STAFF REPORT
ACTION

Procurement Authorization – Computer Aided Dispatch/Automatic Vehicle Location (CAD/AVL) System (Referred from January 21, 2016 Meeting)

Date:	February 25th, 2016
To:	TTC Board
From:	Chief Executive Officer

Summary

The purpose of this report is to obtain authorization for the award of Contract No. C25PW15793 for the procurement of a Computer Aided Dispatch/Automatic Vehicle Location (CAD/AVL) System for the VISION (Vehicle Information System and Integrated Operations Network) Implementation Program to Clever Devices Canada ULC in the Total Contract Price of $77,415,304.98 (including HST) in Canadian funds, with a duration of 10 years from the execution of the contract, on the basis of highest total weighted score.

An allowance in the upset limit amount of $4,000,000.00 is recommended to be included in the amount to be approved by the Board to cover costs associated with options, changes and spares which will be issued as Contract Amendments in accordance with the Authorization for Expenditure Policy when required during the term of the contract.

RECOMMENDATIONS

It is recommended that the Board:

1. Receive the additional information contained in this report as requested by the Board at its meeting on January 21, 2016;

2. Authorize the award of Contract No. C25PW15793 for the Computer Aided Dispatch/Automatic Vehicle Location (CAD/AVL) System for the VISION (Vehicle Information System and Integrated Operations Network) Implementation Program to Clever Devices ULC in the Total Contract Price of $77,415,304.98 in Canadian funds, with a duration of ten (10) years from the Contract Execution, on the basis of highest total weighted score;

3. Authorize an allowance in the upset limit amount of $4,000,000.00 to cover costs associated with options, changes and spares which will be issued as Contract Amendments in accordance with the Authorization for Expenditure Policy;

4. Authorize the Total Amount of $81,415,304.98 for the procurement of the CAD/AVL System; and

5. Request that benefits realized be tracked and reported through the TTC E-Working Group.

Financial Summary

Sufficient funds to accommodate this expenditure is included in the Toronto Transit Commission's 2015-2024 Capital budget under 7.1 IT Systems/Infrastructure – 7.15 CAD/AVL System Project as approved by City of Toronto Council on March 10/11, 2015 and also in the 2016-2025 Capital Budget as on pages 897-898 as approved by the Board on November 23, 2015 and is pending City of Toronto Council approval on February 17/18, 2016.

Submissions will be made in the future Operating Budget for the annual maintenance costs totaling $14,887,532.44 for the remaining nine (9) years of the contract period.

The estimated final cost of this project is $115.4 million as detailed on page 8 of this report.

The Chief Financial and Administration Officer has reviewed this report and agrees with the financial impact information.

Accessibility/Equity Matters

The VISION system will provide enhanced communication capabilities which will facilitate the integration of mobility challenged customers into the fixed route system. The VISION system will provide enhanced customer communications by improving on the Next Stop Announcement system and integration with the Customer Service Disruption System.

Decision History

At the January 21, 2016 meeting the Board requested staff provide additional information in support of the recommended contract award (Contract No C25PW15793) for the procurement of a Computer Aided Dispatch/Automatic Vehicle Location (CAD/AVL) System.

http://www.ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2016/January_21/Reports/PA_Computer_Aided_Dispatch_Automatic_Vehicle_Location_CAD_AV.pdf

The following report documents the financial and target-based business case supporting the award recommendation.

Issue Background

Communication and Information System (CIS)

The TTC's current Communications and Information System (CIS) is a first generation CAD/AVL System providing: mobile communications; computer aided dispatch and automatic vehicle location services. The CIS system provides data and voice communications, connecting the bus and streetcar fleets with 10 Divisional Control Offices and the Transit Control Centre. The CIS is primarily used for life-safety, emergency response and co-ordination, route management as well as providing data feeds to support the Next Vehicle Arrival System and City of Toronto Open Data initiative (link below).

(http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=9e56e03bb8d1e310Vgn VCM10000071d60f89RCRD).

The CIS System is based on technology that is over 30 years old, the operation of which has been extended through the State of Good Repair program.

As such, the current system has significant limitations including:

- *Hardware supply* – The original supplier for CIS' on-board TRUMP units is no longer in business, and the TTC cannibalizes and custom-builds units to maintain a sufficient working inventory;
- *Technology* – CIS has been refreshed over the past 30 years, but maintains a data architecture and technology that is dated by modern standards. The system is closed and integration to it is cumbersome and costly. Automatic Passenger Counters, Next Stop Announcements, On-board Camera System and Transit Signal Priority are not integrated to the CIS TRUMP resulting in missed synergies. Furthermore, there are many functions that modern day systems provide that CIS does not (further outlined below);
- *System administration* – Operating and administering CIS involves a fair amount of manual processes. As an example, ingesting TTC schedules, which must be done every board period, requires dedicated staffing. The data generated from the system is limited and difficult to access, also requiring dedicated staffing;

- *Communications* – CIS is considered a life-critical system to the TTC because it provides communication to the operator in the event of an emergency. CIS communicates using UHF radio technology and Bell Canada's CDMA cellular network. Bell has indicated that the CDMA network will be sunset as early as January 2017, resulting in a reduction in redundancy and reliability of the communications provided by CIS; and
- *Processes* – many aspects of TTC's operations are still manual due to the limited functionality of CIS as it compares to a modern system. Notably, operator workflow at sign-in is unsupported through the existing system. Similarly, yard management and many administrative tasks are manual. For example, updating vehicle next-stop announcements involves going to each vehicle with a USB stick as opposed to using the wireless LAN capabilities currently being implemented at the TTC's garages.

In 2012, the Commission engaged IBI Group through a competitive Request for Proposal (RFP) process to review the status of the current CIS System and develop a Way Forward Report. The Way Forward Report recommended that the TTC purchase and implement a new CAD/AVL System to deliver the required functionality to stay current with technology and leverage industry best practices to achieve the organization's goals and objectives.

Comments

VISION Program

Benefits
The original business case developed as part of the CIS Way Forward Study assessed options for the lowest cost over 20 years comparing the CIS + SOGR Option and implementing a new CAD/AVL system (VISION). The business case considered factors including anticipated pricing based on the prior experience of other agencies, and forward-looking projections for service levels and staffing.

Since the CIS Way Forward Study, a number of the assumptions and projections have been refined to reflect additional information obtained from the RFI/RFP process.

Table 1 updates the cost comparison over 20 years of in-service use to reflect current data, for both the selected VISION Program Option and the not selected CIS + SOGR Option. The selected VISION Program Option is projected to result in substantial overall life cycle cost savings/cost avoidances for deployment, maintenance, and other operating costs totalling $227.2 million over a period of 20 years.

Appendix A outlines a detailed description of each of the cost components reflected in Table 1as part of the original business case.

It should be noted in reviewing Table 1 below that trying to keep CIS working is not a feasible alternative. The vendors who provided CIS components are either no longer in business or their products are no longer being manufactured.

