

# TORONTO TRANSIT COMMISSION REPORT NO.

**MEETING DATE:** November 23, 2011

**SUBJECT:** TTC AND THE PRESTO FARE COLLECTION SYSTEM

## **ACTION ITEM**

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### **RECOMMENDATION**

It is recommended that the Commission:

1. Approve the following framework and general principles for implementing Metrolinx PRESTO fare collection system on TTC premises (including vehicles, as applicable), noting that this will allow the TTC to finalize its agreements with Metrolinx relating to the design, implementation and operation of a modified and enhanced PRESTO system, commonly referred to a PRESTO NG:
  - a) The PRESTO Services are to include modifications and enhancements to the current PRESTO system to allow for an e-fare account based payment system with an open architecture using industry standards, which will accommodate open loop financial cards, mobile applications and future technological innovations ("PRESTO NG"). The modifications and enhancements to the current PRESTO system to achieve PRESTO NG will be phased in over a period of time;
  - b) Metrolinx (PRESTO) to provide the following managed services: financing, building, implementing, procuring , operating, servicing, and maintaining PRESTO NG ("PRESTO Services");
  - c) TTC's capital cost related to the design, implementation and operation of the PRESTO Services to be capped at \$47M;
  - d) Upon full implementation of PRESTO NG, TTC's operating costs for fare collection at the TTC will remain at the same levels as currently experienced;
  - e) PRESTO NG is to be designed and implemented to meet TTC business and performance requirements;
  - f) Development of a detailed Project Plan agreeable to both Metrolinx and TTC;
  - g) Establishment of a dispute resolution mechanism to resolve any issues between the parties;

- h) Establishment of a design or solution review process with appropriate TTC sign-off, approval and/or consultation, as applicable; and
  - i) The previously approved Key Principles as set out in Attachment B of Appendix A.
2. Delegate authority to the Chief General Manager to continue to negotiate with Metrolinx and execute any and all necessary agreements with Metrolinx related to the design, implementation and operation of the PRESTO Services in a manner consistent with the principles set out in paragraph (1) above.

## **FUNDING**

Funding of \$140 million is included under Program 5.4 Fare System – TTC/GTA Farecard Project (as outlined on pages 1171-1175) in the TTC's 2011-2015 Capital Program as approved by City of Toronto Council on February 23, 2011. Funding of \$140 million was included under the Canada Strategic Infrastructure Fund (CSIF), to be shared by Canada, Ontario and the City of Toronto, pending execution of an amendment to the Contribution Agreement and completion of a satisfactory business case. The \$140 million is not sufficient to fully implement the PRESTO smartcard system at the TTC. The unfunded portion of the project is reflected "below-the-line" in the TTC's 2012-2016 Capital Program. Final confirmation has not been received for the full \$140 million. However, discussions are underway with Provincial, Federal and City staff to amend the existing agreements and confirm the \$47 million Federal CSIF funding contribution for PRESTO. Metrolinx staff will prepare the necessary business case to secure the Federal portion of the CSIF funding.

On July 6, 2011, the Commission approved the PRESTO-TTC financial approach and capped the TTC's capital costs to implement PRESTO at the previously budgeted \$47 million City of Toronto portion of the CSIF funding. As outlined in the July 6<sup>th</sup> Commission report, the TTC-PRESTO capital costs above the \$140 million identified as part of the CSIF program will be financed by Metrolinx over a 10-year period, and these costs will be recovered as part of a fixed-fee payment paid by TTC to PRESTO.

Once PRESTO is fully implemented throughout the TTC, as outlined in this report, the PRESTO fixed-fee annual operating cost would be offset by other TTC fare collection operating savings and should result in no net increase to TTC's overall fare collection operating costs. There is no anticipated PRESTO-specific operating impact for 2012. However, during the transition phase when the PRESTO system is being implemented and the TTC's legacy fare system is still required, there is the potential that the TTC's overall costs for fare collection may increase. The increased costs could arise from operating two systems simultaneously for a period of time.

**BACKGROUND**

In June 2011, the Commission approved the adoption of the PRESTO fare collection system, subject to developing acceptable operating and financial agreements, and confirming all the funding necessary to proceed with the project (see Appendix A). The basis for this approval was a commitment by the Province and Metrolinx that the PRESTO system would meet TTC's customer, business and financial needs. This included a commitment that PRESTO would be able to support advances in fare payment technologies, including open payments. This report also noted that the funding for other programs and projects could be in jeopardy if the TTC did not adopt and implement the PRESTO fare collection system. The decision by the TTC to use the PRESTO Services would eliminate the risk that this other funding would be in jeopardy.

At the June 2011 meeting, the Commission also approved the following:

- (1) staff to undertake discussions with representatives of Metrolinx to develop the necessary agreements based on the Framework for Addressing Key Principles (see Attachment B of Appendix A) and report back to the Commission;
- (2) the TTC's upfront capital costs to implement PRESTO be capped at the previously budgeted amount of \$47M; and
- (3) that until such time as a final agreement can be reached between the TTC, the Province, and Metrolinx on the PRESTO system, that the Affiliated Computer Services (ACS) Request for Proposal (RFP) be extended to remain open until November 23, 2011.

In July 2011, the Commission approved a financial approach for implementing PRESTO at TTC whereby a significant portion of the TTC-PRESTO capital costs would be financed by the Province and recovered as part of fixed-fee paid by TTC to PRESTO. TTC capital costs would be capped at \$47M. As part of the financial approach, Metrolinx would retain ownership and responsibility of the PRESTO devices and networks during the term of the agreement. The fixed fee would cover the repayment of the Provincially financed capital costs and a wide range of "managed services" that would be provided by PRESTO. Once fully implemented, TTC costs under PRESTO were expected to be comparable to TTC's current costs of fare collection. The financial approach outlined in the report would form the basis for a TTC and Metrolinx (PRESTO) operating agreement with applicable performance service level agreements. Staff was directed to continue to meet with representatives of Metrolinx to develop the agreements between TTC and Metrolinx.

This report summarizes the status of these discussions and outlines a way forward for the TTC to finalize its agreements with Metrolinx relating to the design, implementation and operation of a modified and enhanced PRESTO system, commonly referred to a PRESTO NG.

