

City of Mississauga  
**Corporate Report**



<p>Date: January 25, 2021</p> <p>To: Mayor and Members of Council</p>	<p>Originator's files:</p>
<p>From: Geoff Wright, P.Eng, MBA, Commissioner of Transportation and Works</p>	<p>Meeting date: February 10, 2021</p>

## Subject

**MiWay - Update on Presto Device Refresh**

## Recommendation

That the report titled "MiWay - Update on Presto Device Refresh" dated January 25, 2021 from the Commissioner of Transportation and Works, providing an update on Presto Device Refresh along with capital costs incurred, be received for information.

## Report Highlights

- On December 6, 2017, Council approved the new Presto Operating Agreement (valid till 2027). The Director of Transit was authorized to procure directly from Metrolinx, and directly from PRESTO subcontractors, for PRESTO related services, technology, equipment, and infrastructure as defined in the Operating Agreement, subject to budget approval.
- The Presto Device Refresh Project was initiated (led by Metrolinx/PRESTO in collaboration with MiWay and other GTHA transit partners) in 2017/2018 to replace aging bus and station equipment.
- New devices have been installed on all MiWay Transit buses and in fixed locations (Bus Terminals, Community Centers) as of December 2020. These devices are built on a modern high performance, high security platform.
- This new platform provides PRESTO and MiWay with a futureproof solution that will enable new, flexible fare collection options such as time of day pricing, capping, e-Ticketing and open payments.
- The necessary capital budget required to support this critical business system initiative has been requested through the City's business planning process.

## Background

The existing Presto fare collection equipment was developed prior to 2010 and deployed in late 2010 on MiWay buses. In recent years, more elements of the system have become increasingly expensive to maintain. Many electronic components used in the original equipment have reached or are beyond their expected life and are no longer manufactured. This impacts service reliability and limits fleet expansion due to equipment shortages. Security standards for electronic transactions and financial systems have risen in recent years while key elements of the existing Thales solution have proven difficult to comply with the new security standards.

All of these technology factors resulted in a degree of urgency to replace the existing system ahead of the October 2020 expiration of the system maintenance contract.

On December 6th, 2017 Council approved the new Presto Operating Agreement (valid till 2027) and the Director of Transit was authorized to procure directly from Metrolinx, and directly from PRESTO subcontractors, for PRESTO related services, technology, equipment, and infrastructure as defined in the Operating Agreement and that the Purchasing Bylaw 374-06, as amended shall not apply to these purchases, if there is sufficient budget as allocated by Council for the purchases.

The Device Refresh Project was initiated (led by Metrolinx/PRESTO in collaboration with MiWay and other GTHA transit partners) in late 2017/early 2018 to replace aging bus and station equipment, improve device security and performance and introduce a limited set of enhancements to improve productivity for the overall solution. Following the development of high-level business requirements in collaboration with the 905 Transit Agencies and GO Transit, a set of detailed tender documents were developed for a public Request for Proposals.

Accenture was contracted (by Metrolinx/PRESTO) to develop a compliant solution building on existing system knowledge and utilizing commercial off the shelf technology wherever possible. The new solution builds upon the PRESTO Device Software (PDS) that power virtually all new generation devices. Metrolinx, Accenture and other suppliers and sub-contractors are parties to a number of contracts established to design, build, test and deploy the Device Refresh solution to replace all Thales equipment with a new generation of devices, which offer new capabilities.

Following the development of the new solution, Accenture was contracted (by Metrolinx/PRESTO) to provide deployment services to meet the needs of PRESTO and MiWay.

## Comments

The Device Refresh Project was initiated to replace aging legacy bus and station equipment, improve device security and performance and introduce a limited set of enhancements to improve productivity for the overall solution.

It should be noted that the project and deployment schedule were impacted due to severe logistical impacts resulting from the COVID-19 shutdown. As a result, the targeted timeline for completion was extended from early spring, through to the end of 2020.

Throughout 2020, MiWay staff implemented the following device installations with supporting end-user training, process documentation, and customer communication:

- 505 buses equipped with DCU (Driver Control Unit) and BFTP (Bus Fare Transaction Processors/customer facing).
- City Centre Transit Terminal equipped with three SPOS (Station Point of Sale) devices and two AVM (Add Value Machine/Customer Self Serve) devices.
- 11 Community Centres equipped with TPT (Third Party Terminal) point of sale devices and two AVM at South Common and Malton Community Centres.