Table 1

20 Year Aggregate Cost	CIS + SOGR Option	VISION Program Option	Difference
Deployment Costs	$62.9 M	$95 M*	($32.1 M)
Years 2 20 of Vendor Maintenance	$0	$33 M	($33 M)
20 Years of TTC System Maintenance	$119.2 M	$0	$119.2 M
20 Years of Other TTC Costs	$173.1 M	$0	$173.1 M
Non varying TTC costs	$90.7 M	$90.7 M	$0
TOTAL	**$445.9 M**	**$218.7 M**	**$227.2 M***

* Does not include the $20.4M addition to contingency for changes in the U$ to CAN$ exchange rate and an increase in the number of units to be installed since the CIS Way Forward Study was completed

The estimated $173.1 million difference between the options for "20 Years of Other TTC Costs" is comprised of anticipated cost savings and cost avoidances in various areas. The $173.1 million does not include the additional potential benefit of $12 million associated with More Cost-Effective Customer Information that was identified since the Way Forward Study was completed. These estimates are based on the experience of IBI Group with CAD/AVL deployment projects at over 20 other North American transit agencies. The above costs savings and cost avoidances will be fully-examined and verified through the business process improvement phase of this project that is underway, and reported through the TTC E-Working Group.

The above cost avoidances and cost savings represent the estimated benefits of the VISION system option over the CIS + SOGR option that were quantifiable during the CIS Way Forward Study. The TTC can achieve these estimated benefits by proceeding with the selected VISION Program Option. Table 2 subdivides the 20-Year estimated quantifiable benefits total into categories representing cost reductions and freed up labour costs described in more detail in Appendix A.

Table 2

20 Year Aggregate Benefit	VISION Program
Avoid Manual Data Transfers	$3 M
Route Supervision Efficiency	$75.6 M
Yard Operator and Vehicle Management	$74.5 M
Transit Signal Priority	$20 M
TOTAL 20 YEAR ESTIMATED QUANTIFIABLE BENEFITS	**$173.1 M***

* Does not include the additional potential benefit of $12 million associated with More Cost-Effective Customer Information that was identified since the Way Forward Study was completed

The VISION system will have robust data capabilities far in excess of the current CIS system. Once deployed, more KPI's and other targeted information will be available for decision making. Data analytics will be available to help find opportunities for operational efficiencies not otherwise immediately evident to management thus providing many opportunities to improve service and reduce costs. Appendix B provides further detail on the key deliverables and benefits of the VISION program.

Procurement

Due to the complex nature of IT procurements, a legal firm (Osler, Hoskin & Harcourt LLP) specializing in technology procurements for large projects, was retained by TTC to assist with this complex procurement.

A Fairness Monitor, Veronica Bila of MNP LLP was also retained by the TTC to provide an independent third party observation to ensure that the procurement process took place in accordance with the requirements established as set out in the RFP and to ensure fairness and transparency during this process.

The procurement process has extended over a 14 month period starting in January, 2015 to the current date. An RFP was publicly advertised on the MERX Web site as of June 11, 2015 for the provision of a computer aided dispatch and automated vehicle location system, and related implementation, hardware supply and certain ongoing support services. Forty –nine companies downloaded copies of the proposal documents, out of which seven submitted a proposal by the closing date of September 10, 2015. The goal of this procurement process is to obtain the best technical solution, at the least risk to the TTC and at the best possible price.

The evaluation of proposals was based on a five stage, two envelope process consisting of both qualitative and pricing components, with pricing being in a separate sealed envelope. The pricing would only be opened if proponents met the 70% minimum threshold for the qualitative evaluation. If proponents did not meet this minimum threshold then their pricing would remain sealed. The recommendation for award is based on the highest total weighted score.

The evaluation criteria for each of the five stages of evaluation are summarized as follows:

1) Stage 1 – Commercial Compliancy - involved a commercial compliancy review of the contents of the Proposal submissions to assess its compliance with the terms and conditions of the Proposal Documents, including whether all documents required to be submitted have been appropriately submitted. Proponents must meet the requirements of Stage 1 in order to continue to Stage 2 of the evaluation.

2) Stage 2 – Technical Evaluation – consisted of a qualitative technical evaluation based on the pre-established evaluation criteria and weighting. Proponents were required to achieve a total minimum of 49 points out of the maximum 70 points available for this Stage 2 in order to be considered qualified to move onto Stage 3 and 4 of the evaluation process. This stage included the evaluation of any proposed variations by the Proponent to the Master Services Agreement (MSA) and Statements of Work (SOW) documents that were included in the RFP.

3) Stage 3 – Demonstration Evaluation – consisted of a technical evaluation of demonstration scenarios based on pre-established evaluation criteria and weighting. Proponents were scored out of a maximum 5 points available for this Stage 3.

4) Stage 4 – Pricing Evaluation - Pricing information was required to be submitted in a separate sealed envelope which would only be opened upon the successful completion of Steps 1 through 3 described above. Proponents were scored out of a maximum of 25 points available for this Stage 4 allocated as follows:

   - 24.5 points for the Grand Total for the Core System
   - 0.5 points for the Composite All-Inclusive Blended Hourly Billing Rate

5) Stage 5 – Contract Negotiation - The total weighted score was calculated as a sum of the weighted qualitative score and the weighted pricing score from Stages 2 to Stage 4. The Proponent with the highest total weighted score would be selected to enter into negotiations with TTC. During negotiations, only those items where the Proponent had submitted proposed variations to the MSA and SOW would be discussed. Where the Proponent had not marked-up a term or condition of the MSA and SOW, the Proponent was deemed to have agreed to the term, condition or requirements as proposed by TTC.

Clever Devices Canada ULC was the highest ranked Proponent taking into account the qualitative and quantitative portion of the evaluation in accordance with five steps describe above. Clever Devices has installed their system in New York City Transit, New Jersey Transit, Chicago Transit Authority, Washington Metropolitan Area Transit Authority (WMATA) and Ottawa Carleton Transportation (OC Transpo).

All proponents were also required to provide pricing with their RFP for various technical options with their proposal. TTC is electing to exercise six (6) technical options which are currently included as part of the Total Contract Price recommended for award and a discount of $2.5 million offered by Clever Devices Canada ULC as a result of exercising these technical options.

At the January 21, 2016 Board meeting the TTC Board requested that staff provide additional information in support of the recommended contract award (Contract No C25PW15793) for the procurement of a Computer Aided Dispatch/Automatic Vehicle Location (CAD/AVL) System. The recommendations remain as previously stated in the January 21, 2016 Board report.

The original Business Case for the CAD/AVL program was developed as part of the Communication and Information System (CIS) Way Forward Study undertaken by IBI Group and was used in the CAD/AVL program Capital Budget submission approved in 2013. This effort was based on IBI Group assessing TTC conditions, issues, and needs, and on its prior experience on assisting over 20 other North American transit agencies with deploying CAD/AVL systems. The IBI Group estimated the cost of the program: $95M including contingency. A breakdown of implementation costs is outlined in Table 3.