## DISCUSSION

### A. Discussions with Metrolinx on Developing Agreements

Over the past few months, TTC staff has attended numerous meetings with representatives of Metrolinx to develop the details related to agreements necessary for the TTC to confirm its participation in the PRESTO system. These meetings have also included detailed discussions regarding the TTC's business requirements (*i.e.* what the PRESTO system needs to do to support TTC customers and business operations). During these meetings, progress has been made on defining the parameters that will be the basis for finalizing the detailed agreements between Metrolinx and TTC. These parameters are consistent with the overall Framework for Addressing Key Principles that the Commission approved in June 2011. The key elements of this framework are outlined below. It should be noted that there are still some areas that require further discussion before the agreements can be finalized; these are also outlined below.

The framework for the agreements requires Metrolinx to design, procure, build, install, operate, service and maintain PRESTO NG, consistent with agreed upon TTC business requirements. Metrolinx will finance the capital costs for the project, including:

- all costs associated with the infrastructure modifications necessary to install and support PRESTO NG at all TTC stations and facilities, including garages, shops and bus platforms;
- all equipment purchases (e.g. devices; hardware and software) and installation costs;
- all costs to upgrade the central system and back office operations to meet TTC business requirements;
- system communications and network costs; and
- all capital reinvestment costs to ensure the system is maintained in a state-of-good-repair.

TTC's capital costs will be capped at \$47M, and will be used to upgrade available power in subway stations and at other TTC locations as necessary to allow for Metrolinx to implement PRESTO NG, and internal project team and staff costs required to support the project.

Metrolinx will be responsible for the ongoing operation of the PRESTO NG system, including but not limited to, all back office operations, such as system monitoring and management, customer call centre, website, and system security. Metrolinx will also be responsible for all revenue collection and the servicing and maintenance of all system field equipment. The collection of cash payments from vehicle fareboxes, and for the maintenance of both turnstiles and vehicle fareboxes would continue to be the responsibility of TTC.

In return for the above, the TTC would pay Metrolinx a fixed-fee that would be calculated as a percentage of TTC fare revenues which are processed through the PRESTO system. The fixed-fee percentage is not applicable to cash payments deposited into TTC vehicle fareboxes, which will continue to be collected and processed by TTC. Upon full implementation and deployment of the PRESTO system on TTC premises, the TTC will be committed to paying a minimum fee to Metrolinx. The intention is that the TTC will

eliminate the legacy fare collection system, save and except for cash fares.

In addition, Metrolinx has proposed the establishment of a surplus fund in order to ensure that the TTC's payments to Metrolinx do not exceed Metrolinx's expenditures relating to the PRESTO system. Based on Metrolinx's proposal, Metrolinx will track the fee payable by the TTC against its expenditures and if any surplus exists (*i.e.* TTC payment exceeds Metrolinx expenditures during any fiscal year), the surplus funds will either be reinvested into the PRESTO system or divided equally between the parties. This will also be subject to an audit by the TTC.

Based on current TTC business requirements, when PRESTO is fully implemented throughout the TTC system and the legacy fare collection system has been retired, it is estimated that the overall costs of fare collection at the TTC will remain at approximately 7% of total passenger revenues. This is because the PRESTO fixed-fee annual operating cost would be offset by other TTC fare system operating savings. However, during the transition phase when the PRESTO system is being implemented and the TTC's legacy fare system is still required, there is the possibility that the TTC's overall costs for fare collection may increase. The increased costs could arise from operating two systems simultaneously for a period of time.

Metrolinx will have overall responsibility for the implementation of PRESTO throughout the TTC transit system, including system design, development, testing, installation, and training. However, TTC has an important role in these efforts, as TTC will have joint sign-off with Metrolinx on the project plan, and at other key project milestones such as user acceptance and design reviews. The implementation of PRESTO at TTC will also be coordinated between the parties by a joint Steering Committee that will be chaired by a senior representative of the TTC.

Metrolinx has identified plans to modify and enhance the current PRESTO system during the implementation period to become an e-fare account-based payment system. The PRESTO system will be updated to "PRESTO NG" (*i.e.* an open architecture using industry standards, and which will support open loop financial cards, mobile applications and future technological innovations). Metrolinx has also indicated that PRESTO will support the functionality and other attributes as required by the TTC's business requirements. As noted later in this report, these requirements are still under discussion with Metrolinx.

Metrolinx is targeting to have the PRESTO system "substantially implemented" at the TTC in 2015, in advance of the Pan Am/Parapan Am games. This is an aggressive timetable, but a detailed schedule will be worked out and jointly agreed to by Metrolinx and the TTC.

Any disputes that arise during implementation will be referred to the TTC's CGM and Metrolinx's CEO to resolve, and, if required, the TTC Chair and Metrolinx Chair. If no resolution is achieved, the dispute will be referred to binding arbitration.

The term of the operating agreement will be for 10-years after the installation of the first PRESTO device developed and purchased under this agreement. The current high level implementation plan expects this first device to be installed before the end of 2012. Metrolinx's proposal includes two renewal periods each with a term of five years. The

agreement will automatically renew unless the TTC provides notice to Metrolinx that it does not wish to renew the agreement at the end of the initial term.

Accessibility will be an important element of a new fare collection system at the TTC. Metrolinx and TTC staff have met with ACAT, and the ACAT Design Review Sub-Committee, to discuss the accessibility features of the existing PRESTO system and identify proposed improvements for the implementation of PRESTO at TTC. The TTC's submitted business requirements include ACAT's initial business requirements and device specifications that would improve the accessibility of PRESTO for TTC customers with disabilities. TTC staff will continue to liaise with Metrolinx and ACAT throughout the PRESTO design, build and implementation process to ensure the PRESTO system addresses the needs of TTC customers with disabilities.

It is important to note that as part of the agreements between Metrolinx and the TTC, the TTC would become part of an existing system with established rules about the ongoing governance of the PRESTO system. Metrolinx would assume responsibility for certain activities that the TTC has historically had autonomy over (e.g. certain customer service policies). Subject to an applicable dispute resolution process, ongoing decisions impacting the PRESTO system would be made jointly with the system's other participants and not by TTC alone.