In addition, the Cross Boundary solution was implemented with TTC Route 52, whereby the technology to support seamless cross boundary travel over the Mississauga/Toronto boundary was delivered allowing customers to pay both fares with one tap of their PRESTO card.

Delivering on Transit Enforcement requirements, MiWay staff is progressing on implementing a HCR (Handheld Card Reader) fare inspection device that will provide Transit Enforcement Officers the ability to validate customer fare cards on street. Additionally, this device will be utilized to support LRT fare collection when the time comes.

The delivery of enhanced technology supporting Device Refresh intersects a number of strategic initiatives being undertaken by Metrolinx through 2021, including Open Payment and e-ticketing capabilities. During implementation, this work stream will have MiWay staff continuing to focus on device reliability and data integrity to validate system performance, and further developing lean process as they apply to the PRESTO system.

MACD (Move, Add, Change, and Delete) work process applies to costs for provisioning and installing new PRESTO devices beyond the Device Refresh phase. These costs apply to both replacement and growth buses, and includes device, materials (kitting), installation (commissioning) and decommissioning. Based on the current bus replacement schedule and the MACD unit cost of \$6,787 per bus, it is estimated MiWay will require \$2,070,035 over the

next five years to install (move existing device from old bus to new bus) Presto devices in new buses.

COVID-19 brought about uncertainty around how MiWay would resume fare collection after the initial period of free transit. In light of this uncertainty, rear door boarding was considered and associated information was gathered. Supporting the preparations for Mississauga's Hurontario LRT, rear door boarding fare payment solutions will be planned for implementation on a portion of the MiWay fleet. This implementation would see a second BFTP (Bus Fare Transaction Processor) installed just inside the rear doors of the bus to allow customers to tap their PRESTO card and pay their fare at both front and rear doors.

## Financial Impact

The City placed an "Investing in Canada Infrastructure Program (ICIP)" project request in fall of 2019 to fund the Presto Device Refresh in 2020. The Federal Government rejected this request in 2020 and the required funds were requested in the 2021 capital budget request.

The funding for the Presto Device Refresh will be required when the project is completed and funds are included in PN 21204 - Transit Presto Equipment Replacement having a budget of \$10,000,000.

The project is pending approval through the City's 2021 business planning and budget cycle.

### 1. Cost incurred to date (Device Refresh) :

<b>Project Item</b>	<b>Cost</b>
Bus Solution - DCU (Driver Controller Unit) - BFTP (Bus Fare Transaction Processor)	\$7,038,999
Bus Solution - Training Cart	\$ 19,305
Station Point of Sale (SPOS)	\$ 31,057
Third Party Terminals (TPT) for Community Centers	\$ 54,340
SFTP Device(Includes SFTP,CQD and Bus Xftp)	\$ 32,204
Inspection Device for Transit Enforcement	\$ 22,260
Software Development Cost Share	\$ 485,344
<b>Total</b>	<b>\$ 7,683,509</b>

## 2. Future costs

- a. MACD (Move, Add, Change, and Delete) costs: Based on the current bus replacement schedule and the MACD unit cost of \$6,787 per bus, it is estimated MiWay will require \$2,070,035 over the next five years to install Presto devices on new buses. Amount is to pay the labour to move existing devices from old buses to new.

Year	# of Buses (to be replaced)	Cost
2021	5	\$ 33,935
2022	98	\$ 665,126
2023	75	\$ 509,025
2024	82	\$ 556,534
2025	45	\$ 305,415
<b>Total</b>		<b>\$ 2,070,035</b>

- b. Rear door fare collection devices: \$246,456

**Total Financial Impact**

1. Cost incurred to date (Device Refresh)	\$7,683,509
2. Future cost (MACD Process)	\$2,070,035
3. Rear door fare collection	\$246,456
Total	\$10,000,000

**Conclusion**

Over 85% of MiWay fare revenues are now collected via PRESTO. The City has the largest municipal PRESTO card-reloading network with all Community Centres offering card reload. On the most recent customer survey, customers expressed a high level of satisfaction with their experience with PRESTO on MiWay buses

The Device Refresh Project as a whole provides a reliable/secure payment solution to MiWay customers along with an opportunity for Metrolinx, MiWay and other transit agencies to collaborate and incorporate the features that will help implement a future fare integration solution across the GTHA.

The new devices support delivery of enhanced features including open payment (use of a credit/debit card to pay for transit), and e-ticketing (using your phone to pay for transit). These new features are on track to be rolled out in 2021.

