

PA8.11 Attachment 2

ATTACHMENT 2

UPGRADE OF ZMS INFRASTRUCTURE:

(BOARD MEMORANDUM DATED JULY 23, 2015 TO TORONTO PARKING AUTHORITY BOARD AND CONFIDENTIAL ATTACHMENT AUTHORIZED FOR PUBLIC RELEASE BY THE ACTING PRESIDENT, TORONTO PARKING AUTHORITY ON JULY 15, 2015)



BOARD MEMORANDUM

3.2

TO: Lorne Persiko

FILE NO:

FROM: Ian Maher

DATE: July 23, 2015

SUBJECT: UPGRADE OF ZMS INFRASTRUCTURE

MEETING DATE: July 30, 2015

RECOMMENDATION:

It is recommended that the Board of Directors of the Toronto parking authority authorize the expenditure of funds in an amount not to exceed \$500,000 to continue the upgrade of the existing ZMS fee computers and Orion Paystations to comply with industry standard requirements including accepting payment by way of Interac.

DATE	MINUTE
July 30, 2015	15-113
Approved.	

Comments:

In July of 2014, the Board of Directors of the Toronto Parking Authority adopted the 'ZMS Upgrade Plan : 2014-2015' and authorized funding to complete the first phase of the plan which consisted of upgrading the existing contactless readers to current generation readers. Funding authorization is required to undertake phase 2 of the program. This phase consists of the three items described below:

1. Upgrade of the 30 fee computers.
2. Upgrade the eighteen facilities operating by way of the older model Orion Series 2 and 3 paystations by upgrading to current generation paystations and/or adding debit/credit kiosks.
3. Upgrade the eight facilities operated by way of the newer generation Orion XR series paystations by way of adding a conversion kit.

The upgrade requirements are discussed more fully in the confidential attachment to this memorandum entitled 'ZMS Upgrade Plan : 2014-2015 (update July 2015)'. The upgrade will ensure that the TPA infrastructure is at the current industry standard and in addition enable the TPA to offer interact payments in its ZMS facilities.

Funds in the amount of \$500,000 were identified and included in the approved 2015 IT budget for the implementation of the plan.

Ian Maher

(Confidential Attachment)



Toronto Parking Authority

ZMS Upgrade Plan 2014 – 2015

Prepared by: TPA Strategic Planning and Information Technology Services
May 2014

ZMS Upgrade Plan – 2014 and 2015

Purpose

This document sets out the plan for upgrading the revenue control systems which operate the ZEAG ZMS based facilities which are to be undertaken in 2014 and 2015. The 2014 program is funded from the approved 2014 budget while the 2015 program will form part of the 2015 budget request.

Objectives

There are a number of objectives which the proposed program will achieve:

1. Implement payment by Interac Debit
2. Implement EMV (chip and PIN) and contactless chip
3. Remove the fee computers from PCI Scope
4. Reduce reliance on magnetic stripe vs. chip transactions
5. Prepare the ZMS infrastructure for inclusion into the Mobile Payments Program

Program Elements

The program consists of the implementation of the following elements:

1. Conversion of the Kiosk 1 vivo tech readers to the Kiosk 2 model to convert the existing contactless payment process based on magnetic stripe replication to reading the chip
2. Add PIN pads to Orion XR series pay stations including main board upgrade
3. Investigate retrofit possibilities for Orion series lobby pay stations including main board upgrade
4. Purchase and install credit debit kiosks in select Orion lobbies
5. Install PIN pads on fee computers
6. Install PIN Pads in exit pay stations and exit stations (not being considered as part of the first phase of changes at this time)

Conversion of Kiosk 1 to Kiosk 2

The currently installed Kiosk 1 Vivotech contactless readers at the entry and exit lanes read the chip but simulate a magnetic stripe 'swipe' read. VISA has mandated that these readers must be replaced by the end of 2014 with contactless readers which utilize the EMV protocol. This is a much more secure transmission technology. The Kiosk 2 contactless readers are currently being certified for use by Tender Retail and Moneris. Once the certification process is completed the readers will be purchased and installed by TPA personnel. The purchase cost is approximately \$103,500 for all lanes, however, depending on program element 5 above, this cost may be reduced somewhat. The status of Board approval for this initiative is not known at this time.