#### B. Next Steps to Develop Agreements with Metrolinx

The parameters outlined above provide the foundation and business principles required to develop the various legal agreements between Metrolinx and TTC relating to the TTC's use of the PRESTO system. However, both Metrolinx and TTC staff recognize that additional details are required prior to finalizing any agreement(s), including:

- confirmation that Metrolinx can meet the TTC's business requirements; and
- confirmation of performance requirements and service level agreements that define the expected level of performance from the PRESTO system.

These topics will be discussed over the next few months between Metrolinx and the TTC. The objective is to reach agreement on these topics consistent with the general principles set out in Recommendation No. 1 above, and include these as part of the final agreement(s) between Metrolinx and the TTC.

Metrolinx recognizes the importance of maximizing the positive impact on TTC customers and TTC operations, and has confirmed its commitment in writing to develop transit e-fare solutions that meet TTC Business Requirements as presented to PRESTO (see Appendix B).

Based on the Commission's concurrence with the framework and general principles outlined in this report, TTC staff will continue the work necessary to address the outstanding issues and develop the legal agreements necessary in a manner consistent with the approved general principles. On this basis, it is recommended that the authority to execute any and all agreement(s) required for the design, implementation and operation of the PRESTO Services on TTC premises (including vehicles, as applicable) be delegated to the Chief General

Manager.

### C. Overview of Open Standards Fare System (OSFS) RFP Terms and Metrolinx Draft Agreements

The terms of the OSFS RFP and the draft agreements with Metrolinx are similar on a number of factors (see Appendix C):

- Capital funding for system implementation and state-of-good repair;
- The estimated impact on operating expenses at full system implementation and operations (based on TTC's detailed business requirements); and
- The range of "managed services" to be provided to TTC during both the implementation and operation of the system.

While staff have negotiated the basic framework for an agreement with Metrolinx, there are still some areas left to confirm as between the parties. These include the details of how PRESTO will support the TTC's business requirements including system performance requirements, and how PRESTO will evolve to an open payments system capable of supporting all TTC fare policies, products and services.

Based on satisfactory resolution of these discussions, the key difference between the terms of the OSFS RFP and Metrolinx relate to the governance structure. As noted earlier in this report, under PRESTO the TTC will become part of an existing governance structure that involves decisions about PRESTO being made jointly with the system's other participants.

## **JUSTIFICATION**

The meetings with Metrolinx over the past few months have defined a framework and general principles for the TTC's use of the PRESTO Services that are consistent with the Key Principles approved by the Commission in June, 2011. There are still details to be worked out before any agreement(s) can be finalized, but Metrolinx has made a commitment to ensure that TTC's business requirements will be addressed.

The expectation is that the necessary details can be worked out over the next few months consistent with the framework and general principles outlined in this report. This will then enable work to begin to substantially implement PRESTO at the TTC by the targeted date of the Pan Am/Parapan Am games in 2015.

The signing of these agreements with Metrolinx will also ensure that the funding for other programs that is contingent upon TTC's participation in PRESTO (i.e. gas tax; purchase of new streetcars; MOU which includes the Eglinton-Scarborough Crosstown transit initiative) will continue.

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Appendix A: Electronic Fare Collection at the TTC (Commission Report – June, 2011)  
Appendix B: Letter from CEO of Metrolinx (dated November, 2011)  
Appendix C: Overview of Open Standards Fare System (OSFS) Agreement and  
Metrolinx/PRESTO Draft Agreements

**Appendix C:**  
**Overview of Open Standards Fare System (OSFS) Agreement and Metrolinx/PRESTO Draft Agreements**  
**(2 pages in total)**

Factor	OSFS	Metrolinx/PRESTO
<b>Implement Open Payments System</b>	<ul style="list-style-type: none"> <li>• Implement open payments system that supports all TTC fare policies, fare products, and services identified by TTC</li> </ul>	<ul style="list-style-type: none"> <li>• Modify/enhance PRESTO system to support e-fare account based payment system with open architecture to accommodate open loop financial cards</li> <li>• Support for all TTC fare policies, products and services to be confirmed</li> </ul>
<b>Services Provided to TTC During Implementation</b>	<ul style="list-style-type: none"> <li>• Civil works in subway and throughout TTC</li> <li>• Provide and install all field equipment</li> <li>• Develop communications for all TTC modes</li> <li>• Back-end software/hardware/systems/services</li> </ul>	<ul style="list-style-type: none"> <li>• Civil works in subway and throughout TTC</li> <li>• Provide and install all field equipment</li> <li>• Develop communications for all TTC modes</li> <li>• Back-end software/hardware/systems/services</li> </ul>
<b>Services Provided to TTC During System Operations</b>	<ul style="list-style-type: none"> <li>• Revenue collection, servicing and maintenance of all OSFS equipment</li> <li>• All back office operations</li> </ul>	<ul style="list-style-type: none"> <li>• Revenue collection, servicing and maintenance of all PRESTO equipment</li> <li>• All back office operations</li> </ul>
<b>Capital Costs</b>	<ul style="list-style-type: none"> <li>• No cap on capital cost, but based on TTC analysis capital costs are estimated to be \$47M or less</li> <li>• Vendor to cover all other capital costs necessary to implement OSFS</li> <li>• Update system to maintain state-of-good-repair</li> <li>• Two system refreshes during operating term</li> </ul>	<ul style="list-style-type: none"> <li>• TTC costs capped at \$47M</li> <li>• Metrolinx to finance all other capital costs necessary to implement PRESTO</li> <li>• Update system to maintain state-of-good-repair</li> <li>• Commitment to refresh during operating term</li> </ul>
<b>Fixed Fee Payment Obligations (i.e. Operating Costs)</b>	<ul style="list-style-type: none"> <li>• At full implementation, overall fare collection costs expected to remain at approximately 7% of fare revenues</li> <li>• Fixed fee payment subject to annual minimum and maximum amounts</li> </ul>	<ul style="list-style-type: none"> <li>• At full implementation, overall fare collection costs expected to remain at approximately 7% of fare revenues</li> <li>• Fixed fee payment subject to minimum amount (at full implementation and deployment)</li> <li>• no maximum; excess funds over Metrolinx expenditures to be reinvested into system or divided amongst parties (establishment of a Surplus Fund)</li> </ul>

