | |
|----------------------------------|------------------|
| Total Award Amount | \$14,633,872 |
| Add: Amount of Over-Expenditures | <u>\$323,007</u> |
| | \$14,956,879 |

¹A portion of these awards have been charged to (461,125) separate projects as the contract work spans multiple projects _____

| | |
|---|---------------------|
| Total Award Amount Applied to Fare Collection | <u>\$14,495,754</u> |
|---|---------------------|

| Garival Contract Details | |
|-----------------------------------|--------------|
| Contract Value | 12,934,470 |
| Payments to Date | (11,253,028) |
| Milestone Payments Not Yet Earned | 1,681,442 |

Schedule (Update from last report)

During the period from May 31, 2019 to August 31, 2019, system stability was monitored and progress was made to addressing the remaining system issues, namely increasing the speed of farebox card readers and replacing the existing merchant card loading systems with a new, tablet-based system (known as the “RPass 3”).

In July and August 2019, Winnipeg Transit received shipment of all of the hardware components required for the RPass 3 system and began preparing a rollout schedule to merchant partners. Some issues with the back-end software supporting the RPass 3 system were discovered by Winnipeg Transit testing that delayed the rollout to a larger number of merchants, but as of August 2019 the rollout was planned for October 2019.

In August 2019, testing on farebox firmware upgrades to improve card reader speed was completed and as of September 2019, a field test has begun. This field test involves upgrading the firmware on fareboxes in a small number of buses in service and carefully monitoring performance.

Table 2 – Milestones

| Milestones | | | | | |
|-------------------|--|--|---|-------------------------------|-----------------------------|
| | Deliverable | Original Targeted Completion Date | Revised Targeted Completion Date | Actual Completion Date | Estimated % Complete |
| 1 | 2.2 - Successful test of the full system in production environment | 2016 Q1 | 2016 Q1 | 2016 Q1 | 100% |
| 2 | 2.3 - Installation of all devices and system updates in production environment | 2016 Q2 | 2016 Q2 | 2016 Q2 | 100% |
| 3 | 2.4a - Field test of full system in production environment and completion of training programmes | 2016 Q2 | 2016 Q2 | 2016 Q2 | 100% |
| 4 | 2.4b - Launch | 2016 Q3 | 2016 Q3 | 2016 Q3 | 100% |
| 5 | 2.2b - Phase 2B elements (visitor card) testing completed | 2016 Q3 | 2017 Q4 | 2017 Q4 | 100% |
| 6 | 2.5 - Successful completion of Revenue Acceptance Test | 2016 Q3 | 2018 Q4 | 2018 Q4 | 100% |
| 7 | 2.3b - Phase 2B elements (visitor card) equipment (functionality) installed | 2016 Q3 | 2019 Q4 | - | 50% |
| 8 | 2.6 - Successful completion of six month Operational Performance Test and completion of all escrow obligations | 2017 Q1 | 2019 Q4 | - | 0% |

Risk (Update from last report)

Updates reflected in Risk Table 3

Table 3 – Significant Risks and Mitigations Strategies

| Significant Risks and Mitigation Strategies | |
|--|---|
| Risk Statement and Explanation | Risk Mitigation Management Plan |
| <u>New:</u> | |
| | |
| <u>Ongoing:</u> | |
| The Verifone technology for reading and loading cards at merchant partner locations is becoming increasingly difficult to source | Replaced City-managed Verifone units with desktop-based POS systems. Tested a new, tablet-based version of the merchant partner card loading system to replace the existing system, and will be deploying this system in a phased rollout to merchant partner locations. |
| Potential passenger dissatisfaction should system not function as promised | Extensive testing and verification has been performed before being introduced to the public. |
| | Quick customer service response to customer and agent issues once smart cards are in circulation. |
| | Delayed removal of paper fare products until technical issues are addressed. |
| | Winnipeg Transit Information Systems staff work with the contractors to help diagnose any software issues quickly and direct them to appropriate solutions. |
| <u>Mitigated:</u> | |
| Risk of card distribution problems if every passenger is allowed to acquire a smart card at the same time. | Smart cards have been introduced by passenger class, specifically Winnipeg Transit Plus (Handi-Transit) registrants, seniors, youth, full-fare, eco-pass and post-secondary customers. |
| | Also, paper products will not be phased out until the volume of smart cards sold is sufficient to prevent a surge in demand, and excessive line-ups at card distribution points. |

Financial (Update from last report)

For further information, refer to Appendix B – Financial Forecast

Funding (Update from last report)

No updates from last report.