Add PIN pads to Orion XR series lobby pay stations

The equipment inventory chart on page 5 of this document indicates that we presently have 16 XR series lobby pay stations (this is the current generation of ZEAG equipment). These pay stations were designed to have an optional PIN pad reader installed by way of a knock-out front panel. Conversion costs approximately \$9470 per unit which included a main board upgrade. The conversion will enable EMV and debit/Interac transactions. The conversion should be done in conjunction with the AODA review of compliance with respect to the heights of the equipment.

Investigate retrofit of Orion

The facilities that have older generation Orion lobby pay stations are also indicated in the attached table. The possibility of retrofitting these pay stations is under investigation by ZEAG. As they do not have a knockout panel, and the internal components are arranged differently than the XR model pay stations it will be necessary to replace the doors as part of the retrofit. It is estimated that it will cost approximately \$19,650 per pay station to undertake the retrofit, which includes a system board upgrade.

Update July 2015: It is not clear if Older Orion 2 and 3 paystations can be retrofitted and they are close to the end of their lifecycle. Revised Plan as follows. Replace existing series 2 or 3 paystation with current model – one at each location - and supplement with the credit and debit kiosks described below.

Credit and Debit Kiosks

Assuming that the Orion lobby pay stations cannot be retrofitted or that the retrofit is undesirable for cost or other reasons, credit/debit kiosks can be acquired and installed in the Orion lobbies. These kiosks are available from ZEAG at a cost of approximately \$20,000 per and provide for EMV and debit/Interac capability. There are currently 18 Orion lobbies which would need a kiosk to enable EMV and debit/Interac across the system.

PIN pads on Fee Computers

At the present time the fee computers have integrated magnetic stripe via ZEAG's UCD (Universal Card Device) which allows the enabling of credit card transactions. The attendant is required to obtain the card from the customer and insert it manually. It is proposed to install EMV compliant PIN pad devices which could be handed to the customer for processing an EMV (Chip and Pin) transaction. Magstrip and contactless capabilities also are integrated in the pin pad and would be available. This would remove the fee computers from PCI scope because the transaction would be facilitated by Moneris among other benefits. The units cost approximately \$500 per and we presently have approximately 36 fee computers which would need to be re-equipped. The potential processing issues are discussed below.

PIN pads on exit stations

The installation of PIN pads on the exit pay stations and exit stations (for cc in/cc out transactions) will complete the transition to EMV as the standard at all payment locations. The possibility and cost of this transition and the potential operational disruption is still being investigated.

Mobile Payments at ZEAG

Our RFP for mobile payments included a requirement to enable the use of the mobile wallet in the ZEAG facilities. It is expected that these transactions will function similar to the current Interac system either through the use of Interac like cards which only work in ZMS facilities, or by creating a barcode/QR code version of the ticket which can be read by the mobile customer's phone, or through Licence Plate Recognition (LPR) systems. Depending on the technology selected this may be available by late 2014.

Process Considerations

There is a possibility that having customers enter PINs in the exit lanes will lengthen the exiting process. Statistics on the various payment channels was prepared for a typical weekday at Carpark 26. About two-thirds of the current exit transactions are by way of credit cards and one-third cash. About 40% of customers process their transactions at the fee computers. If we assume that, following the changeover, we have 40% credit, 40% debit and 20% cash this will result in an increase of processing at the fee computers to about 45% from the current 40%. There is some risk that this will cause delays in exiting.

	Exit Lane	Cashier		Total
		Credit	Cash	
Lane 1	149	86	366	601
Lane 2	352	-	-	352
Lane 3	341	85	135	561
Lobby Pay Station	-	100	106	206
Total	842	271	607	1720
%	49	16	35	100

Schedule

The schedule for 2014 for the components is as follows:

1. Installation of PIN pad on XR station in Carpark 26 lobby to test the EMV credit and debit upgrade functionality and processing
2. Installation of an APC Cashless Payment Station (credit/debit kiosk) in the Carpark 26 Queen Street lobby to test kiosk functionality and processing
3. Conversion of central cashiering Fee Computer at Carpark 43 customer service area to PIN Pad
4. Installation of a (3) APC Cashless Payment Station (credit/debit kiosk) at Carpark 43 Market, Church and Young Street lobbies. This will help reduce line ups by patrons during events at Air Canada Center and Sony Center

5. Installation of a (2) APC Cashless Payment Station (credit/debit kiosk) at Carpark 1
6. Installation of a (2) APC Cashless Payment Station (credit/debit kiosk) at Carpark 34
7. Installation of exit PIN Pad terminals on Carpark 26 fee computers
8. Installation of Kiosk 2 readers at all locations by the end of 2014

Based on the above eight steps, the program for the remainder of 2014 will be developed with the objective of having the program in place across the ZEAG network as soon as is practical.