**Appendix C:  
Overview of Open Standards Fare System (OSFS) Agreement and Metrolinx/PRESTO Draft Agreements  
(2 pages in total)**

<b>Contract Term/Renewal</b>	<ul style="list-style-type: none"> <li>• 3-year implementation + 10-year operating</li> <li>• TTC option to purchase entire OSFS system and equipment for \$10</li> </ul>	<ul style="list-style-type: none"> <li>• 10 year operating after install of first device</li> <li>• automatic renewal for two 5-year year terms               <ul style="list-style-type: none"> <li>○ TTC can opt-out at end of initial term</li> </ul> </li> <li>• TTC can purchase equipment at fair market value</li> </ul>
<b>Implement TTC Business Specifications</b>	<ul style="list-style-type: none"> <li>• Implement detailed specifications as identified by TTC</li> </ul>	<ul style="list-style-type: none"> <li>• Implement reasonable business requirements</li> <li>• Discussions to be held to reach mutual agreement on business requirements</li> </ul>
<b>Service Level Agreements</b>	<ul style="list-style-type: none"> <li>• Commitment to meeting comprehensive SLA's as identified by TTC</li> <li>• Non-performance subject to financial penalties up to and including termination</li> </ul>	<ul style="list-style-type: none"> <li>• Discussions to be held to reach mutual agreement on SLA's</li> <li>• Dispute resolution process to address non-performance</li> </ul>
<b>Project Management</b>	<ul style="list-style-type: none"> <li>• TTC will sign-off at key decision points, including Project Plan, Conceptual/Preliminary/Final design, system testing</li> </ul>	<ul style="list-style-type: none"> <li>• TTC will sign-off on Project Plan and device specifications, solution options</li> <li>• TTC role in system design and testing to be confirmed</li> </ul>
<b>Risk Management</b>	<ul style="list-style-type: none"> <li>• Termination options for cause/convenience</li> <li>• Revenue protection for all TTC revenues lost due to system and/or device failures</li> </ul>	<ul style="list-style-type: none"> <li>• Termination for cause</li> <li>• Protection for TTC revenues to be confirmed</li> </ul>
<b>Governance</b>	<ul style="list-style-type: none"> <li>• No change to current TTC governance of fare collection system</li> </ul>	<ul style="list-style-type: none"> <li>• On PRESTO-related topics, TTC subject to Metrolinx/PRESTO governance structure</li> <li>• Unresolved issues to be addressed through dispute resolution</li> </ul>

APPENDIX A  
**TORONTO TRANSIT COMMISSION  
REPORT NO.**

**MEETING DATE:** June 8, 2011

**SUBJECT:** ELECTRONIC FARE COLLECTION AT THE TTC

**ACTION ITEM**

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**RECOMMENDATION**

It is recommended that the Commission:

1. Approve the adoption of the PRESTO fare collection system subject to developing acceptable operating and financial agreements, and confirming all funding necessary to proceed with the project, noting that:
  - TTC and City staff will undertake discussions with representatives of the Provincial Government, Metrolinx and the City of Toronto to develop operating and financial agreements based on the Framework for Addressing Key Principles outlined in Attachment B;
  - TTC staff will report back to the Commission for approval of the operating and financial agreements that have been developed with the Province, Metrolinx and the City of Toronto; and
  - TTC and City staff will undertake discussions with the Federal Government and take the steps necessary to confirm the funding available for implementing PRESTO under the Canadian Strategic Infrastructure Fund (CSIF), and will develop any necessary agreements.

**FUNDING**

Funding of \$140 million is included under Program 5.4 Fare System – TTC/GTA Farecard Project (as outlined on pages 1171-1175) in the TTC's 2011-2015 Capital Program as approved by City of Toronto Council on February 23, 2011. Funding of \$140 million was included under the Canada Strategic Infrastructure Fund (CSIF), to be shared by Canada, Ontario and the City of Toronto, pending execution of an amendment to the Contribution Agreement and completion of a satisfactory business case. Final confirmation has not been received for the full \$140M.

It is important to note that the \$140 million is not sufficient to fully implement the PRESTO smartcard system at the TTC. The, as yet, unfunded portion of the project is reflected "below-the-line" in the TTC's 2012-2016 Capital Program and would proceed only upon the

identification of additional funding commitments.

The net funding impact of implementing PRESTO at TTC cannot be confirmed until Federal and Provincial funding commitments are determined and agreements are in place. There may also be potential impacts on other funding program commitments, based on the decision to proceed or not proceed with PRESTO. Agreements with the Federal, Provincial and Municipal governments must be established to address full funding of this project, before a commitment can be made to proceed with full PRESTO implementation.

## **BACKGROUND**

In June 2007, the Commission approved a staff report entitled "Business Case Review for a Smartcard System at the TTC". This report outlined a concept of operations for a smartcard system that would be owned and operated by the TTC. The report concluded that smartcard systems did have a potential range of benefits for customers, staff safety and security, fare policy flexibility, and improved data for decision-making. The report also identified potential risks associated with "traditional" smartcard systems including: significant investment that is difficult to "turn back" once implemented; the traditional approach to smartcards could become outdated technically by the time the system is fully implemented; and adopting a system could tie the TTC to a proprietary technology. The report further concluded that while the TTC's current fare system has limitations, it was cost efficient to operate (lower than most transit properties at approximately 7% of total passenger revenues) and did not need to be replaced.

The 2007 report also compared the TTC's concept of operations to the Provincial smartcard initiative (PRESTO). It was concluded that there were some TTC business needs that were not fully supported by PRESTO at that time. The Commission directed TTC staff to review with the Province how TTC business needs could be accommodated by PRESTO and what the overall financial impact would be for the TTC/City if the TTC joined PRESTO.

The results of these discussions with the Province about PRESTO were presented in a report to the Commission in November 2009. This report cited the potential benefits and risks for TTC joining PRESTO. The most significant risks were related to funding, for both smartcards and other projects of significant importance to the TTC and City. The report highlighted that the costs of a smartcard system would likely be unaffordable to the TTC/City without additional Provincial support. The report further highlighted that Provincial funding for other programs and projects could be in jeopardy if the TTC did not join PRESTO.