Table 3

COST CATEGORY	TOTALS
Equipment Costs	$41,978,000
Software and Licensing Costs	$8,268,000
Testing Costs	$10,206,000
Warranties, Integration, Installation and 1st Year Support	$25,597,600
Vendor Annual Maintenance Cost (1st Year)	$257,000
TTC Staff	$859,000
Total Implementation Costs (w/o contingency)	**$87,165,600**
Contingency	$7,834,400
Total Implementation Costs Original Budget	**$95,000,000**
Contingency Increase (2016)	$20,400,000
Total Revised Implementation Costs	**$115,400,000**

The current report updates the Business Case to reflect more current costs and benefit estimates gathered through the RFI and RFP processes.

Contact

Anthony Iannucci
Head – Information Technology Services
Phone: 416-393-3565
Email: Anthony.Iannucci@ttc.ca

Jim W. Lee
Head – Materials & Procurement
Phone: 416-393-3113
Email: Jim.Lee@ttc.ca

Attachments

- Appendix A
- Appendix B
- January 21, 2016 Board Report

CIS Way Forward Study Findings

Updated Business Case

The original business case, as articulated in the CIS Way Forward Study, was developed in collaboration with TTC Stakeholders. It assessed options for lowest cost over 20 years of system use. The approach considered factors including anticipated pricing based on the prior experience of other agencies, and forward-looking projections for service levels and staffing.

Since the CIS Way Forward Study, a number of the assumptions and projections have become increasingly defined. The following information has been re-calculated using the negotiated contract costs.

20-Year Aggregate Program Costs
Deployment costs for the selected VISION Program Option include:

- Vendor cost for system deployment under this contract
- TTC internal cost to procure and configure existing equipment to enable integration with the vendor-provided system
- Associated TTC staffing costs
- Contingency
- First year of vendor system maintenance (approximately $1.4 million dollars annually).

This vendor system maintenance annual cost includes 24/7 help desk service, software patches/updates, onsite support where required, business continuity services, and other associated services.

Table 1 highlights total deployment and operating costs over 20 years of in-service use, for both the selected VISION Program Option and the not selected CIS + SOGR Option.

This shows how over this period the selected VISION Program Option is projected to result in substantial overall life cycle cost savings/cost avoidance for deployment, maintenance, and other operating costs totalling $227.2 million over a 20 year comparison period. Trying to keep CIS working is not a feasible alternative. The vendors who provided CIS components are no longer in business or their products are no longer being manufactured. The estimated order-of-magnitude costs shown in the table are solely for comparison purposes.

Table 1

Deployment Costs	$62.9 M	$95 M*	($32.1 M)
Years 2 20 of Vendor Maintenance	$0	$33 M	($33 M)
20 Years of TTC System Maintenance	$119.2 M	$0	$119.2 M
20 Years of Other TTC Costs	$173.1 M	$0	$173.1 M
Non varying TTC costs	$90.7 M	$90.7 M	$0
TOTAL	**$445.9 M**	**$218.7 M**	**$227.2 M***

* Does not include the $20.4M addition to contingency for changes in the U$ to CAN$ exchange rate and an increase in the number of units to be installed since the CIS Way Forward Study was completed

1. **Deployment Costs (-$32.1 M) :**

   - Re-designing the system architecture
   - Purchasing/installing sufficient equipment to mitigate the communications risk.

2. **Years 2 – 20 of Vendor Maintenance (-$33M)**
   - Sum of annual amounts payable to vendor for system maintenance, enhancements and support. The amount is set for the contract term of 10 years and an inflation factor was applied for the remaining 10 year estimate.

3. **20 Years of TTC System Maintenance ($119.2M):**
   - $5 million annually to maintain system components, including upgrades to equipment with a hardware provider still in business
   - 8.7 full-time equivalent employees on average throughout the 20 years to facilitate ongoing maintenance.

4. **20 Years of other TTC Costs ($173.1M)**
   - 20 years of other TTC Costs comprised of anticipated cost savings listed below under the heading 20 Year Quantifiable Benefits.

5. **Non-varying TTC costs ($ 0M)**
   - Account for increased system user and maintenance costs over the 20-year period that will remain the same for both alternatives.

20-Year Quantifiable Benefits

The estimate $173.1 million difference between options indicated in the table above for "20 Years of Other TTC Costs" is comprised of anticipated cost savings and cost avoidance in various areas. The $173.1 million does not include the additional potential benefit of $12 million associated with More Cost-Effective Customer Information that was identified since the Way Forward Study was completed. These are based on the experience of IBI Group with CAD/AVL deployment projects at over 20 other North American transit agencies. These will be fully-examined and verified through the business process improvement phase of this project that is underway, and reported through the TTC E-Working Group.

These represent the estimated benefits of the VISION system option over the CIS + SOGR option that were quantifiable during the CIS Way Forward Study. TTC can achieve these estimated benefits by proceeding with the selected VISION Program Option. Table 2 below subdivides this 20-Year estimated quantifiable benefits total into various categories (discussed further below the table). Some represent specific cost reductions, while others represent freed up labour costs.

Table 2

20 Year Aggregate Benefit	VISION Program
Avoid Manual Data Transfers	$3 M
Route Supervision Efficiency	$75.6 M
Yard Operator and Vehicle Management	$74.5 M
Transit Signal Priority	$20 M
TOTAL 20 YEAR ESTIMATED QUANTIFIABLE BENEFITS	**$173.1 M***

*　Does not include the additional potential benefit of $12 million associated with More Cost-Effective Customer Information that was identified since the Way Forward Study was completed

The following discusses each of these quantifiable benefits in further detail, including information about cases where it seems reasonably likely based on further benefits analysis currently underway that quantifiable benefits could be even higher than originally estimated for the CIS Way Forward Study.

Benefit: Reduced Manual Data Transfer Processes (Information Technology Services)

The VISION program will integrate a number of existing systems through a middleware. After deployment, manual processes currently used to import data to CIS from other systems (particularly the scheduling software) will be eliminated. This will result in a potential net savings of 1.5 FTE in the ITS department. 1.5 FTE over 20 years will free up labour with a value of $3 million.

Benefit: More Efficient Route Supervision (Divisional Supervisors)

Overall, surface operations are supported by 76 FTE of divisional supervisors (as of the CIS Way Forward Report), with each divisional supervisor managing 48 in-service vehicles. The CIS Way Forward Report projected that each divisional supervisor would manage approximately 96 in-service vehicles, or double the current number using the new system. This projection resulted in a potential reduction to 37.8 FTE staff managing service, and a net benefit of $75.6 million dollars over 20 years.

By comparison, transit agencies across North America with similar commercially available industry standard CAD/AVL systems in place typically have each divisional supervisors managing 80-120 in-service vehicles. Further investigation of potential benefits has indicated that TTC could reasonably progress towards each divisional supervisor managing up to 120 in-service vehicles. If this benefit were realized, it would reduce to 30 the total number of divisional supervisors FTE required for bus operations. This would increase these benefits to $91.2 million over 20 years.

