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YORK REGION TRANSIT VARIOUS SCHEDULING SOFTWARE PURCHASES

The Joint Transit Committee and Rapid Transit Public/Private Partnership Steering Committee recommends the adoption of the recommendations contained in the following report November 17, 2005, from the Commissioner of Transportation and Works:

1. RECOMMENDATIONS

It is recommended that:

1. Regional Council authorize York Region Transit staff to complete negotiations and contract with Trapeze Software Inc., vendor of scheduling system software for conventional YRT and VIVA bus rapid transit services, pursuant to the sole source provisions of the Purchasing By-Law and subject to approval of 2006 Business Plan and Budget.
2. York Region Transit staff complete negotiations and contract with Trapeze Software Inc. for the installation, implementation, testing and training of the Trapeze - OPS module used for driver bidding, dispatching and timekeeping for conventional transit operators at a cost not to exceed \$309,538, plus taxes.
3. York Region Transit staff complete negotiations and contract with Trapeze Software Inc. for the installation, implementation, testing and training of Trapeze – Bus Stop Management System (BSMS), Trapeze – INFO-Publish and Trapeze – MapMaker modules used for various scheduling system related purposes at a cost not to exceed \$119,537, plus taxes.
4. The Regional Chair and Regional Clerk be authorized to sign the necessary contracts, subject to review by Legal Services.

2. PURPOSE

The purpose of this report is to seek Council authorization to enter into negotiations with Trapeze Software Inc., vendor of the scheduling system software for conventional YRT and VIVA bus rapid transit services currently being used by York Region Transit (YRT), with respect to the following:

- Implementation of Trapeze – OPS module, for driver bidding, dispatching and timekeeping, for the conventional transit service operators.

- Implementation of Trapeze – Bus Stop Management System (BSMS) module for better monitoring, inventory control and maintenance of bus stops.
- Implementation of Trapeze – INFO-Publish module for creation and production InfoPosts at bus stops providing schedule information to customers.
- Implementation of Trapeze – MapMaker module for updating maps in all Trapeze supplied software based on updated maps received from the Region’s Geomatics branch.

3. BACKGROUND

Trapeze is widely recognized industry standard software used to develop transit schedules. Trapeze Software Inc. is an industry leader in providing computer programs for the generation of transit schedules, work assignments for buses, and work schedules for bus drivers, as well as modules for “intelligent transportation systems (ITS)”. Originally installed for use in the former Markham Transit system, the software was incorporated into York Region Transit with the amalgamation of public transit services in 2001. The Trapeze FX system is currently the core repository for transit schedule information at YRT that is provided to the general public via phone, print, and internet/web media. In total, the Trapeze FX Scheduling/Runcutting system has been in use for approximately 15 years in York Region.

The Region currently holds the Trapeze – FX software licence for 400 vehicles, has an ongoing maintenance agreement for software support and has five fully-trained staff who use the software to schedule all conventional YRT and VIVA transit services.

Transit Committee and Regional Council, at its meeting in January 2005, endorsed Trapeze as the software standard for the scheduling of conventional transit services in York Region.

With the introduction of VIVA bus rapid transit service, additional Trapeze modules have been implemented for the VIVA operations and maintenance contractor, Connex, who has been using it for runcutting and rostering, as well as for driver bidding, dispatching and timekeeping. Implementation of these additional Trapeze modules for conventional transit services will result in a totally integrated scheduling system for both YRT and VIVA buses.

The use of Trapeze modules for runcutting and rostering, as well as for driver bidding, dispatching and timekeeping, has been included as a precondition of the contract extensions for conventional transit services. Currently, the conventional transit operations and maintenance contractors have been undertaking the runcutting, rostering, bidding and dispatching manually and have been using their own software for timekeeping purposes.

4. ANALYSIS AND OPTIONS

4.1 Trapeze - FX for Runcutting and Rostering by Conventional Transit Service Contractors

Currently, YRT develops the schedules using Trapeze - FX and provides the vehicle blocks to the conventional transit operations and maintenance contractors for runcutting and rostering, which is done manually by all the three contractors (Miller, Can-ar and Laidlaw). This is not only time consuming but also restricts YRT's ability to implement any mid-board period schedule changes.

The use of Trapeze - FX for undertaking the runcutting and rostering has been included as a precondition of the contract extensions for the conventional transit operations and maintenance contractors. It is already being used by the VIVA operations and maintenance contractor, Connex.

As already stated above, YRT currently holds the Trapeze – FX software licence for 400 vehicles and has an ongoing maintenance agreement for software support. Therefore, YRT will not be required to purchase additional licenses for the runcutting and rostering components of Trapeze – FX. Trapeze has indicated that they may extend the existing workstation licenses to an Enterprise license at no additional cost. This will facilitate the addition of new workstations at all conventional transit service operator facilities.

4.2 Trapeze - OPS for Driver Bidding, Dispatching and Timekeeping by Conventional Transit Service Contractors

Trapeze - OPS is a driver bidding, dispatching and timekeeping software which has been implemented for the VIVA bus rapid transit operations and maintenance contractor, Connex. Currently, the conventional transit service contractors have been undertaking the runcutting, rostering, bidding and dispatching manually, and have been using their own software for timekeeping purposes.