The November 2009 report therefore recommended an approach for moving ahead with PRESTO that looked to achieve TTC objectives for an automatic fare collection system within PRESTO while simultaneously ensuring Provincial funding for other TTC programs and for key projects was not put at risk. The Commission conditionally approved adopting the PRESTO fare system subject to satisfactory resolution of a range of issues, including: governance; funding; meeting TTC customer and business needs; and ability of PRESTO to adopt advances in fare payment approaches (e.g. open standard payments). At that time,

there were seven Key Principles approved by the Commission to form the framework within which to address these issues (see Attachment A). TTC and City staff were directed to meet with representatives of the Federal and Provincial Governments, and Metrolinx to develop operating and financial agreements based on these Key Principles.

Over the next number of months, TTC and City staff did undertake discussions with the Province with the intent of developing agreements that addressed the issues identified by TTC related to PRESTO. However, during this same period, there was significant interest at the City for adopting an open standards approach to fare collection. This was based on developments at other major transit systems around the world (e.g. New York; Chicago; Philadelphia; Washington; London) in which these properties were actively considering the use of open standards to replace their existing traditional electronic fare collection systems.

The parameters for an agreement with PRESTO were still under discussion when, in May 2010, the Commission directed staff to engage a consultant to assist the TTC to develop a business case for open payments fare collection, and to work with TTC to solicit and evaluate proposals from prospective partners, as well as to implement the proposed solution for an Open Standards Fare System (OSFS). In June 2010, the Commission authorized the award of a contract to The KMA Group for consulting services in connection with the development of a public-private partnership agreement for the OSFS. The legal firm of Tory's LLP was also hired to work with staff to develop and formalize the contractual and commercial terms for the OSFS RFP.

In order to establish a list of pre-qualified bidders to participate in a procurement process for the OSFS, a Request for Pre-Qualification Statements (RFPO) was publicly advertised in August 2010. Eleven companies submitted pre-qualification statement packages of which the following three companies were recommended as being the pre-qualified proponents:

- ACS Transport Solutions, Inc. (ACS);
- Cubic Transportation Systems, Inc. (Cubic); and
- LG CNS Co., Ltd. (LG).

The three pre-qualified proponents were invited to participate in a Structured Multi-Phase Bid Process (SMPBP). The SMPBP is a process in which the technical and commercial requirements are discussed with all pre-qualified proponents to finalize requirements prior to a formal Request for Proposal (RFP). The SMPBP involved a series of technical and commercial meetings with each of the bidders to ensure a complete understanding of the scope of work and to ensure the specifications and requirements were achievable.

Following completion of the technical and commercial discussions, the OSFS RFP was issued to the three pre-qualified companies in January 2011, with a closing date in February 2011. ACS submitted a proposal that is compliant with all RFP requirements, and did not contain any exceptions or qualifications to the commercial and technical requirements detailed in the RFP. The ACS submission is valid until June 15, 2011. Prior to the RFP closing date, the other two pre-qualified bidders submitted a notification advising they had elected not to submit a bid.

In September 2010 the Commission directed that staff complete the procurement process and report back to a Commission meeting that would identify the successful proponent, and direct staff to seek agreement with the Province on an implementation plan. Consistent with this direction, TTC staff have undertaken discussions with the Province and Metrolinx to determine their interest in open payments and the OSFS. The status of these discussions is outlined in this report.

## **DISCUSSION**

### **A) Smartcards and Open Standards**

There are two basic approaches to electronic fare collection that are currently of interest within the transit industry: (i) "traditional" smartcards; and (ii) open standards. The following provides a brief overview of each of these approaches.

In a traditional smartcard system, the transit property or governing regional agency is responsible for issuing the smartcards to customers, and for the overall operation and management of all system services (e.g. customer call centre; website) and functionality (e.g. devices; revenue reconciliation; system security). The traditional smartcard system is based on proprietary software that is customized for a specific transit agency or regional transit network. The smartcard can only be used within the transit system, unless special arrangements have been made with a third party to accept the card. The software is managed through a central system which transfers data to/from all system devices (e.g. readers on vehicles; fare vending machines). Under this "decentralized" approach, the key transaction is between the card and the individual device, and both the card and device must be "smart".

There are a number of examples throughout the world of smartcard systems that have been in operation for a number of years. The Oyster system in London, England has been in operation since 2003 and has issued over 34 million cards of which approximately seven million are in regular use. The Octopus system in Hong Kong has been operational for over 14 years and has issued more than 23 million cards. The Octopus card can also be used for non-transit transactions (e.g. retail; libraries).

There are, however, examples of smartcard systems that have experienced significant problems. For example, Melbourne has been trying to implement its Myki smartcard system since 2005. The system has been plagued by technical issues that have put the project four years behind schedule, and at a current cost of \$1.35B, significantly over-budget. Other systems that have experienced delays and/or additional costs include Boston, Washington, Mumbai, and Denmark. Experience with smartcards around the world would therefore indicate that there are both benefits and risks associated with the implementation and operation of these systems.

Over the last few years, there has been an increased level of interest and activity around the world related to open standards and transit. Open standards uses existing financial

standards to enable customers to pay their transit fares using cards issued by financial institutions (e.g. credit/debit cards). The transit agency assumes a role similar to other retailers (e.g. Canadian Tire; The Bay) and accepts payments made by customers using cards issued by financial institutions. This is a centralized or "account-based" approach, and transactions are conducted through the same standardized financial networks that retailers have been using for decades. For customers that do not have a credit/debit card, they can use a general purpose reloadable card that is based on open standards and can be used for both transit and for non-transit transactions.

In an open standards approach, the overall operation and management of all system services and updates are the responsibility of third parties, and are not done by the transit agency. The central system and field devices are commercial off-the-shelf components which are certified by the financial payments industry. The use of standardized systems enables multiple vendors to be considered for the provision of devices and system services.

Major transit properties around the world are at various stages of reviewing the open standards approach as the 'next generation' for fare collection in transit. For example, Chicago and Washington have each issued an RFP for open standards as a means to ultimately replace their existing electronic fare collection systems. The Metropolitan Transit Authority in New York has issued a Concept of Operations to develop requirements for an open standards based system.

