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DATE 1 October 1999

TO/DEST. Co-ordinator
 Transit Services Committee

FROM/EXP. General Manager

SUBJECT/OBJET **SYSTEMWARE INCORPORATED - APC SOFTWARE**

DEPARTMENTAL RECOMMENDATION

That the Transit Services Committee confirm the award of a contract approved under the Commission Chair's Delegated Authority (Transit Services Committee , 19 May 1999) to Systemware Incorporated of Toronto to an upset limit of \$197,000 for the re-engineering of the Automated Passenger Counting software system.

BACKGROUND

OC Transpo operates an Automated Passenger Counting (APC) system which collects information on passenger activity and bus movements on an ongoing basis. The database created by the system is extensively used for planning, scheduling and performance monitoring of the bus service.

The current version of the software was developed by Systemware under contract to the Commission in 1986. The software system consists of two subsystems; a database and reporting system and a daily data processing system. In 1994, Systemware was awarded a contract to re-engineer the database and reporting component so that it operates using a standard relational database on a PC platform. The daily data processing component continues to operate under VMS on a VAX platform.

Since 1986, Systemware has provided software maintenance services and made enhancements when needed. These services have been delivered to our full satisfaction.

SCOPE OF WORK

Three areas will be addressed with the project:

- completing the conversion of APC to run on a PC platform;
- converting APC to use Oracle, the corporate relational database and;
- implementing program enhancements.

The daily processing module will be converted to the PC platform which will make the entire APC system PC-based. This is important as the Commission strives to move all applications over to the latest technology and away from the older VMS/VAX system.

The current APC system uses SQL Server for its database. The Commission has adopted Oracle as its corporate relational database system. As part of the project, the system will be converted to use Oracle.

Two important program enhancements are needed. These relate to how the program logic deals with low-floor passenger counts and the inclusion of future Global Positioning System (GPS) data. Staff have equipped two low-floor buses with APC and have shown the need for the software to handle the passenger counts in a slightly different way from that of high-floor buses.

It is expected that the entire bus fleet will be equipped with GPS within the next two years. APC buses equipped with GPS will make use of this data to improve locational accuracy. As part of the re-engineering of the daily processing logic, a change will be made to allow GPS coordinates to be stored so that the conversion to its use in the future will be easier.

DISCUSSION

A project of this type is very specialized as only a portion of the software system is being re-engineered. As well, the enhancements to be made require detailed knowledge of the current programs and algorithms. The new component, when integrated with the existing system must ensure no disruption to users and that the data integrity is fully protected. Systemware, who were responsible for the original design and have provided maintenance and enhancement support through the years, are the only group fully familiar with the application. For this reason, discussions have taken place with them to obtain an estimate to do the work. In the opinion of staff, the proposal represents good value for money in comparison with other work of similar complexity on which consultants have worked in the past.

FINANCIAL IMPLICATIONS

The project will commence in October and will not be completed until June 2000. The 1999 approved capital spending plan contains \$185,000 for this work. The remaining funds to finish the project are available from unused capital spending authority for the APC program in 1998.

*Approved by
M.J.E Sheflin, P.Eng.*