Table 4 – Project Funding Forecast and Receivable

| Funding Source | Adopted Budget (in millions) | Amended Budget (in millions) | Committed (in millions) |
|---|---|---|------------------------------------|
| Class of Estimate | Class 4 | Class 3 | |
| City of Winnipeg | | | |
| Cash to Capital | 8.240 | 7.557 | 7.557 |
| Retained Earnings | - | 2.850 | 2.850 |
| Public Transit Reserve | - | 0.089 | 0.089 |
| Subtotal City of Winnipeg | 8.240 | 10.496 | 10.496 |
| Federal Government | | | |
| Federal Gas Tax | - | 0.244 | 0.244 |
| Province of Manitoba | | | |
| Manitoba Winnipeg Infrastructure 2010 Provincial Grant for Roads | 7.000 | 7.000 | 7.000 |
| Total | 15.240 | 17.740 | 17.740 |

Property Acquisition (Update from last report)

Not applicable.

Stakeholder Engagements/Communications (Update from last report)

No update.

Subsequent Events after Report Period End Date

Since August 31, 2019, Winnipeg Transit has completed installation of all RPass 3 software units at merchant partner locations (as of November 8th, 2019). Feedback on this system has been positive, as transaction times have been reduced from an average of 57 seconds per transaction to an average of 8 seconds per transaction. System functions such as end-of-day reports are now also easier to navigate for merchant partner users.

Since August 31, 2019 Winnipeg Transit has been conducting a field test of farebox firmware that increases the speed of peggo card taps at the farebox. The time required for a tap at the farebox has been reduced from an average of 1.4 seconds to an

average of below 0.5 seconds. Increasing tap speeds allows for a faster boarding process for riders, thus improving Transit's on-time performance. As well, increased tap speeds will reduce the likelihood of card errors resulting from cards being removed from the card reader before data has finished transferring. As of November 2019, the field test has been expanded to 40 buses, and results have been positive.

Transit staff are currently evaluating whether the criteria have been met to accept Milestone 2.6, and anticipate that the milestone will be accepted in December 2019.

FINANCIAL IMPACT

Financial Impact Statement **Date:** December 16, 2019

Project Name:

**Automatic Fare Collection System,
Project ID: 4230001409,
Quarterly Project Status Report No. 28
For the Period Ended August 31, 2019**

COMMENTS:

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

original signed by

Laurie Fisher, CPA, CA
Manager of Finance & Administration

CONSULTATION

This Report has been prepared in consultation with:

N/A

OURWINNIPEG POLICY ALIGNMENT

01-3 Prosperity Direction 1: Provide efficient and focused civic administration and governance. This report supports demonstration of accountability through service performance measurement and reporting.

WINNIPEG CLIMATE ACTION PLAN ALIGNMENT

N/A

SUBMITTED BY

Department: Transit

Division: Information Systems

Prepared by: Kirk Cumming, Manager of Information Systems

Date: December 16, 2019

Appendices

Appendix A – Key Project Facts

Appendix B – Financial Forecast

Appendix C – Key Project Events (History)

Appendix A – Key Project Facts

| Appendix A – Key Project Facts | |
|---|---------------------------------------|
| Project Name | Automatic Fare Collection System |
| Business Owner (Department) | Winnipeg Transit |
| Project ID | 4230001409 |
| Project Sponsor | |
| | Greg Ewankiw |
| Department Responsible for Project Delivery | Winnipeg Transit |
| Consultant Engineer (Company Name) | N/A |
| Adopted Budget | |
| | \$15,240,000 |
| Class of Estimate (Adopted) | Class 4 |
| Range of Estimate (Adopted) | -30% to + 60% \$10.668 M - \$24.384 M |
| Amended Budget | |
| | \$17,740,000 |
| Class of Estimate (Amended) | Class 3 |
| Range of Estimate (Amended) | -20% to + 30% \$14.192 M - \$23.062 M |
| <u>Project Scope</u> | |
| Phase 1 | |
| The design, supply, delivery, installation, commissioning, warranting and servicing of a turnkey automatic farebox fare collection system for conventional and BRT buses operated by Winnipeg Transit | |
| Phase 2 | |
| Design, supply, delivery, installation, commissioning, warranting and servicing of a smart card system for payment of fares, a purchasing system for merchant partners to sell fare products, a point-of-sale system for Winnipeg Transit to sell fare products, and a web-based system for self-service online purchase of fare products | |
| Major Capital Projects Advisory Committee Membership: | |
| <ul style="list-style-type: none"> - Greg Ewankiw, Director of Transit - Kirk Cumming, Manager of Information Systems - Paul Olafson, Corporate Controller, Corporate Finance Department - Cindy Fernandes, Director of Community Services - Rob Taylor, Manager, Major Capital Projects Oversight - Laurie Fisher, Manager of Finance & Administration | |