The reasons these properties cite for their interest in open payments include:

- Reduced infrastructure investment relative to traditional smartcard systems due to less customization of system hardware/software;
- Reduced on-going costs associated with the provision of card management, customer services, and in-system revenue collection and maintenance;
- Reducing reliance on proprietary systems; and
- Allowing transit agency to have greater focus on provision of transportation services.

There have been pilots conducted over the last few years to demonstrate the technical feasibility of using open standards within a transit environment (e.g. New York City Transit). However, there is currently no major transit system that has an open standards system fully in operation. While the open standards approach is based on technology and software that has been proven in the retail and financial payments industry for decades, there are still some unknowns about how open payments will function on transit.

## B) Overview of Open Standards Fare System (OSFS) RFP

The requirements outlined in the OSFS RFP were defined by the TTC and requires the vendor to design, build, install, operate, maintain and update the OSFS in return for a long-term operating contract. The key details of the business model and terms for the OSFS are outlined below.

The OSFS business model requires the vendor to fund the capital investment necessary to

implement the OSFS. More specifically, the vendor is required to cover all costs related to civil works (e.g. installing necessary power and communication in subway stations), equipment purchase and installation, system communication, and all system software and hardware.

The vendor is also responsible for all capital reinvestment costs to ensure the system is maintained in a state-of-good-repair, and is compliant with all industry and financial payment standards. The vendor is also required to undertake a full system "refresh" at least twice during the term of the contract.

For the ongoing operation of the OSFS, the vendor is responsible for all back office operations, including: system monitoring and management; customer call centre; website; and security. The OSFS RFP also stipulates that the revenue collection/servicing and maintenance of all system field equipment will be done by the vendor. TTC staff would continue to have the responsibility for the collection of cash payments from bus fareboxes, and for the maintenance of both turnstiles and bus fareboxes.

In return for the above, the vendor would receive a payment from the TTC which is calculated as a fixed percentage fee, primarily based on TTC's passenger revenues. The expectation was that the fixed fee would be less than the TTC's current fare collection costs (i.e.  $\leq 7\%$  of passenger revenues). The fixed fee is also subject to an annual minimum and maximum fixed amount.

The term of the OSFS contract is for 13 years, and allows for a three-year implementation period followed by a 10-year operating term.

The OSFS RFP includes clauses that are included to reduce the financial and operational risks to the TTC. The most important of these are the performance indicators and service level agreements that clearly define the TTC's expectations about the level of performance for the OSFS system. The vendor is subject to progressive financial penalties should these targets not be met.

The OSFS RFP also contains provisions for the sharing with TTC of revenues developed outside of transit by the vendor.

The OSFS RFP further stipulates that the system must be able to accept and process a fare payment from a PRESTO card. The RFP acknowledged that further technical information would need to be provided by PRESTO in order for this to happen. Arrangements would also be necessary between the OSFS and PRESTO in order to transparently accept PRESTO cards on the OSFS.

Under the OSFS, the vendor has overall responsibility for the implementation of the OSFS, but the TTC has sign-off on the project plan and at other key project milestones, including user acceptance and design reviews.

**C) Discussions with Province and Metrolinx**

As per the Commission direction of September 2010, TTC staff met with representatives of the Province and Metrolinx over the last few months to seek agreement on an implementation plan for the OSFS. During these discussions, the Province and Metrolinx stated that the PRESTO system is the best approach to achieving the interregional policy objective of increasing cross-boundary travel by implementing a common farecard across the GTA. From their perspective, PRESTO would contribute to an integrated regional travel experience for customers by allowing a single fare media to be used across all GTA transit properties. The Province and Metrolinx noted it was therefore critical for TTC to participate in PRESTO since TTC carries 75% to 80% of the GTA's transit ridership.

The Province and Metrolinx further stated that PRESTO was committed to meeting TTC's customer and business needs. They pointed out that a significant upgrade to the functionality and performance of the PRESTO system is already underway ("Presto the Next Generation" or "PNG") and is expected to be completed by 2014. The Province and Metrolinx have stated that this upgraded system would build upon the existing PRESTO investment to provide greater convenience to customers and greater functionality for transit operators. This increased functionality would include the ability for PRESTO to support the use of open standards for transit payments. According to the Province and Metrolinx, the timing for implementing open payments on PRESTO for "pay-as-you-go" users (i.e. a single cash fare is charged each time a customer uses their card) is expected to be 2014; the timing and cost to extend open payments to other fare products (e.g. passes; tickets; tokens) will be determined at a future date.

Based on the above, the Province and Metrolinx state they can effectively address all of the TTC's Key Principles as outlined in the November 2009 report to the Commission. Their commitments to these Key Principles are outlined in Attachment B. The Province and Metrolinx have stated that these commitments would provide the framework for developing acceptable detailed agreements with the TTC, and that the specifics would be worked out with TTC/City staff over the next few months.

**D) Overview of PRESTO**

PRESTO is a Provincially led initiative to implement a common smartcard system across the GTA. The Province has entered into agreements with the 905 transit agencies and OC Transpo that define an overall business model for how PRESTO is governed, managed, operated and funded. Under these agreements, the Province owns and is responsible for operating the Central System that provides a range of centralized services for both the transit agencies and PRESTO customers (e.g. customer account management; call centre; website; financial reconciliation). The joint agreements also provide the Province with the authority and responsibility for key aspects of the project, including procurement, overall project management, implementation, and operation of the system.

Acting in their role as "agent" for all the transit agencies, the Province has entered into a \$250M contract with Accenture for a ten-year period to develop, build, operate and

maintain the PRESTO system. The current contract expires in 2016 but has provisions that could extend this to 2025. Metrolinx currently holds the contract on behalf of all participating agencies, and will assume responsibility for the on-going operation of PRESTO by the end of 2011. It is important to note that the current contract with Accenture does **not** include the full functionality and devices for a smartcard system at the TTC. The TTC's only current commitment is to allow PRESTO interface readers to be installed on turnstiles at 12 TTC subway stations.

The PRESTO system has been in operation since October 2009 and is expected to be fully implemented at GO Transit and all other 905 transit agencies by the fall of 2011. Ottawa is expected to be operational in 2012. PRESTO reports that the smartcard project is on-time and on-budget. Since 2009, approximately 32K PRESTO cards have been issued and the PRESTO central system has processed \$12.5M in total fare payments. These totals are expected to increase significantly as the PRESTO system is expanded throughout the GTA.

