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YORK REGION TRANSIT DATA WAREHOUSE AND BUSINESS INTELLIGENCE CONTRACT AWARD

The Transit Committee recommends the adoption of the recommendations contained in the following report dated March 30, 2009, from the Commissioner of Transportation Services and the Commissioner of Finance.

1. RECOMMENDATIONS

It is recommended that:

1. Regional Council authorize entering into a contract with Inforica Inc. for developing specifications and an implementation plan for a York Region Transit data warehouse and business intelligence solution at a cost not to exceed \$198,986, inclusive of all taxes.
2. Regional Council authorize entering into a contract with Inforica Inc., subject to successful negotiations and approval of the Commissioner of Transportation Services and Chief Information Technology Officer, for the development, construction, building and deployment of a data warehouse and business intelligence system identified and finalized as stated above, at a cost not to exceed \$971,775, inclusive of all taxes.
3. The Regional Chair and Regional Clerk be authorized to execute the contract, subject to terms and conditions acceptable to the Commissioner of Transportation Services, and the approval of Legal Services as to form and content.
4. This report be sent to Finance and Administration Committee for information.

2. PURPOSE

This report seeks Regional Council authorization to enter into a contract with Inforica Inc. for developing specifications and an implementation plan for a York Region Transit (YRT) data warehouse and business intelligence system (Part A).

This report also seeks Regional Council authorization to enter into a contract with Inforica Inc. for the development, construction, building and deployment of a data warehouse and business intelligence system (Part B). The detailed scope of the data warehouse and business intelligence system will be finalized after the completion of Part A. Part B of the project will only be awarded to Inforica Inc. subject to successful negotiations with YRT and York Region Information Technology (IT) services staff.

The YRT data warehouse and business intelligence system will enable staff to analyze data and convert it into useful information, which will in turn enable smarter business decisions. This includes more efficient matching of services to demand, better monitoring of service levels (delays, schedule adherence, etc.) and better allocation of resources in general.

3. BACKGROUND

YRT has implemented many innovative systems and has installed state-of-the-art transit technologies, including automated passenger counting (APC), computer-aided dispatch and automatic vehicle location (CAD/AVL), automated fare-collection systems and scheduling and trip-planning systems. These systems generate large amounts of data on a daily basis including schedule adherence statistics, ridership, revenue/service hours and other operational and financial statistics.

Currently, YRT does not have an automated tool to manage the huge volume of data outputs or to convert the data into useful information which could be used by functional units within the branch to manage their businesses in an efficient and cost-effective manner. A data warehouse and business intelligence system will provide YRT with the necessary tools to provide the right information, to the right decision makers, at the right time, by managing the data in an efficient manner. This system will provide a central repository for all data currently being generated by the systems installed on Viva, YRT and Mobility Plus buses, and at stations and terminals.

Business intelligence has also been identified as one of York Region's corporate key strategic initiatives. The Information Technology (IT) Services Branch and YRT have worked together in developing a Request for Proposal (RFP) to implement the data warehouse and business intelligence system on a pilot basis for YRT. The Region's IT Services Branch already has the necessary data warehouse software licenses and hardware which will be required to implement the YRT data warehouse system. In the meantime, the IT Services Branch is also working to purchase the business intelligence software which will be used to implement the YRT business intelligence part of the system. This joint YRT-ITS project will demonstrate the capabilities of these systems to deliver corporate data warehousing and business intelligence solutions across Regional departments.

4. ANALYSIS AND OPTIONS

4.1 SCOPE OF WORK

On November 7, 2008, the Region's Supplies and Services branch issued a Request for Proposal (RFP) to receive the following services from proponents:

Consultant will finalize detailed scope of work (Part A)

The consultant will perform an operational analysis of YRT's business processes and review the functional requirements prepared by YRT staff. From this work, the consultant will develop technical specifications and a detailed implementation plan for the data warehouse and business intelligence system. The selected proponent will be performing the following tasks under Part A:

- Work with staff and other related operations departments to understand the current business applications and reporting processes.
- Specify the applications required to deliver the data warehouse system.
- Work with staff to confirm the data sources to be integrated into the data warehouse.
- Work with YRT and Geomatics staff to identify the required information for map-based reports.
- Specify the procedures to extract, transform and load the data from existing sources to the data warehouse.
- Design reports for planning, operational and management functions of YRT.

