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YORK REGION TRANSIT
AUTOMATED FARE COLLECTION SOFTWARE UPGRADE
AND MAINTENANCE AND SUPPORT AGREEMENT

The Transit Committee recommends that Council adopt the recommendations contained in the following report dated December 17, 2008, from the Commissioner of Transportation Services.

1. RECOMMENDATIONS

It is recommended that:

1. Regional Council authorize extension of the current Viva automated fare collection central system and ticket vending machine software maintenance and support agreement with Cubic Transportation Systems Inc. at a total cost of \$282,010, excluding taxes.
2. The term of the software support and maintenance agreement be for a period of three years, commencing on February 1, 2009.
3. Regional Council authorize entering into a contract with Cubic Transportation Systems Inc. for the upgrade of the Viva Automated Fare Collection central system and ticket vending machine software and hardware in the amount of \$503,715, excluding taxes, pursuant to the sole source provisions of the purchasing by-law.
4. The Regional Chair and Regional Clerk be authorized to execute any necessary amendments to the existing Cubic Transportation Systems Inc. agreement, subject to the approval of Legal Services as to form and content.

2. PURPOSE

This report seeks Regional Council authorization for the extension of the current Viva Automated Fare Collection central system and ticket vending machine software maintenance and support agreement with Cubic Transportation Systems Inc., the original equipment manufacturer. The term of the agreement will be for a period of three years, commencing on February 1, 2009. Software maintenance and support is required to continue receiving bug fixes, minor upgrades to existing software, problem resolution, and 24/7 support whenever needed.

This report also seeks Regional Council authorization to enter into a contract with Cubic Transportation Systems Inc., for the upgrade of the Viva Automated Fare Collection central system and ticket vending machine software to allow use of a digital subscriber

line (DSL) for the processing of credit and debit cards from the ticket vending machines. The software upgrade is required as Bell and Moneris, the current service provider for the processing of credit and debit cards, have jointly decided to discontinue the existing data communications link between ticket vending machines and their system effective December 31, 2009.

3. BACKGROUND

The Viva off-board automated fare collection system is based on Proof-of-Payment (POP). The system requires customers to retain proof that the correct fare has been properly paid. Customers can accomplish this by either purchasing a single journey validated ticket at a ticket vending machine (oneRide) installed at each Viva stop, or by validating a ticket at a ticket validator (vivaNow) that was previously purchased at a terminal ticket vending machine (multiRide) or ticket agent before boarding.

Cubic Transportation Systems Inc. is the original supplier of the Viva fare collection system

The Viva off-board fare collection system was provided by Cubic Transportation Systems Inc. as part of the original supply contract with Kiewit EllisDon, the Viva design-build contractor. These fare collection devices are complex electro-mechanical machines that require specialized regular preventive maintenance and periodic emergency maintenance. York Region Transit's ability to collect fares from Viva passengers depends on this equipment working properly. The maintenance services are provided by Cubic Transportation Systems Inc. and by York Region Transit (YRT) staff when available.

The existing software maintenance and support agreement ends on January 31, 2009

As part of the original supply contract with Kiewit EllisDon, the Viva design-build contractor, YRT has an existing software maintenance and support which ends on January 31, 2009. Cubic Transportation Systems Inc. has been providing satisfactory software maintenance and support for the last three years. To continue getting support from Cubic Transportation Systems Inc., it is necessary that the existing software maintenance and support agreement be extended.

Reasons for required support from Cubic Transportation Systems Inc.

The Viva Automated Fare Collection central system and ticket vending machine software are proprietary in nature and YRT requires continuous support from Cubic Transportation Systems Inc. to maintain its daily operations. YRT's ability to provide excellent customer service depends on the central and ticket vending machine software working properly.

Credit and debit card transactions are processed through a third party (Moneris) using a secure data communications link provided by Bell

Currently, the terminal ticket vending machines (multiRide) installed at terminals use a secure data communications link (Datapac 3201 Line) provided by Bell for processing credit and debit card transactions. Bell and Moneris have jointly decided to discontinue the existing data communications link between terminal ticket vending machines and their system effective December 31, 2009. The terminal ticket vending machines (multiRide) will be required to use a digital subscriber line (DSL) to continue processing credit and debit card transactions. This requires both software and hardware modifications to the existing central system, ticket vending machines and data communications network.

Credit and debit card processing agencies are moving towards new and secure standards to minimize fraudulent transactions

The Canadian banks, financial institutions and other credit/debit card processing agencies are moving towards EMV (Europay, MasterCard and VISA) compliant standards, also known as "Chip cards" standards, which ensures a higher security to the credit/debit card transactions. Non-compliance with these standards transfers the risk of fraudulent transactions to the processing agencies, in this case, YRT. The Canadian banks, financial institutions and other credit/debit card processing agencies may also discontinue processing credit/debit card transactions from terminal ticket vending machines and stop ticket vending machines if the machines are not upgraded to be compliant with EMV standards. The target to ensure compliance is spread over a few years, with Visa requiring compliance by the end of 2010.

4. ANALYSIS AND OPTIONS

SOFTWARE MAINTENANCE AND SUPPORT

Cubic Transportation Systems Inc. provides the following services as part of the software maintenance and support agreement

- Cubic ensures that software operates in conformity with the descriptions and specifications.
- If any error is detected by YRT, Cubic provides telephone support, in the form of technical assistance and advice, on the use and configuration of the software.
- Cubic corrects software deficiencies within a timeframe as agreed with YRT based on the severity of the deficiency.
- Cubic provides YRT with bug fixes, minor upgrades of the software at no additional charge.
- Cubic provides 24/7 support.