#### E) Estimated Financial Impacts for TTC/City – OSFS and PRESTO

The TTC will incur some capital costs within the OSFS, despite the contractual requirement for the vendor to cover a wide range of costs as noted earlier in this report. Under the OSFS, TTC capital costs are estimated to be \$45M for the 13-year duration of the project. This estimate includes costs for TTC to upgrade the power in subway stations necessary to implement the OSFS, and internal project team and staff costs required to support the project.

From an operating cost perspective, while there are a number of business processes that would no longer be required under the OSFS, there are certain existing fare collection costs that TTC would continue to incur (e.g. maintenance of turnstiles and fareboxes; costs of collecting cash; fare enforcement). When these costs are combined with the OSFS fees paid annually to the vendor, it is estimated that TTC's overall fare collection costs would remain at the same level as current costs.

The total capital costs for implementing PRESTO at the TTC would include all civil works, equipment purchase and installation, internal costs for project team and staff, and customer information materials. The funding necessary to cover these expenses is a concern since there currently exists a \$1.5B shortfall in the TTC's Capital Budget. The only funding included in the Capital Budget for electronic fare collection is \$140M under the Canada Strategic Infrastructure Fund (CSIF), to be shared by Canada, Ontario and the City of Toronto. Final confirmation has not been received for the full \$140M.

The Province and Metrolinx have stated that they are working on the approval for a funding package that they believe would be acceptable to the City and TTC, and would address the affordability concerns outlined above. They have further indicated that Provincial approval for the proposed funding package is expected later this month, at which time the details could be reviewed with the City and TTC.

In terms of operating costs, TTC has estimated that once the PRESTO system is fully

operational and able to meet all TTC business needs, and based on PRESTO's current pricing/fee policies, the TTC costs for fare collection could be reduced by up to \$10M annually from current levels. TTC would retain responsibility for certain fare collection activities and first level maintenance under PRESTO.

#### F) Assessment of OSFS and PRESTO

Overall, the OSFS RFP provides a strong deal for the TTC and City from a fare collection perspective. The OSFS contract provides clarity and details on a number of key project elements related to the implementation and ongoing operation of the system. The OSFS RFP also includes key clauses to help reduce risks to the TTC. From a financial perspective, there is a high degree of cost certainty for both capital and operating expenses for the full duration of the contract. The OSFS can therefore meet TTC's customer and business needs within a financial framework that is affordable for the TTC and City. Further, the details contained in the OSFS RFP documents provide a degree of clarity and certainty that reduces the overall risk to the TTC to an acceptable level.

The key questions related to the OSFS include how effectively the open payments system can handle and process PRESTO card transactions to support the Provincial objective of a GTA-wide electronic fare system. Also, and as noted earlier in this report, since there is no major transit system that has an open payments system that is fully operational, there are still some unknowns about how the open payments will function on transit.

In terms of PRESTO, this system is currently being implemented and is expected to be in full operation at GO Transit and the other 905 transit agencies by the end of 2011. With the TTC joining PRESTO, there would be benefits for interregional customers who could use one payment card on multiple systems throughout the GTA. There is no doubt that without the full participation of TTC, the interregional benefits of the PRESTO system would be reduced. However, the PRESTO approach to addressing cross-boundary travel for TTC is still to be determined.

TTC has previously identified issues with the PRESTO system (see November 2009 report), but the Province and Metrolinx have provided commitments to address these issues (see Attachments B). Of particular importance are their commitments to meet TTC customer and business needs, develop a governance structure that will protect these needs, ensure open payments will be supported by PRESTO, and develop funding agreements that are acceptable to the TTC and the City.

While these commitments address TTC's concerns, the key issue is the lack of detail surrounding these commitments. At this time, it is unclear how these commitments will get reflected in the details of the agreements that the Province and Metrolinx have stated would be developed over the next few months. The lack of details creates a degree of uncertainty for the TTC and City, particularly about the overall financial impact on the TTC and City from PRESTO.

The timing of understanding these details also becomes a concern for two primary reasons.

One, the details of the Provincial and Metrolinx commitments will not be available before the validity period of the OSFS RFP expires (i.e. June 15, 2011). Second, to confirm Federal funding under CSIF for PRESTO (\$46.7M), the current timetable requires a Council approved business and funding package be submitted by mid-August of this year. This can only be achieved after the detailed agreements with the Province and Metrolinx have been finalized. TTC staff will undertake discussions with representatives of the Federal Government to determine what steps are necessary to ensure this funding is not at risk.

While the above outlines some of the key considerations in the TTC's review of PRESTO, as noted in the November 2009 Commission report, "...there is an important and broader context within which this issue needs to be considered." Over the past few years, the Province has implemented specific programs to provide a range of funding for transit and the TTC. The Province and Metrolinx have indicated that the funding for some of these programs is contingent upon TTC's participation in PRESTO. The specific programs are: Provincial gas tax (\$161M in 2010); purchase of new streetcars (\$417M); and the recent MOU which includes the Eglinton and Scarborough transit initiatives (approximately \$8B).

The funding for these programs does provide and will provide significant benefits to the TTC and its customers that have impacts that extend beyond the TTC's fare collection system alone. If the TTC does not join PRESTO, it would put the funding for these programs at risk and would jeopardize the overall benefits to the transit system that are expected from these initiatives. The decision for the TTC to join PRESTO, therefore, has potential implications that extend beyond the smartcard system itself.

From an overall transit perspective, and considering the range of potential benefits for the TTC and its customers, there is sufficient justification for the TTC agreeing to join the PRESTO system. The TTC commitment to join PRESTO will need to be conditional upon developing agreements with the Province, Metrolinx, Federal Government, and the City that addresses the issues and principles reflected in Attachment B. The resulting agreements must establish a framework within which the risks to the City, TTC and its customers can be minimized, while simultaneously providing the mechanisms to achieve the benefits that the PRESTO system has promised.