Consultant will build and deploy the system (Part B) after the detailed scope of work has been finalized

This part covers all activities related to system implementation. The consultant will execute, monitor and control implementation tasks covering development, construction, building and deployment of solutions identified and finalized in Part A. The consultant will be performing the following types of tasks under Part B:

- Execute, monitor and control implementation tasks covering configuration, development, construction, building and deployment of solutions identified and finalized in deliverables under Part A.
- Develop, construct, build and deploy data entry, data validation, data enrichment and analytical and reporting solutions.
- Deploy Business Intelligence solution.

4.2 REQUEST FOR PROPOSAL

All proposals were evaluated based on each consultant's compliance with the conditions described in the RFP

The selection of the preferred consultant was based on a comprehensive evaluation of the consultant's compliance with the conditions described in the RFP and their experience on similar projects and technical capabilities. The evaluation also included an interview process where the proponents were required to demonstrate their technical capability to undertake the development of such a system. Forty-two firms purchased the RFP documents and four responses were received by December 17, 2008, the closing date.

The proponents were required to submit their technical and financial proposals in separate envelopes. Financial proposals were opened and interviews held only for the proponents who scored a minimum of 60% of the total assigned points (60) for their technical and management proposal.

The following proponents submitted proposals:

- Inforica Inc.
- IBM Canada Limited.
- Solutia SDO Limited.
- System Innovation Corporation.

4.3 TECHNICAL AND MANAGEMENT PROPOSAL

Technical and management proposals were evaluated by an expert panel

The technical and management proposals were evaluated by an evaluation panel consisting of YRT staff and IT Services staff, Entra consultants, and the Region's Supplies and Services branch. The following predetermined criteria were used for the evaluation:

- Experience in the implementation of similar systems.
- Qualification and certification.
- Specific transportation business and process experiences.
- Three references provided by the proponent.
- Quality of the proposal in terms of methodology and approach to the project.
- Project management methodology, approach and project timeline.
- Demonstrated understanding of Region's requirements and key objectives of the project.
- Responsiveness to the RFP, completeness and comprehensiveness of submission and demonstrated willingness to comply with terms and conditions of the RFP
- Value added services.

The following two technical and management proposals scored more than 60% of a total 60 points assigned to the technical and management proposals, the minimum score required for moving on to the next stage, (i.e. the interview stage):

- Inforica Inc.
- IBM Canada Limited

4.4 INTERVIEWS

The interviews were evaluated by the same panel responsible for the evaluation of technical and management proposals

The following predetermined criteria were used for the evaluation of the interview and the proposed systems:

- General level of professional quality and effectiveness of the proponent's approach to the presentation and materials.
- Demonstrated understanding of the terms of reference included in the RFP.
- Quality of their answers and presentation during the interview.

A total of 20 points were assigned for the interviews.

4.5 FINANCIAL PROPOSAL

The financial proposals were evaluated based on the total cost quoted (both Part A and Part B) by the proponents in the financial proposal form

A predetermined score weighted at 20 points (out of 100) was used for the evaluation of financial proposals. The lowest financial proposal was awarded 20 points and the other financial proposal was scored proportionately comparing it to the lowest proposal.

4.6 SUMMARY OF EVALUATION

Table 1 provides a summary of the results of technical and management, interview and financial evaluations.