P&D Conversion to ZMS Operation

In addition to the updating of the existing ZMS network the following P&D lots are planned for conversion to ZMS operation in 2015:

- CP 51
- CP 47
- CP 181
- CP 224

Cost estimates to be developed for the 2015 capital budget.

Chronic Communications Issues at Certain P&D Locations

Certain P&D lots continue to exhibit chronic communications issues, resulting in poor customer service and credit card processing issues. A solution involving changing over the P&D machines to Ethernet will be investigated and cost estimate developed. Subject to resolving the Fast Track and TPA card issues on the Ethernet network, these upgrades are targeted for 2014 with funds currently budgeted. The locations are (number of machines at each in brackets):

CP 13 (2)	CP 157 (1)
CP 51 (3)	CP 178 (3)
CP 96 (1)	CP 404 (1)
CP 107 (1)	

ZEAG Equipment Upgrade Schedule 2014 & 2015

Orion XR Series

Carpark	Entry Stations	Exit Stations	POF Paystations	Fee Computers	Exit Paystations	Equipment Total	Cost Per (\$)	APC Additions 2014	Cost Per (\$)	Contactless EMV UPGRADE 2014	Cost Estimate Per (\$)	FC EMV UPGRADE 2014	Cost Per (\$)	Paystation EMV UPGRADE 2015
15	5	5	5	5	0	20			\$525.00	\$7,875.00	\$500.00	\$2,500.00	\$9,470.00	\$47,350.00
26	0	0	1	0	0	1	\$21,571.00	\$21,571.00	\$525.00	\$525.00		\$0.00	\$9,470.00	\$9,470.00
36	0	0	1	0	2	3			\$525.00	\$1,575.00		\$0.00	\$9,470.00	\$9,470.00
68	2	2	2	2	0	8			\$525.00	\$3,150.00	\$500.00	\$1,000.00	\$9,470.00	\$18,940.00
71	1	0	0	1	1	3			\$525.00	\$1,050.00	\$500.00	\$500.00		\$0.00
125	2	2	2	0	0	6			\$525.00	\$3,150.00		\$0.00	\$9,470.00	\$18,940.00
150	2	2	2	2	0	8			\$525.00	\$3,150.00	\$500.00	\$1,000.00	\$9,470.00	\$18,940.00
215	2	2	3	1	0	8			\$525.00	\$3,675.00	\$500.00	\$500.00	\$9,470.00	\$28,410.00
Total	14	13	16	11	3			\$21,571.00		\$24,150.00		\$5,500.00		\$151,520.00

Orion Series 4

171	1	1	1	0	0	3				\$1,575.00		\$0.00		\$7,991.00
Total										\$1,575.00		\$0.00		\$7,991.00

Orion Series 2&3 Upgrade

Carpark	Entry Stations	Exit Stations	POF Paystations	Fee Computers	Exit Paystations	Equipment Total	Cost Per (\$)	APC Additions 2014	Cost Per (\$)	Contactless EMV UPGRADE 2014	Cost Estimate Per (\$)	FC EMV UPGRADE 2014	Cost Per (\$)	Paystation EMV UPGRADE 2015
1	2	2	2	1	0	7	\$21,571.00	\$43,142.00	\$525.00	\$3,150.00	\$500.00	\$500.00	\$19,650.00	\$39,300.00
5	1	0	0	1	1	3			\$525.00	\$1,050.00	\$500.00	\$500.00		
11	2	2	2	2	0	8	\$21,571.00	\$43,142.00	\$525.00	\$3,150.00	\$500.00	\$1,000.00	\$19,650.00	\$39,300.00
12	1	0	0	1	1	3			\$525.00	\$1,050.00	\$500.00	\$500.00		
13	2	2	2	1	0	7			\$525.00	\$3,150.00	\$500.00	\$500.00	\$19,650.00	\$42,260.00
26	2	3	0	3	0	8			\$525.00	\$2,625.00	\$500.00	\$1,500.00		
29	2	2	3	1	0	8			\$525.00	\$3,675.00	\$500.00	\$500.00	\$19,650.00	\$58,950.00
32	1	1	0	1	1	4			\$525.00	\$1,575.00	\$500.00	\$500.00		
34	2	2	3	1	0	8			\$525.00	\$3,675.00	\$500.00	\$500.00	\$19,650.00	\$63,390.00
36	4	5	0	5	0	14			\$525.00	\$4,725.00	\$500.00	\$2,500.00		
39	1	1	0	1	1	4			\$525.00	\$1,575.00	\$500.00	\$500.00		
42	1	1	1	1	0	4			\$525.00	\$1,575.00	\$500.00	\$500.00	\$19,650.00	\$19,650.00
43	4	4	4	1	0	13	\$21,571.00	\$86,284.00	\$525.00	\$6,300.00	\$500.00	\$500.00	\$19,650.00	\$84,520.00
52	1	1	0	1	0	3			\$525.00	\$1,050.00	\$500.00	\$500.00		
58	2	2	0	2	0	6			\$525.00	\$2,100.00	\$500.00	\$1,000.00		
161	1	1	1	1	0	4			\$525.00	\$1,575.00	\$500.00	\$500.00		
404	2	2	0	1	1	6			\$525.00	\$2,625.00	\$500.00	\$500.00		
410	2	2	2	0	0	6			\$525.00	\$3,150.00		\$0.00	\$19,650.00	\$42,260.00
Total	33	33	20	25	5			\$172,568.00		\$47,775.00		\$12,500.00		\$389,630.00
Moneris / Tender Retail Certification										\$15,000.00		TBD		\$0.00