Benefit: More Cost-Effective Operator and Vehicle Management (Yard Management)

With the current CIS, four employees per garage manage operator sign-in and assign vehicle parking locations at pull-in. The future Yard Management system will automatically provide operators directly with their instructions for both pull-out and pull-in, which will provide the potential to free up this yard management labour at minimum. There would be additional yard management benefits associated with labour freed up from staff that periodically walk the yard overnight to review parked bus locations, as well as for the corresponding benefits with the streetcar carhouses. The CIS Way Forward Study projected a net savings estimate of 37.2 FTE of labour, for a net savings of $74.5 million over a 20-year study period.

Further investigation of potential benefits indicates that the TTC will operate 8 bus garages and 3 streetcar carhouses in the near future. The result of this efficiency suggests that the Yard Management system will on this conservative assessment be expected to free up at least 44 FTE of labour. This would increase the value of this benefit to $88 million savings and cost avoidance.

Benefit: More Cost-Effective Transit Signal Priority (TSP)

A current TTC program fits selected intersections with TSP equipment, costing $1 million per route each year. The VISION program will provide an opportunity to terminate this program and instead interface with the City of Toronto Traffic Management System to enable TSP. This would avoid $20 million in costs over 20 years, with TSP available to every route.

Benefit: More Cost-Effective Customer Information

The VISION program will increase the amount of customer information, through providing real-time transit data feeds and collaborating with third-party application developers. The extent of this customer information, with the system architecture supported in-house, presents an opportunity to end the vendor contract. While not included in the CIS Way Forward study projections, the termination of this contract would avoid $600,000 per year, totalling $12 million over 20 years.

Additional Qualitative Organizational Benefits

This section discusses various additional benefits to TTC from the VISION Program that are expected to be of substantial value but not readily quantifiable.

Enhanced Customer Service

The TTC has a focus on delivering excellent customer service, and the VISION Program supports this initiative by making schedule and real-time data available to customers through a number of standardized means. Customers will be able to get real-time information about bus and streetcar locations and status via methods including the mobile website, text alerts, and mobile applications. While the existing CIS supports some of these features, the level and sophistication of data that will be available to the customer will far exceed the current deployment. The customer information will be consistent regardless of how the customer receives it. In addition, TTC system notices will be able to be provided onboard any surface vehicle, and broadcast as text alerts through the website or mobile applications. This will alert customers as quickly as possible to service changes. The resulting suite of customer-facing services will increase customer satisfaction and TTC's reputation.

More Cost-Effective Maintenance

The VISION Program includes a vehicle diagnostics and maintenance alerts system that can monitor a number of engine and powertrain indicators for underlying mechanical issues, low oil, and many others. The system will automatically assign maintenance work orders early enough to more often fix the problem before a vehicle breakdown. This will also enable more targeted and proactive preventative maintenance, to decrease the total miles between and cost of breakdowns. This active vehicle diagnostics system, coupled with onboard VISION system components being easy to replace while the systems are in operation and repaired by the manufacturer, will decrease out-of-service hours. This benefit is difficult to quantify, as it will depend heavily on the fleet condition and preventative maintenance program comprehensiveness, but this will be an opportunity to realize significant benefits.

Improved Operator Performance Management and Support

The VISION Program includes an Operator Performance Management and Support system. This will monitor and report on incidents of excessive idling and heavy acceleration/stops/turns, to provide feedback for operators and management. This information will present an opportunity for numerous benefits in fuel savings, maintenance savings, and reduced claims. The exact benefit realized will depend largely on existing operator behaviour.

Enhanced Performance Data Monitoring

The VISION system will have robust data capabilities far in excess of the current CIS system. Once deployed, more KPI's and other targeted information will be available. From these, reports can be immediately generated. Data analytics will be available to help find opportunities for operational efficiencies not otherwise immediately evident to management. There will be many opportunities to improve service and reduce costs. Further, this system will gather actual running times data for use to optimize the results from TTC scheduling software.

More Effective Onboard Video Monitoring

Integration of all onboard devices is a key component of the VISION system. Integration of the onboard video equipment will enable investigating onboard incidents quickly, with all bus systems time-synchronized. This integration and synchronization will help reduce the cost of claims and link video data and system data together to provide additional context for investigations.

KEY DELIVERABLES AND BENEFITS OF THE VISION PROGRAM

Control Centre Operations Management Tools

- Improved monitoring of service to identify delays
  - Headway adherence for streetcar and higher-frequency bus routes
  - Schedule adherence for lower-frequency bus routes
  - Real-time dashboards to track overall service performance and open up additional details when needed
- Expedite service adjustments made in response to delays (e.g. change offs, short turns, add/remove service)
- Effective detour management functions
- Transfer connection protection for blue night services
- Emergency management functions
  - Integration with operator covert alarm
  - Security events trigger highest-priority system response
  - Integration with on-board camera system
  - Enable co-ordinated response between central control, on-street supervisors and first responders
- Upgrade to TETRA (new TTC voice/data radio system) and LTE (current generation commercial cellular voice/data) communications

Benefits include:

- *Enhanced dispatch and control capabilities*

- *Improved on-time performance and reliability*

- *Improved safety and security*

On-Street Operations Management Tools

- Runs on standard field-ruggedized tablets integrated and synchronized with the Control Centre Operations Management Tools
- Monitor service from on-street and receive automatic operations management alerts/notifications
- Adjust service to respond to on-street issues
- Complete and submit incident forms from the field

Benefits include:

- *Improved coordination between control centre and on-street supervisors*

Onboard Components

- Modern colour touch-screen ("Mobile Data Terminal") for interface with operators

- Enhanced voice and text communications channels for supervisor support when required
- Vehicle On-Board Computer that monitors and responds to current service status:
  - Informs operator using the Mobile Data Terminal if late or early, to enable autonomy and improved performance
  - Updates customers on detours and broader service issues
  - Activates Transit Signal Priority (TSP) if delayed
  - Informs Control Centre of detected vehicle health alerts

Benefits include:

- *Improved service performance*

- *Improved operator satisfaction*

Yard Management System

- Sensors at all divisions and car-houses to automatically identify where vehicles are parked
- Automatically assign parking spots at vehicle pull-in, according to asset utilization and next-day service requirements

Benefits include:

- *Improved asset utilization*

- *Improved Process Efficiencies*

Vehicle Health Monitoring

- Monitor vehicle health alerts while in-service to manage for minimized and least disruptive change-offs
- Collect and analyze significant detail about vehicle health to improve overall fleet utilization
- Interface with TTC's IFS maintenance management system to automatically generate work orders and schedule preventative maintenance

Benefits include:

- *Reduced change-offs and associated service delays*

Operator Workflow Automation

- Sign-in kiosks at divisions to inform operators on pull-out vehicle assignment and updates/notices
- Yard management solution identifies vehicle location to the operator
- Circle check completed electronically on vehicle before pull-out, to automate submission and tracking of issues
- Parking direction via Mobile Data Terminal at pull-in to yard

Benefits include:

- *Improved Process Efficiency*

Operator Performance Management and Support

- Enhanced vehicle sensors to log:
  - Heavy acceleration/braking
  - Abrupt lane changes/turning
  - Speeding
  - Excessive revving and idling of engines
- Direct operator feedback to promote safe and effective driving
- Analytics reporting to identify persistent issues for training opportunities