## **JUSTIFICATION**

The Province and Metrolinx have made a commitment that the PRESTO smartcard system will meet TTC's customer, business, and financial needs. The significant upgrade to the PRESTO system that is currently underway (PRESTO the Next Generation) is expected to address specific requirements identified by the TTC. This now includes the commitment that PRESTO will be able to support advances in fare payment technologies, including open payments. The details of these commitments will need to be developed to ensure that the risks to the TTC, its customers and the City are acceptable. A decision on proceeding with PRESTO must also take into consideration the range of funding for other key transit initiatives that is conditional upon TTC's participation in PRESTO.

Based on these considerations, the TTC should agree to adopt the PRESTO smartcard system, subject to developing acceptable agreements with the Province and Metrolinx that will ensure that PRESTO's benefits are achieved while minimizing the risks. A decision by the TTC to adopt the PRESTO system will also reduce the risk that funding for other key programs with significant customer and transit benefits will be jeopardized.

It is important to note that with the TTC joining PRESTO, it would represent a fundamental change in the approach to the operation, management and decision-making related to the TTC's fare collection system. TTC would become part of an existing system with established rules about the development, procurement, operation and governance of the system. PRESTO would assume responsibility for certain activities that the TTC has historically had autonomy over (e.g. procurement; certain customer service policies). Further, ongoing decisions impacting the PRESTO system would be made jointly with the system's other participants, and not by TTC alone.

June 8, 2011  
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- Attachment A: Key Principles for Developing Agreements Between TTC and PRESTO (Commission Report – November, 2009)
  - Attachment B: Framework for Addressing Key Principles (June, 2011)

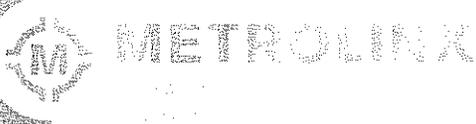
**Attachment A: ~~TO~~ JUNE 8/11 COMMISSION REPORT**  
**Key Principles for Developing Agreements Between TTC and PRESTO**  
**(Commission Report - November, 2009)**

- PRESTO will deliver a system that addresses TTC business needs (current and future) in a manner that is acceptable to TTC from a customer, operational, and financial perspective.
- TTC must be able to participate and sign-off on processes and decision points during key stages in the project, including system development and design, procurement, and implementation.
- PRESTO must ensure that the procurement for TTC required equipment and services is conducted in an open and competitive manner and allows for participation by multiple vendors.
- TTC will need a governance and decision-making structure in place that allows the TTC to continue to meet its customer, business and financial needs.
- Funding must be provided to ensure that TTC involvement in PRESTO will be affordable for the TTC and City of Toronto from both a capital and operating perspective, and taking into account the long-term operation of the system.
- TTC and the City of Toronto must be able to take advantage of other opportunities (both transit and non-transit) that smartcard systems provide.
- TTC and the City must be able to take advantage of advances in fare payment approaches (e.g. open payments; mobile phones).

**Attachment B: ~~to~~ JUNE 8/11 COMMISSION REPORT**  
**Framework for Addressing Key Principles**  
**(June, 2011)**

1. PRESTO is committed to deliver a system that addresses TTC current and future business needs in a manner that is acceptable to TTC from a customer, operational, and financial perspective.
2. TTC will participate and sign-off on processes and decision points during key stages in the project, including system development and design, procurement, and implementation.
3. PRESTO will conduct an open and competitive procurement with full TTC participation for all TTC equipment and services.
4. Recognizing TTC's customer, business and financial needs, a governance and decision-making structure will be established between TTC and Metrolinx that allows for the effective management of the Deployment Project; and the effective ongoing oversight of the PRESTO Program.
5. TTC and Metrolinx will establish mutually acceptable funding agreements for capital and operating for PRESTO implementation and operation on the TTC.
6. The City of Toronto, TTC and Metrolinx will take advantage of commercial opportunities (both transit and non-transit) that the PRESTO System provides.
7. PRESTO will take advantage of advances in fare payment approaches (e.g. open payments, mobile devices).
8. TTC and PRESTO will establish a mutually agreeable Operating Model for the ongoing PRESTO System that meets TTC customer, business and financial needs.

## APPENDIX B

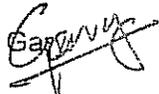


Office of the President and Chief Executive Officer  
Bruce McCuaig  
416-874-5903  
Bruce.McCuaig@metrolinx.com

November 17, 2011

Mr. Gary Webster  
Chief General Manager  
Toronto Transit Commission  
1900 Yonge Street  
Toronto, Ontario  
M4S 1Z2

**RE: PRESTO MEETING TTC BUSINESS REQUIREMENTS**

Dear 

I am writing to you to provide the commitment of Metrolinx to develop transit solutions that meet TTC e-fare Business Requirements as presented to PRESTO. It is our goal to provide TTC with a long-term e-fare solution that meets the needs that the TTC has for such a system.

We are in the process of thoroughly reviewing the TTC Business Requirements as presented to PRESTO. There are certainly some aspects of the requirements that will need further clarification and discussion between our two teams. However, PRESTO has informed me that they feel confident that they can meet all of your e-fare business requirements, as they understand them. As we have discussed, both the TTC and Metrolinx are committed to acting reasonably and in the spirit of partnership. PRESTO understands that we need to work together to ensure that we maximize the positive impact of this transformational change on TTC customers and on TTC's operations, and our intent to do so within a financial framework that does not materially increase TTC's net operating costs or net capital costs.

As set out in the draft Project Management Agreement, our approach to implementing PRESTO will provide the TTC with signoffs at multiple stages in the deployment process, such as sign off on device specifications. Following the expected positive outcome at the TTC Commission and the Metrolinx Board meetings on November 23<sup>rd</sup>, we look forward to moving quickly with the TTC so that we can start the mobilization and implementation of PRESTO in a timely fashion to reach the 2015 Pan Am/Parapan Am Games target.

The PRESTO system was designed with a focus on both accessibility and customer service. The PRESTO system will meet AODA standards.

I would like to thank you and your team for the co-operation and support to getting to this point and

.../2

look forward to commencing the required work activities and contract signing to meet the operational target date.

Sincerely,

A handwritten signature in black ink, appearing to read "Bruce McCuaig". The signature is written in a cursive style with a large initial "B" and a long, sweeping underline.

Bruce McCuaig  
President and Chief Executive Officer

- c. Steve Zucker, Managing Director and Executive Vice President, PRESTO  
Mary Martin, General Counsel and Corporate Secretary, Metrolinx