Orion Series 2&3 Replacement

Carpark	Entry Stations	Exit Stations	POF Paystations	Fee Computers	Exit Paystations	Equipment Total	Cost Per (\$)	APC Additions 2014	Cost Per (\$)	Contactless EMV UPGRADE 2014	Cost Estimate Per (\$)	FC EMV UPGRADE 2014	Cost Per (\$)	Paystation EMV UPGRADE 2015
1	2	2	2	1	0	7	\$40,000.00	\$23,000.00	\$525.00	\$3,150.00	\$500.00	\$500.00	\$19,650.00	\$39,300.00
5	1	0	0	1	1	3			\$525.00	\$1,050.00	\$500.00	\$500.00		
11	2	2	2	2	0	8	\$40,000.00	\$23,000.00	\$525.00	\$3,150.00	\$500.00	\$1,000.00	\$19,650.00	\$39,300.00
12	1	0	0	1	1	3			\$525.00	\$1,050.00	\$500.00	\$500.00		
13	2	2	2	1	0	7	\$80,000.00		\$525.00	\$3,150.00	\$500.00	\$500.00	\$19,650.00	\$42,260.00
26	2	3	0	3	0	8			\$525.00	\$2,625.00	\$500.00	\$1,500.00		
29	2	2	3	1	0	8	\$40,000.00	\$46,000.00	\$525.00	\$3,675.00	\$500.00	\$500.00	\$19,650.00	\$58,950.00
32	1	1	0	1	1	4			\$525.00	\$1,575.00	\$500.00	\$500.00		
34	2	2	3	1	0	8	\$40,000.00	\$46,000.00	\$525.00	\$3,675.00	\$500.00	\$500.00	\$19,650.00	\$63,390.00
36	4	5	0	5	0	14			\$525.00	\$4,725.00	\$500.00	\$2,500.00		
39	1	1	0	1	1	4			\$525.00	\$1,575.00	\$500.00	\$500.00		
42	1	1	1	1	0	4			\$525.00	\$1,575.00	\$500.00	\$500.00	\$19,650.00	\$19,650.00
43	4	4	4	1	0	13	\$80,000.00	\$46,000.00	\$525.00	\$6,300.00	\$500.00	\$500.00	\$19,650.00	\$84,520.00
52	1	1	0	1	0	3			\$525.00	\$1,050.00	\$500.00	\$500.00		
58	2	2	0	2	0	6			\$525.00	\$2,100.00	\$500.00	\$1,000.00		
161	1	1	1	1	0	4			\$525.00	\$1,575.00	\$500.00	\$500.00		
404	2	2	0	1	1	6			\$525.00	\$2,625.00	\$500.00	\$500.00		
410	2	2	2	0	0	6	\$40,000.00	\$23,000.00	\$525.00	\$3,150.00		\$0.00	\$19,650.00	\$42,260.00
Total	33	33	20	25	5			\$207,000.00		\$47,775.00		\$12,500.00		\$389,630.00
Moneris / Tender Retail Certification										\$15,000.00		TBD		\$0.00

TOTALS								\$194,139.00		\$214,050.00		\$18,000.00		\$1,328,401.00
								2014 Expense		\$426,189.00				
								2015 Budget		\$1,328,401.00				