Benefits include:

- *Improved driving safety*

- *Reduced fuel consumption*

- *Reduced vehicle maintenance*

Customer Information about Current Operations Status

- Initial integration to current provider, for seamless transition to customers
- New responsive website and modern mobile device applications (iOS and Android) for current operations status information
- E-mail and text message alerts, about next vehicle predicted times at stops and service bulletins
- Open Data feed ("GTFS-realtime") to enable third-party development of additional website and mobile device applications

Benefits include:

- *Improved customer information*

- *Improved customer satisfaction*

Historical Reporting

- Analyze data to identify patterns and trends
- Generate standard and custom reports
- Data published to TTC's Enterprise Data Warehouse for further utilization
- Feedback on actual service running times to assist with future service scheduling

Benefits include:

- *Improved planning and analytics*

System Integration

- Data shared with other TTC software using adaptable connecting software under TTC control ("middleware")
    - Scheduling and Maintenance Systems
    - Customer and Operator Information
    - City of Toronto Traffic Signal Control System (for TSP)
    - City of Toronto Traffic Office
    - Enterprise Data Warehouse, with related capabilities to enable large scale analysis of cross-cutting organizational data ("big data")
    - PRESTO
- On-Board
    - Vehicle sensors and diagnostics
    - Speakers and signs (for route and stop announcements)
    - Automatic Passenger Counters
    - On-board camera system
    - Operator covert alarm

Benefits include:

- *Fewer manual processes to transfer data between different systems*

- *Synchronization between the various systems*

STAFF REPORT
ACTION REQUIRED

Procurement Authorization – Computer Aided Dispatch/Automatic Vehicle Location (CAD/AVL) System

Date:	January 21st, 2016
To:	TTC Board
From:	Chief Executive Officer

Summary

The purpose of this report is to obtain authorization for the award of Contract No C25PW15793 for the procurement of a Computer Aided Dispatch/Automatic Vehicle Location (CAD/AVL) System for the VISION (Vehicle Information System and Integrated Operations Network) Implementation Program to Clever Devices Canada ULC in the Total Contract Price amount of $77,415,304.98 (including HST) in Canadian funds, with a duration of 10 years from the execution of the contract, on the basis of highest total weighted score.

An allowance in the upset limit amount of $4,000,000.00 is recommended to be included in the amount to be approved by the Board to cover costs associated with options, changes and spares which will be issued as Contract Amendments in accordance with the Authorization for Expenditure Policy when required during the term of the contract.

Recommendations

It is recommended that the Board:

1. Authorize the award of Contract No. C25PW15793 for the Computer Aided Dispatch/Automatic Vehicle Location (CAD/AVL) System for the VISION (Vehicle Information System and Integrated Operations Network) Implementation Program to Clever Devices ULC in the Total Contract Price amount of $77,415,304.98 (including HST) in Canadian funds, with a duration of ten (10) years from the Contract Execution, on the basis of highest total weighted score;

2. Authorize an allowance in the upset limit amount of $4,000,000.00 to cover costs associated with options, changes and spares which will be issued as Contract Amendments in accordance with the Authorization for Expenditure Policy; and,

3. Authorize the Total Amount of $81,415,304.98 (including HST) for the procurement of the CAD/AVL System.

Financial Impact

Sufficient funds for the initial Capital Cost of $57,161,410.02 and first years maintenance are included in the Toronto Transit Commission's (TTC) 2015 – 2024 Capital Budget under the CAD/AVL System project, as noted on page numbers 955-957, as approved by the City of Toronto Council on March 10th/11th, 2015 for the project.

Submissions will be made in the future Operating Budget for the annual maintenance costs totaling $14,887,532.44 for the remaining nine (9) years of the contract period.

The contract will be administered based on the terms included in the Contract Documents.

The Chief Financial and Administration Officer has reviewed this report and agrees with the financial impact information.

Decision History

The subject matter of this report is in support of the TTC's Capital Program for the implementation of the CAD/AVL System as part of the TTC's current modernization efforts.

Issue Background

CAD/AVL Program

As part of ongoing modernization initiatives, the TTC will transform the way in which it manages its surface fleet of buses and streetcars by implementing a new CAD/AVL System through the newly renamed VISION (Vehicle Information System and Integrated Operations Network) Implementation Program supported by Organizational Change Management/Communications to implement new business processes to fully take advantage of the capabilities offered by the new system.

The TTC's current Communications and Information System (CIS) is a first generation CAD/AVL System providing: mobile communications; computer aided dispatch and automatic vehicle location services. The CIS system provides data and voice communications, connecting the bus and streetcar fleets with 11 Divisional Control Offices and the Transit Control Centre. The CIS is primarily used for life-safety, emergency response and co-ordination, route management as well as providing data feeds to support the Next Vehicle Arrival System and City of Toronto Open Data initiative:

(http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=9e56e03bb8d1e310Vgn VCM10000071d60f89RCRD).

The CIS System is based on technology that is over 30 years old, the operation of which has been extended through the State of Good Repair program.

As such, the current system has significant limitations including:

- *Hardware supply* – The original supplier for CIS' on-board TRUMP units is no longer in business, and the TTC cannibalizes and custom-builds units to maintain a sufficient working inventory;
- *Technology* – CIS has been refreshed over the past 30 years, but maintains a data architecture and technology that is dated by modern standards. The system is closed and integration to it is cumbersome and costly. Automatic Passenger Counters, Next Stop Announcements, On-board Camera System and Transit Signal Priority are not integrated to the CIS TRUMP resulting in missed synergies. Furthermore, there are many functions that modern day systems provide that CIS does not (further outlined below);
- *System administration* – Operating and administering CIS involves a fair amount of manual processes. As an example, ingesting TTC schedules, which must be done every board period, requires dedicated staffing. The data generated from the system is limited and difficult to access, also requiring dedicated staffing;
- *Communications* – CIS is considered a life-critical system to the TTC because it provides communication to the operator in the event of an emergency. CIS communicates using UHF radio technology and Bell Canada's CDMA cellular network. Bell has indicated that the CDMA network will be sunset as early as January 2017, resulting in a reduction in redundancy and reliability of the communications provided by CIS; and
- *Processes* – many aspects of TTC's operations are still manual due to the limited functionality of CIS as it compares to a modern system. Notably, operator workflow at sign-in is unsupported through the existing system. Similarly, yard management is completely manual. Also, many administrative tasks are manual – for example, updating vehicle next-stop announcements involves going to each vehicle with a USB stick as opposed to using the wireless LAN capabilities currently being implemented at the TTC's garages.

In 2012, the Commission engaged IBI Group through a competitive Request for Proposal (RFP) process to review the status of the current CIS System and develop a Way Forward Report that provided:

1) A strategy for renewal of transit technology systems with a 20-year outlook, in the context of total cost of ownership;

2) A technology direction that will meet the needs of the business; and,

3) Implementation and migration strategies to transition from the existing CIS to the new system, while maintaining the continuity of operations.