Table 1
Proposal Evaluation Results

Proponent	Technical and Management Proposal Score (Out of 60)	Interview Score (Out of 20)	Financial Proposal Estimated Cost	Financial Proposal Score (Out of 20)	Total Score (Out of 100)	Relative Standing
Inforica Inc.	43.2	14.8	\$1,170,761	20.0	78.0	1
IBM Canada Limited	39.3	13.5	\$2,142,420	10.9	63.7	2

Based on the above, Inforica Inc. is the recommended proponent.

5. FINANCIAL IMPLICATIONS

The cost of developing specifications and an implementation plan for the York Region Transit data warehouse and business intelligence system (Part A) is \$198,986.

The cost of development, construction, building and deployment of the data warehouse and business intelligence system (Part B) is estimated at \$971,775.

A sum of \$500,000 in capital funding is contained in the YRT 2009 Business Plan and Budget. The IT Services Branch has committed to \$300,000 in capital funding to support consulting services and Business Intelligence software acquisition which is contained in their 2009 Business Plan and Budget. It is estimated that the incremental annual operating cost related to software maintenance and hardware costs will be approximately \$35,000 per year. This project is planned to be implemented within the existing corporate technology infrastructure, utilizing current PeopleSoft Enterprise Warehouse and Oracle database software licenses. Incremental software costs are attributable to Business Intelligence software licences for YRT.

Sufficient capital funding will be included in the 2010 Business Plan and Budget to cover the remaining costs.

Table 2 provides a summary of the capital and operating budget outlay for the design, construction, implementation and on-going operating costs of the YRT data warehouse and business intelligence solution.

Table 2
Capital and Operating Budget

Description	Year 2009	Year 2010	Year 2011 onwards
YRT Capital	\$500,000	\$400,000	-
IT Service Branch Capital	\$300,000	-	-
IT Service Branch Operating	-	-	\$35,000 per year

Access to better information will allow YRT to make smarter business decisions. By having accurate and timely data that inter-relates YRT's various business functions, it will facilitate a higher level of business efficiency. This includes more efficient matching of services to demand, better monitoring of service levels (delays, schedule adherence, etc) and better allocation of resources in general. This includes the optimization of the bus fleet, access to system data for improved schedule efficiency, and immediate access to system operations data for efficient service planning and customized performance reports for improved decision making. For example, just a one percent savings in revenue hours could result in an operating savings of approximately \$1.2 million annually.

6. LOCAL MUNICIPAL IMPACT

There is no direct municipal impact associated with this project. It is anticipated that the quality of service planning will significantly improve as a result of the project.

7. CONCLUSION

Data warehousing and business intelligence systems will advance the capabilities of YRT to manage the huge volumes of data that it gathers, convert this data to useful information, and manage its business in an efficient and cost-effective manner. These systems will provide a central repository for all transit data being generated by the many systems already installed on Viva, YRT and Mobility Plus buses and at stations and terminals. Furthermore, such business intelligence software will eventually become a corporate standard for use by other Regional departments to manage their data as well.

It is recommended that Regional Council authorize entering into a contract with Inforica Inc. for developing specifications for the York Region Transit data warehouse and business intelligence system and an implementation plan, at a cost not to exceed \$198,986, inclusive of all taxes.

It is further recommended that Regional Council authorize entering into a contract with Inforica Inc., subject to successful negotiations and approval of the Commissioner of Transportation Services and Chief Information Technology Officer, for the development, construction, building and deployment of a data warehouse and business intelligence system identified and finalized as stated above, at a cost not to exceed \$971,775, inclusive of all taxes. It is noted that the cost for Part B is based on the proponent's quoted hourly rates and YRT and IT staff estimated the hours required to complete the tasks. Therefore, the final cost for Part B may change and shall be dealt with pursuant to the provisions of the Regional Purchasing By-law.

For more information on this report, please contact Rajeev Roy, Manager, Transit Management Systems at Ext. 5682 or Mark McKnight, Application Unit Manager, IT Services at Ext. 1810.

The Senior Management Group has reviewed this report.