**Attachments**

Appendix 1: Device Refresh Cost Breakdown



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Geoff Wright, P.Eng, MBA, Commissioner of Transportation and Works

Prepared by: Prabhjot Dhani, Manager Transit Business Systems

Appendix 1: Device Refresh Cost Breakdown

Project Item Mississauga	Qty	Initial Cost	Sub Total
<b>Bus Solution</b>			
DCU & BFTP	531	\$ 7,236	\$ 3,842,073
Labour - Deployment related (Direct and Indirect)	505	\$ 3,712	\$ 1,874,686
Installation kitting	505	\$ 2,618	\$ 1,322,240
<b>Bus Solution Sub-Total (per Bus)</b>		\$ 13,566	\$ 7,038,999
<b>Bus Training Cart</b>			
DCU, BFTP, and Cart	2	\$ 9,653	\$ 19,305
<b>Bus Solution Sub-Total (per Bus)</b>		\$ 9,653	\$ 19,305
<b>Station Point of Sale (SPOS)</b>			
SPOS core components	5	\$ 4,047	\$ 20,233
Labour - Deployment related (Direct and Indirect)	4	\$ 2,706	\$ 10,824
SPOS cable kit	4	\$ -	\$ -
<b>SPOS Sub-Total</b>		\$ 6,753	\$ 31,057
<b>Optional SPOS/TPT Items</b>			
POSX ION Cash Drawer 16" Black	0	\$ 102	\$ -
POSX ION Cash Drawer Spare Till 16" Black	0	\$ 25	\$ -
POSX ION Cash Drawer Locking Till Cover 16"	0	\$ 25	\$ -
POSX ION Cash Drawer Mount 16"	0	\$ 21	\$ -
Cash Drawer Interface Cable (USB)	0	\$ 38	\$ -
ELO Tabletop Stand for 15" I-Series	0	\$ 59	\$ -
Elo E353950 Wallaby POS Stand for I-Series 10" and 15" with	0	\$ 259	\$ -
Ergotron LX Desk Monitor Arm	0	\$ 175	\$ -
<b>Optional SPOS Items/TPT Total</b>		\$ 702	\$ -
<b>Third Party Terminal (TPT)</b>			
TPT core components	13	\$ 2,383	\$ 30,976
Labour - Deployment related (Direct and Indirect)	12	\$ 1,947	\$ 23,364
TPT cable kit	12	\$ -	\$ -
<b>TPT Sub-Total</b>		\$ 4,330	\$ 54,340
<b>SFTP Device (YRT BRT-FTP)</b>			
BRT-FTP	0	\$ 9,083	\$ -
Labour - Deployment related (Direct and Indirect)	0	\$ 2,551	\$ -
Installation kitting	0	N/A	N/A
<b>SFTP YRT BRT-FTP Sub Total</b>		\$ 11,634	\$ -
<b>SFTP Device (SFTP &amp; CQD)</b>			
SFTP/CQD	3	\$ 9,083	\$ 27,248
Labour - Deployment related (Direct and Indirect)	2	\$ 2,478	\$ 4,956
Installation kitting	2	N/A	N/A
<b>SFTP &amp; CQD Sub Total</b>		\$ 11,561	\$ 32,204
<b>Inspection Device</b>			
Panasonic FZ-N1 Mk2 w/ 6400mAH Battery	11	\$ 1,724	\$ 18,960
Panasonic FZ-N1 Mk2 w/ Regular Battery	0	\$ 1,652	\$ -
Labour - Deployment related (Direct and Indirect) (EST.)		\$ 300	\$ 3,300
<b>Inspection Device Sub Total</b>		\$ 3,675	\$ 22,260
<b>Optional Inspection Items</b>			
Holster for FZ-N1/FZ-F1	0	\$ 70	\$ -
5-Bay Device Charger (with AC Adapter CFAA6373AM)	0	\$ 619	\$ -
Panasonic Single Bay Charging Cradle /Charging Cup (No AC Adapter - requires CFAA6373AM)	0	\$ 523	\$ -
Smaller Battery, Does not include AC adapter	0	\$ 99	\$ -
Large Battery, Does not include AC adapter	0	\$ 178	\$ -
<b>Optional Inspection Items Total</b>		\$ 1,488	\$ -
<b>TA Share of Software development cost</b>			
TA proportion based on fleet size		\$	\$ 485,344
<b>Total</b>	<b>565</b>	<b>\$</b>	<b>7,683,509</b>