The Way Forward Report recommended that the TTC purchase and implement a new CAD/AVL System to deliver the required functionality to stay current with technology and leverage industry best practices to achieve the organization's goals and objectives. In addition to addressing CIS' gaps outlined above, a new CAD/AVL System would modernize the TTC, including providing the following high-value functions not presently available to the organization:

- *Enhanced dispatch and control* – Route Supervisors stationed in control rooms will have access to more accurate information about vehicle location and performance. They will automatically be notified for vehicles meeting certain exception thresholds (e.g. behind schedule more than 5 minutes, covert alarm activated, hot engine alarm). They will employ powerful service adjustment tools, not available in CIS, to enact changes to service – and critically, customer information will be disseminated accordingly.

- *Automated operator workflow* – Operators arriving to a division will use an automated kiosk to sign-in for work and receive their daily assignment, vehicle location and service notices (presently this is done manually). Rather than having to log onto multiple devices on the vehicle, the operator will tap their ID card and automatically be logged on. They will complete the circle check on the modern data terminal – relevant issues will automatically generate work orders for maintenance;

- *Yard management* – Today, TTC employees regularly walk the depots to capture where vehicles are parked and manually assign them to service. CAD/AVL will be capable of tracking vehicles within the depots and automatically use the maintenance schedules and service assignments to guide departing operators to vehicles and returning vehicles to parking spots;

- *Big data* – CIS generates heavy amounts of data that is difficult to process and consume. The CAD/AVL system will have built-in dashboards and reporting to support organizational KPI reporting as well as investigating trends and issues. Using modern data integration, CAD/AVL will feed performance data back to the scheduling system so as to optimize service schedules on an on-going basis. Similar integration of data will be achieved with TTC's Vehicle Maintenance (IFS) system to support improved vehicle maintenance and asset utilization; and

- *Improved customer information* – CAD/AVL will significantly improve the quality and avenues through which customers can access service information. First, data quality will be substantially increased due to more reliable vehicle communications as well as incorporation of service adjustments such as

detours. Secondly, new customer communication channels will become available:

- o Personalized next-vehicle e-mail notifications;
- o Mobile applications for iOS and Android devices;
- o Service alerts (such as those shown on TTC.ca) will automatically be announced on buses and streetcars; and
- o Open Data, in the form of GTFS-Realtime, will allow third party developers including Google to innovate in ways not yet envisioned, further broadening customer reach.

As a result of the recommendation of the Way Forward Report, the TTC put in place a program to acquire a new CAD/AVL System and to optimize/re-engineer business processes across the TTC to take advantage of the capabilities delivered by the new system under the VISION (Vehicle Information System and Integrated Operations Network) Implementation Program.

In 2014, a second contract was awarded to IBI Group, through a competitive RFP process to serve as Governance Consultant Advisors to the TTC CAD/AVL Program now the VISION (Vehicle Information System and Integrated Operations Network) Implementation Program. The three main components of this contract are consulting services to support:

1) Program Initiation and System Procurement
2) Proof of Concept and System Delivery
3) CAD/System Deployment to bus and street-car fleet

Comments

Procurement Process

In January 2015, the TTC issued a Request for Information (RFI) for a CAD/AVL System to gather information on the current capabilities of CAD/AVL Systems available within the market place and solicit feedback from CAD/AVL System vendors prior to finalizing the set of requirements to be published as part of the RFP for the CAD/AVL system. The TTC received 8 responses to the RFI, out of which 6 participated in the RFP process. The information provided in the responses was taken into consideration and a comprehensive scope of services was prepared and included as part of the RFP for the CAD/AVL system.

A RFP was publicly advertised on the MERX Web site as of June 11, 2015. Forty-nine companies downloaded copies of the proposal documents, out of which seven submitted a proposal by the closing date of September 10, 2015. It should be noted that out of the forty-nine companies that downloaded copies of the RFP, only seven were major CAD/AVL suppliers. The majority of the remaining companies downloaded the RFP documents for information purposes as they consisted of potential sub-contractors to the

seven major CAD/AVL suppliers. Six addenda were issued during the proposal period, which included updates to the RFP.

Evaluation Process

An Evaluation Team consisting of six (6) members, four (4) representing the Information Technology Services Department (ITS), one (1) member from the Bus Transportation Department, and one (1) from the Materials and Procurement Department, along with Subject Matter Experts from Bus Transportation Department, Bus Maintenance Department, Information Technology Services (ITS) Department, and from Strategy and Service Planning Department, evaluated the qualitative portion of the proposals in accordance with the criteria set out in the RFP and attached as Appendix A.

The recommendation for award is based on the highest total weighted score. The evaluation of proposals was based on a five stage, two envelope process consisting of both qualitative and pricing components as set out in the proposal documents. The evaluation criteria for each of the five stages of evaluation are summarized as follows:

1) Stage 1 – Commercial Compliancy - involved a commercial compliancy review of the contents of the Proposal submissions to assess its compliance with the terms and conditions of the Proposal Documents, including whether all documents required to be submitted have been appropriately submitted. Proponents must meet the requirements of Stage 1 in order to continue to Stage 2 of the evaluation.

2) Stage 2 – Technical Evaluation – consisted of a qualitative technical evaluation based on the pre-established evaluation criteria and weighting. Proponents were required to achieve a total minimum of 49 points out of the maximum 70 points available for this Stage 2 in order to be considered qualified to move onto Stage 3 and 4 of the evaluation process. This stage included the evaluation of any proposed variations by the Proponent to the Master Services Agreement (MSA) and Statements of Work (SOW) documents that were included in the RFP.

3) Stage 3 – Demonstration Evaluation – consisted of a technical evaluation of demonstration scenarios based on pre-established evaluation criteria and weighting. Proponents were scored out of a maximum 5 points available for this Stage 3.

4) Stage 4 – Pricing Evaluation - Pricing information was required to be submitted in a separate sealed envelope which would only be opened upon the successful completion of Steps 1 through 3 described above. Proponents were scored out of a maximum of 25 points available for this Stage 4 allocated as follows:

   a. 24.5 points for the Grand Total for the Core System
   b. 0.5 points for the Composite All-Inclusive Blended Hourly Billing Rate

5) Stage 5 – Contract Negotiation - The total weighted score was calculated as a sum of the weighted qualitative score and the weighted pricing score from Stages 2 to Stage 4. The Proponent with the highest total weighted score would be selected to enter into negotiations with TTC. During negotiations, only those items where the Proponent had submitted proposed variations to the MSA and SOW would be discussed. Where the Proponent had not marked-up a term or condition of the MSA and SOW, the Proponent was deemed to have agreed to the term, condition or requirements as proposed by TTC.

Results

All Proposals received were reviewed for commercial compliancy during Stage 1 and all proposals that were compliant were rated by the evaluation team. All seven Proponents met the requirements of Stage 1 and continued to Stage 2 of the evaluation process.

Submissions from the following companies were received:
1. Clever Devices Canada ULC
2. INEO Systrans Inc.
3. INIT Innovations in Transportation Inc.
4. Scheidt and Bachmann Canada Inc.,
5. Strategic Mapping Inc.
6. Trapeze Group, and
7. Xerox Business Solutions Canada Inc.