Implementation of Trapeze - OPS for the conventional transit services operators has the following advantages:

- Unified approach to runcutting, rostering and operations management.
- Minimum manual processes involved in driver assignment and management.
- Integrated system for the management of day-to-day operations of the service, providing both YRT and the operators valuable information for decision making and bench marking.
- Reduction of redundant processes and improved data integrity by extending access to the scheduling system to the operators.
- Better control over auditing of revenue service hours, the basis for payment to the operators.

Trapeze - OPS has already been implemented for the VIVA bus rapid transit service. Implementation of additional Trapeze modules for conventional transit services will result in a totally integrated scheduling system for both YRT and VIVA buses.

The use of Trapeze OPS for driver bidding, dispatching and timekeeping has been included as a precondition of the contract extensions for conventional transit services.

4.3 Trapeze Bus Stop Management System (BSMS) for Bus Stop Inventory Control

Currently, YRT uses a MS Access database with limited functionality for bus stop inventory control. The following Trapeze traveller information systems are planned to be implemented early next year:

- Interactive Voice Response (INFO – IVR).
- Web based Trip Planning (INFO – Web).
- Customer Service Centre software (INFO – Agent).

Introduction of these traveller information systems require that we not only maintain an up to date bus stop inventory but also integrate the information with these traveller information systems. The implementation of bus stop management system (BSMS) will support the administration of the bus stop inventory and meet the integration objective.

4.4 Trapeze INFO-Publish for Creating Bus Stop Schedules

YRT provides customer information to its riders through various media including Infopost schedules at selected stops and terminals. The Infopost schedules provide schedule (time point) information for a route at a particular stop for conventional buses and are located throughout the Region.

The information shown on the Infopost is based on schedule information maintained by the YRT Service Planning group. Any updates to the schedule for a particular route require a corresponding update to the Infoposts for that route in order to provide riders with the latest information.

YRT's Marketing and Customer Service group manages the delivery of Infopost information as a service to YRT's riders, while the maintenance of the hardware used for the Infopost is managed by YRT Operations staff.

YRT recognizes the value of Infoposts as a method of information delivery to its riders; however, in the event of a schedule change, the process of updating the units is time consuming and involves several different functional areas of YRT.

Use of Trapeze INFO-Publish provides a web based solution to administer the creation of stop schedules. This will lead to a reduction in the time required for the creation of new Infoposts and the updating of existing Infoposts because of schedule changes.

YRT has also constituted an Infopost Cross Functional Review Team whose primary goals are:

- To improve the delivery of Infopost information through an improved update process and/or possible alternatives.
- To standardize the deployment of Infoposts.

The staff team is meeting at regular intervals and will be involved in the implementation of the Trapeze INFO-Publish software.

4.5 Trapeze Map Maker for Updating Maps

Currently, YRT relies on Trapeze for updating the map layers in Trapeze - FX system which is being currently used for scheduling conventional YRT and VIVA bus rapid transit. The updated map layers are provided by the Geomatics branch of the Region. The update is undertaken twice a year and Trapeze is paid for each and every update as and when it is done. Since Trapeze is a proprietary software, standard off the shelf software cannot be used for updating maps.

The update is necessary to capture the new roads and new subdivisions which are being added to the Region so that Service Planning has the most up to date information for service expansion and future planning.

Implementation of the traveller information system as described above will require updating not only to the Trapeze – FX system, but also to Trapeze – IVR, Trapeze – Web and Trapeze – Agent systems.

Trapeze Map Maker is a proprietary tool which provides the functionality to import map layers into the Trapeze database. Therefore, it is advisable to purchase the tool itself and undertake the update internally by our own staff.

4.6 Trapeze Use in the Transit Industry

The Trapeze Software Group has installed transit scheduling/runcutting systems across North America, including at the following transit properties:

1. Toronto Transit Commission – Toronto, Ontario
2. GO Transit – Toronto, Ontario
3. Hamilton Street Railway – Hamilton, Ontario (in progress)
4. TransLink – Vancouver, British Columbia
5. Southeastern Pennsylvania Transportation Authority (SEPTA) – Pennsylvania, USA
6. Central Ohio Transit Authority (COTA) – Ohio, USA

The cost for proposed upgrades and new purchases appear to be reasonable compared to the contractual rates for the VIVA project and also for comparable proprietary software.

5. FINANCIAL IMPLICATIONS

The cost of these upgrades and new purchases to the Trapeze system for YRT's conventional fleet, including Trapeze - OPS, Trapeze – Bus Stop Management System (BSMS), Trapeze – INFO-Publish and Trapeze – MapMaker, is estimated to be \$429,075 (plus taxes) which includes all license fees and cost of implementation.

The cost for these upgrades and new purchases is included in the draft 2006 Business Plan and Budget. Expenditures on this project are, therefore, subject to the approval of the 2006 Business Plan and Budget.

The report is being submitted in advance to expedite the process and implement the upgrades for YRT's conventional fleet by spring of 2006, when most of the operations and maintenance contracts are due for renewal.

6. LOCAL MUNICIPAL IMPACT

There is no municipal impact associated with this project.

7. CONCLUSION

It is recommended that YRT staff be authorized to enter into negotiations and contract with Trapeze, vendor of scheduling system for conventional YRT and VIVA transit services, for the implementation of Trapeze – OPS, Trapeze – Bus Stop Management System (BSMS), Trapeze – INFO-Publish and Trapeze – MapMaker modules on YRT systems.

The Senior Management Group has reviewed this report.