The Region will pay for software maintenance and support

Table 1 provides a summary of the central system and ticket vending machine software maintenance and support costs to be paid to Cubic Transportation Systems Inc. over the next three years.

Table 1
Software Maintenance and Support Cost

Description	Year 2008 (Existing)	Year 2009	Year 2010	Year 2011	Total Cost 2009 - 2011
Central system and ticket vending machine software	\$88,582	\$91,239	\$93,976	\$96,795	\$282,010

The software maintenance and support cost in 2009 is approximately 3% higher than the cost in 2008 and increases by the same percentage in 2010 and 2011.

Table 2 provides a summary of Cubic Transportation Systems Inc. hourly rate for the different services to be provided outside the software maintenance and support agreement over the next three years.

Table 2
Hourly Rates for Different Services Provided Outside
Software Maintenance and Support Agreement

Category	Year 2008 (Existing)	Year 2009	Year 2010	Year 2011
Software - Central Computer & Device Engineer	\$220.1	\$229.5	\$236.4	\$243.5
Hardware - Device Engineer	-	\$140.3	\$144.5	\$148.8
Quality, Test, Training Engineer	\$178.8	\$140.3	\$144.5	\$148.8
Contracts Manager	\$234.6	\$131.6	\$135.6	\$139.7
Program Management	\$313.2	\$200.8	\$206.8	\$213.0

The hourly rate for "Software - Central Computer & Device Engineer" in 2009 is approximately 4.3% higher than in 2008 and increases by 3% in 2010 and 2011. For other categories, it is substantially lower than the rate in 2008. The category "Hardware - Device Engineer" did not exist in 2008 and the quoted rate is considered reasonable.

SOFTWARE AND HARDWARE UPGRADE TO ENSURE COMPLIANCE WITH NEW STANDARDS AND USE OF DIGITAL SUBSCRIBER LINE

YRT will be unable to process credit and debit card transactions from the terminal ticket vending machines (multiRide) if the central system and ticket vending machine software and hardware modifications are not completed by December 31, 2009, to use a digital subscriber line instead of existing Datapac 3201 line provided by Bell.

YRT also runs the risk of not being able to process credit and debit card transactions from the terminal ticket vending machines (multiRide) if it does not undertake the software and hardware modifications to be compliant with EMV (Europay, MasterCard and VISA) standards, also known as "Chip cards" standards.

Cubic Transportation Systems Inc. will provide the following services as part of the software and hardware upgrade

- Software upgrade to terminal ticket vending machines (multiRide) and ticket vending machines (oneRide) to use digital subscriber line for communication with Moneris and central system software for the credit and debit card transactions.
- Central system software upgrade for communication with the devices in the field.
- Supply and installation of EMV compliant pin-pad and credit and debit card readers on the terminal ticket vending machines (multiRide).
- Certification of interface with Moneris (service provider for the processing of credit and debit cards) to ensure device communicates with the Moneris system and central system software.
- Installation, integration and testing of the software and hardware.

The Region will pay for software and hardware upgrades

The proposed software and hardware upgrades are not covered under the current software maintenance and support agreement and hence will have to be paid separately. Table 3 provides a summary of the software and hardware upgrades costs to be paid to Cubic Transportation Systems Inc.

Table 3
Software and Hardware Upgrade Cost

Description	Costs (USD)
Terminal Ticket Vending Machine (multiRide) Software Upgrade	\$87,354
Ticket Vending Machine (oneRide) Software Upgrade	\$42,198
Central System Software Upgrade	\$60,252
Terminal Ticket Vending Machine (multiRide) Hardware Supply and Installation	\$116,610
Certifications with Moneris and other License Costs	\$59,006
Installation, Integration and Testing	\$37,552
Total Cost (USD)	\$402,972
Total Cost (CAD)	\$503,715

*An exchange rate of \$1.25 CAD = \$1 USD has been used to convert the cost into Canadian funds.

5. FINANCIAL IMPLICATIONS

Tables 1 and 2 provide summaries of the estimated software maintenance and support costs for the year 2009, 2010 and 2011.

Table 3 provides a summary of the estimated software and hardware upgrade costs to ensure compliance with the new EMV or "Chip cards" standards and the use of digital subscriber line for communications with ticket vending machines.

Sufficient funding is contained in the proposed 2009 Business Plan and Budget to cover these costs. Sufficient operating funding will also be included in 2010 and 2011 Business Plans and Budgets to cover the respective costs.

6. LOCAL MUNICIPAL IMPACT

There is no direct municipal impact associated with this project. It is anticipated that YRT will be able to maintain existing standards of service as a result of the software and hardware upgrades implemented as part of this project.

7. CONCLUSION

It is recommended that the current agreement with Cubic Transportation Systems Inc., the original equipment manufacturer of the Viva Automated Fare Collection central system and machine software maintenance and support, be extended for a period of three years, commencing on February 1, 2009, at a total cost of \$282,010, excluding taxes.

It is also recommended that the Region enter into a contract with Cubic Transportation Systems Inc., for the upgrade of the Viva Automated Fare Collection central system and ticket vending machine software and hardware in the amount of \$503,715, excluding taxes, pursuant to the sole source provisions of the purchasing by-law.

For more information on this report, please contact Rajeev Roy, Manager, Transit Management Systems, at Ext. 5682.

The Senior Management Group has reviewed this report.