Clever Devices Canada ULC, INEO Systrans, INIT Inc., Scheidt and Bachmann Canada Inc., Trapeze Group, and Xerox Transport Solutions Inc., met the requirements of Stage 2 and continued to Stages 3 and 4 of the evaluation process. One company, Strategic Mapping Inc., failed to meet the requirements of Stage 2 and was not evaluated further.

Clever Devices Canada ULC had the highest total weighted score and was selected to move onto Stage 5 of the evaluation process. During negotiations with Clever Devices Canada ULC, the major points of discussion centred on price, schedule, and milestone payments. TTC was able to reach an acceptable agreement on all points as well as a cost avoidance of $2.5 million, which is a reduction to the initial Grand Total pricing submitted by Clever Devices ULC.

Clever Devices Canada ULC had the highest total weighted score, came to an acceptable agreement with significant cost savings with the TTC, and is therefore recommended for award of the contract.

Clever Devices Canada ULC has not previously worked for the TTC therefore, reference check and a site visit was completed by TTC staff at Washington Metropolitan Area Transit Authority (Washington DC), which indicated that they have satisfactorily performed work of a similar size and nature in the past.

A Fairness Monitor, Veronica Bila of MNP LLP, was retained by the Commission to provide an independent third party observation to ensure that the procurement process

took place in accordance with the requirements established as set out in the RFP and to ensure fairness and transparency during this process. The final report provided by MNP LLP (Appendix B) confirms the fairness of the process based on their observations.

TTC CAD/AVL Program

TTC will support Clever Devices Canada ULC's design process by providing input and review of all design drawings and documentation. TTC representatives will oversee and sign off on formal testing to ensure that the system delivered is of high-quality and meets the full intent of the RFP. Other elements of the TTC CAD/AVL program outside of the scope of this procurement are:

- Hardware installations – TTC staff will be responsible for installing the Clever Devices hardware according to manufacturer direction on all vehicles and depots;
- Interface development – TTC will build a modern software "middleware" to interface with the vendor system;
- Central system hardware supply – TTC will leverage existing vendor relationships to secure servers, workstations and other necessary hardware;
- Business process optimization – TTC recognizes the opportunity to use technology to transform operations and as such, has begun to analyze, optimize, and where necessary, re-engineer business processes across the organization;
- Change management – In line with the business process optimization activities, TTC will evaluate impact on roles and responsibilities of key staff; and
- Training – Clever Devices will be responsible for training TTC trainers, who will in turn roll out the system training across the organization.

Contact

Anthony Iannucci
Head – Information Technology Services
Phone: 416-393-3565
Email: Anthony.Iannucci@ttc.ca

Jim W. Lee
Head – Materials & Procurement
Phone: 416-393-3113
Email: Jim.Lee@ttc.ca

Attachments

Appendix A – Proposal Evaluation Criteria
Appendix B – Fairness Monitor Report

APPENDIX A

PROPOSAL EVALUATION CRITERIA

Contract Title: Supply of CAD/AVL System and Implementation Services

Proposal No.:   P25PW15793

A. CORPORATE QUALIFICATIONS
- Background and Capabilities
- Number of Years in Business
- Depth of Proposed Available Resources at Proponent's Office, by Discipline

B. PROJECT TEAM QUALIFICATIONS/EXPERIENCE
- Number of Years Related Working Experience
- Number of Years of Direct Experience
- Technical Qualifications
- Capsule CV Description / Relevant Experience by Project

C. DETAILED REQUIREMENTS SUMMARY
- Functional Requirements
- Communications
- Engineering and Design
- Implementation
- Quality Assurance
- Warranty Support
- MSA

D. PRESENTATIONS / DEMONSTRATIONS
- Demonstration

MNP

Fairness Opinion for the Toronto Transit Commission

Supply of CAD/AVL System and Implementation Services

Request for Proposal No. P25PW15793

December 15, 2015

PREPARED BY:
MNP LLP
300 - 111 Richmond Street West
Toronto, ON M5H 2G4

MNP CONTACT:
Geoff Rodrigues, CPA, CA, CIA, CRMA, ORMP
Partner, Enterprise Risk Services

PHONE: 416-515-3800
FAX: 416-596-7894
EMAIL: geoff.rodrigues@mnp.ca

ACCOUNTING > CONSULTING > TAX

December 15, 2015

Anthony Clunies, Project Manager
Toronto Transit Commission
5 Park Home Avenue, Suite 300
Toronto, ON M2N 6L4

Justin Lau, Senior Contract Administrator
Project Procurement, Materials & Procurement Department
Toronto Transit Commission
5 Park Home Avenue, Suite 300
Toronto, ON M2N 6L4

RE: Fairness Opinion of RFP No. P25PW15793 – Supply of CAD/AVL System and Implementation Services Procurement Process

Introduction

MNP LLP ("MNP" or "We") have been appointed by the Toronto Transit Commission ("the TTC") as Fairness Monitor to oversee the procurement process for Request for Proposal ("RFP") No. P25PW15793 for the Supply of a CAD/AVL System and Implementation Services ("the Project"). As Fairness Monitor, we are an independent and impartial third party whose role is to observe and monitor the procurement process to ensure the openness, fairness, consistency and transparency of the process. The procurement process includes communication, evaluation and decision-making associated with the project.

The Project is for the provision of a computer aided dispatch and automated vehicle location ("CAD/AVL") system, and related implementation, hardware supply and certain ongoing support services. The Project is for services and deliverables with respect to the following key features of the CAD/AVL System for bus and streetcar operations: Robust life-safety TETRA radio and cellular communication system (voice and data); CAD/AVL and route management tools; Real-time predictions of arrivals and departures at stops for customers; Vehicle location information to third parties through a real-time data feed; Automatic vehicle health monitoring and condition reporting to support maintenance; Historical reporting of service performance; Integration with TTC Enterprise Data system for service level reporting and dashboards; Integration with TTC's IFS (maintenance management system); On-board Automatic Passenger Count integration; and a Yard management system.

The TTC utilized a two-stage approach for the procurement of the Project. A Request for Information ("RFI") process was completed to obtain market and industry research. The information that was gathered from the RFI process was incorporated into the RFP.

MNP was appointed as Fairness Monitor subsequent to the RFI process and monitored the RFP procurement process only.

Limitations and Disclosure

We have limited the scope of our work to documents provided by the TTC and are not providing an opinion on the accuracy of the information contained within. In addition, MNP was not involved with the development or review of the project's scope of work.

We do not assume any responsibility or liability for losses incurred by any party as a result of the use of our work. We reserve the right (but will be under no obligation) to review all information included or referred to in this Fairness Opinion and, if we consider necessary, to revise same in light of any facts which become known to us subsequent to the date of presentation of same.

RFP Procurement Process

The RFP procurement process was comprised of the following steps:

- Development of the RFP, including detailed project requirements and specifications, mandatory and rated criteria, evaluation process and weightings.

- Issuance of the RFP on the MERX website.

- Non-mandatory Pre-Evaluation Site Visits held to explain the RFP evaluation and selection process to proponents and to visit bus and streetcar garages.