Appendix B – Financial Forecast

Appendix B - Automatic Fare Collection System* As at August 31, 2019

| Project Component Deliverables | Budget (in 000's) | | | Expenditure Forecast (in 000's) | | | | | Surplus (Deficit) From Amended Budget | Variance Last Report | Change in Variance | |
|---|-------------------|-------------------------------|-------------------|---|-----------------|-------------|-------------|-------------|---|----------------------------|--------------------------|------------------------------|
| | Adopted Budget | Council Approved Change | Amended Budget | Actual Costs To August 31, 2019 | Projected Costs | | | | | | | Total Forecasted Costs |
| | | | | | 2019 | 2020 | 2021 | 2022 | | | | |
| Engineering, Design and Other ¹ | \$ 13,715 | \$ 2,500 | \$ 16,215 | \$ 14,219 | \$ 2,034 | | | | \$ 16,253 | \$ (38) | \$ (38) | \$ - |
| Construction | | \$ - | \$ - | | | | | | \$ - | \$ - | \$ - | \$ - |
| Land Acquisition | | \$ - | \$ - | | | | | | \$ - | \$ - | \$ - | \$ - |
| Internal Financing/Overhead Costs | \$ 999 | \$ - | \$ 999 | \$ 665 | \$ 296 | | | | \$ 961 | \$ 38 | \$ 38 | \$ - |
| Contingency ² | \$ 526 | \$ - | \$ 526 | | \$ 526 | | | | \$ 526 | \$ - | \$ - | \$ - |
| Total Project Budget | \$ 15,240 | \$ 2,500 | \$ 17,740 | \$ 14,884 | \$ 2,856 | \$ - | \$ - | \$ - | \$ 17,740 | \$ - | | |
| % of Project Budget Spent (Actual Costs to Date / Adopted & Amended Budget) | 98% | | 84% | | | | | | | | | |

* Amended budget and actual costs to date have been agreed to the City's general ledger and Capital Expenditures Monthly Report.

** Approved by Council July 20, 2011

¹ Engineering, Design and Other include amounts previously reported under Professional Services, External Contracts, and

² Original budget amount per category has been restated to separate the contingency into its own category. The overall project budget remains unchanged. The budgeted contingency disclosed represents the remaining amount as of the end of the reporting period.

Appendix C – Key Project Events (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.

The Automatic Fare Collection System Project was 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 are continuing to be used in Phase 2 of the project.

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. The reliability of farebox transfer printers has improved, and the requirement to achieve a specified reliability level has been transferred to one of the remaining Phase 2 milestones. A written agreement regarding this specified reliability levels and the transfer of this requirement to a Phase 2 payment milestone has been accepted by Garival Inc.

Smart cards have been 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.

As an enhancement to this project, Transit has introduced a single ride token that is used exclusively by schools and social service agencies. The tokens were produced by the Royal Canadian Mint and have a unique electro-magnetic signature that are verified by the new fareboxes to prevent counterfeiting. The tokens should last a minimum of 10 years. Tokens were introduced into service on August 4, 2016.

The smart card system was implemented for seniors on July 4th, 2016 with Full Fare and Youth passengers commencing August 8, 2016. The University of Winnipeg rolled out peggo for U-Pass in September 2016, and the University of Manitoba rolled out peggo for U-Pass in September 2017.

The Visitor Card functionality of the system was successfully tested in September of 2017.

In November of 2017, Garival indicated that they were beginning to have difficulty sourcing replacement parts for the Verifone technology used as card loading systems for merchant partners. Transit brought up the issue with subcontractor Productive Solutions, who indicated that they were beginning development on a tablet-based replacement for the Verifone technology. In April 2018, Transit was shown a prototype of this new system, and in October of 2018 Transit began testing the fully-developed product internally.

During the period from smart card launch in 2016 until 2018, system stability issues prevented the Revenue Acceptance Test milestone from being completed.