- Issuance of six addendums and five question and answer documents.

- Establishment of the Evaluation Team.

- Training of the Evaluation Team on the technical and demonstration evaluation process and guidelines by the Senior Contract Administrator.

- Evaluation of RFP proposal submissions received by seven proponents, including evaluation of mandatory commercial submission requirements (pass/fail), rated technical criteria, mark-up of the Master Service Agreement, and demonstrations.

- Evaluation of price proposal submissions.

During the entire procurement process, the Senior Contract Administrator (Project Procurement, Materials & Procurement Department) was involved to ensure that the procurement process and the RFP evaluation and selection criteria were adhered to.

Fairness Monitoring Principles

The following are the fairness monitoring principles that have been applied in our approach to fairness monitoring of the RFP procurement process:

- Proponents have the same opportunity made available to them to access project information.

- The information made available to proponents is sufficient to ensure that each proponent has the full information of the nature of the services sought under the RFP process.

- The criteria established in the RFP documents truly reflect the needs and objectives in respect of the services and work to be provided.

- The evaluation criteria and evaluation process are established prior to the evaluation of submissions.

- The evaluation criteria, RFP and evaluation process are internally consistent and in accordance with the organization's procurement policies and procedures.

- The pre-established evaluation criteria and evaluation process are followed.

- The evaluation criteria and evaluation process are consistently applied to all proponent submissions and presentations.

Scope of Review

In preparing our fairness opinion, we have reviewed, and where applicable, relied upon, the following information and documents:

1. City of Toronto Purchasing By-law, Chapter 195.

2. City of Toronto Financial Control By-law, Chapter 71.

3. TTC Procurement Policy.

4. TTC Conflict of Interest Policy.

5. RFI No. R25PW15721, including RFI addendum and question and answer documents.

6. RFP No. P25PW15793 dated June 11, 2015.

7. RFP Addendum #1 to #6 issued July 27, August 11, August 13, August 20, August 27 and September 3, 2015.

8. Question and Answer documents #1 to #5 issued July 6, July 27, August 11, August 20 and August 31, 2015.

9. Pre-Evaluation Meeting Presentation dated July 8, 2015.

10. Pre-Evaluation Meeting Minutes dated July 27, 2015 and revised Meeting Minutes dated August 11, 2015.

11. Evaluation Training Presentation dated September 17, 2015.

12. RFP Evaluation Scoring Template.

13. Listing of proposal submissions received and evaluation of the Mandatory Commercial Submission Requirements by the Materials and Procurement Department.

14. Evaluation Team member signed Conflict of Interest Declarations.

15. Consensus Evaluation Scoring of short-listed proponents eligible to proceed to demonstration evaluation.

16. Notification letters to short-listed proponents.

17. Demonstration Evaluation Scoring Template and Guideline.

18. Final Consensus Evaluation Scoring containing scoring of the rated technical criteria and price, ranking all proponents.

<u>Fairness Approach</u>

Our role as Fairness Monitor consisted of observing and monitoring the procurement process utilized by the TTC in order to ensure the openness, fairness, consistency and transparency of the communication, evaluation and decision-making processes. Specifically, our responsibilities were to:

1. Review and understand the TTC's procurement policies, processes and procedures.

2. Review various documents and information, such as the RFP documents, addendum and any correspondence between the TTC and the proponents.

3. Review the evaluation criteria with respect to clarity and consistency.

4. Attend the pre-evaluation meeting and site visits.

5. Observe and monitor the technical, presentation and price evaluation team meetings in the capacity of Fairness Monitor to ensure the procurement process was conducted according to the criteria as set out in the RFP and that the evaluation team conducts itself in an appropriate manner and free from conflict of interest.

6. Identify situations and issues which may compromise the evaluation process and which may result in complaints about the procurement process, and provide advice on resolving complaints.

7. Review final evaluation results for overall fairness and process integrity, including ensuring evaluation methodology was adhered to.

8. Prepare a report describing the procurement process followed, including an opinion on the fairness of the procurement document and evaluations.

9. Provide advice and assistance when requested.

10. Attendance at debriefing meetings when requested.

<u>RFP Proposal Submissions</u>

The RFP was issued on Merx on June 11, 2015 and was downloaded by 42 companies. Prior to the RFP closing date of September 10, 2015, proponents were permitted to submit clarifications and questions, which resulted in the TTC issuing six addendums and five question and answer documents. In addition, the TTC held a non-mandatory Pre-Evaluation Meeting and Site Visit on July 8 and 9, 2015 to explain the RFP evaluation and selection process to proponents and to visit select bus and streetcar garages.

The Evaluation Team was selected, consisting of five core team members and six subject matter experts. The Senior Contract Administrator conducted training for the full Evaluation Team explaining the evaluation process, criteria, scoring template and rating methodology as described in the RFP. Each member of the

Evaluation Team signed a conflict of interest declaration, stating that no conflicts were identified with the proponents who submitted proposals.

Upon RFP closing, the TTC received seven proposal submissions. The Commission Services Department assessed the seven submissions to determine proponents' adherence to the Mandatory Requirements and completeness of the submissions. All seven proponents passed the mandatory requirement evaluation.

Consensus scoring evaluations of the technical requirements took place from October 1 to 14, 2015 for all seven proponent submissions. Upon completion of this consensus scoring, six proponents scored the minimum percentage points and were considered qualified to proceed to the demonstration evaluation stage. Demonstrations took place October 29 and 30, and from November 3 to 6, 2015. The Senior Contract Administrator conducted training for the Evaluation Team explaining the scoring for the demonstrations prior to the proponent demonstrations taking place.
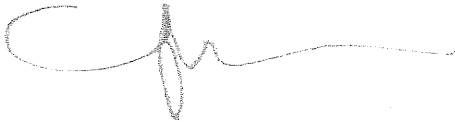
The pricing proposals were obtained from the Commission Services Department and the six qualified proponents' pricing proposals were opened by the Senior Contract Administrator on November 10, 2015. The pricing evaluations were completed and the overall ranking of the proponents was determined. The TTC entered contract negotiations with the highest ranking proponent, as outlined in the RFP.

Fairness Conclusion

Based on the information and documents reviewed, meetings attended and observed, and discussions with the Evaluation Team and the Senior Contract Administrator, the procurement process for RFP No. P25PW15793 has been open and fair, and in accordance with the TTC procurement policy and the evaluation process methodology, criteria, scoring and weighting within the RFP.

Yours truly,

MNP LLP

Geoff Rodrigues, CPA, CA, CIA, CRMA, ORMP
Partner, Enterprise Risk Services

ABOUT MNP

MNP is one of the largest chartered accountancy and business consulting firms in Canada, with offices in urban and rural centres across the country positioned to serve you better. Working with local team members, you have access to our national network of professionals as well as strategic local insight to help you meet the challenges you face every day and realize what's possible.

Visit us at MNP.ca

Best Employers in Canada
By Aon Hewitt

Wherever business takes you. MNP

Praxity MEMBER
GLOBAL ALLIANCE OF INDEPENDENT FIRMS