



CITY OF HAMILTON
PUBLIC WORKS DEPARTMENT
Corporate Assets & Strategic Planning Division

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	September 19, 2016
SUBJECT/REPORT NO:	Standardization of Traffic Collision Software and Digital Collision Data Services (PW16082) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	David Ferguson, C.E.T. Superintendent, Traffic Engineering 905-546-2424, Extension 2433 Martin White, C.E.T. Manager, Traffic Operations and Engineering 905-546-2424, Extension 4345
SUBMITTED BY:	Tom Chessman Acting Director, Energy, Fleet & Traffic Public Works
SIGNATURE:	

RECOMMENDATION

- (a) That TES Information Technology Limited (TES) be approved as the single source supplier for the supply, installation, operation and quality control of the City of Hamilton’s Traffic Collision Software and Analysis System for a period of five (5) years in accordance with the City of Hamilton’s Procurement Policy #14 – Standardization;
- (b) That Accident Support Services International Limited (ASSIL) be approved as the single source supplier of all digital collision data to the City of Hamilton for a period of five (5) years in accordance with the City of Hamilton’s Procurement Policy #14 – Standardization;
- (c) That recommendations (a) and (b) above be funded from the Red Light Camera Reserve Fund (112203); and
- (d) That the General Manager of Public Works or their designate be authorized and directed to negotiate all prices, quantities, terms and conditions with the identified single source suppliers in a form satisfactory to the City Solicitor.

EXECUTIVE SUMMARY

The Hamilton Strategic Road Safety Program for 2016 – Item 7.0 New Collision System Software Upgrade and Collision Reporting (PW16027/April 4, 2016 - Hamilton Strategic

SUBJECT: Standardization of Traffic Collision Software and Digital Collision Data Services (PW16082) (City Wide) - Page 2 of 7

Road Safety Program Update), identified the need to replace and upgrade the City of Hamilton's outdated collision software program and make further improvements to the City's collision reporting capabilities. The report recommended that the City research and purchase a state of the art software for collision record processing.

The City of Hamilton's current collision software has been in operation since 1999. The system is very labour intensive (each collision has to be individually keyed into the system) and data extraction and collision reporting summaries are cumbersome and have to be conducted by a dedicated staff member. This system is outdated and we are unable to obtain technical support for the program.

Traffic Operations and Engineering staff working with the Corporate Services, Information Technology Division and the Public Works, Information Technology Technical Committee completed a detailed evaluation process and tested several collision software products. Hamilton Police Services were also consulted throughout the process.

The City of Hamilton processes between 3,000 and 4,000 motor vehicle collision reports on an annual basis. These reports are required for Hamilton Police Services and Traffic collision investigations and statistical analysis. The new software will provide analytical tools such as; GIS map based information, collision reports, intersection and mid-block collision diagrams and problem area analysis. The new collision software can also be installed on any desktop for ease of access by all Traffic Operations and Engineering technical staff (no longer one dedicated staff person) as well as Hamilton Police Services. The new collision software will also enable staff to quickly and easily run statistical collision reports and to produce an annual Traffic Safety Status Collision Report, summarizing collision statistics within the City of Hamilton and for comparing the City's statistics to other municipalities. It is an important tool for measuring and monitoring collision rate reductions in the City of Hamilton and for the ongoing development of safety initiatives through the Hamilton Strategic Road Safety Program.

Staff completed an evaluation of four (4) software programs that provide motor vehicle collision analysis software or services. The software reviewed by staff were: Midwestern Software Solutions LLC (MS2), Intersection Magic (the City's current software), Accident Support Services International Limited (ASSIL) and TES Information Technology Limited (TES). Through this evaluation, it was determined that TES was the only software that can support the full range of the City's requirements for motor vehicle collision storage and retrieval and can generate a number of specified collision reports based on various criteria including network screening. The TES software would also allow staff to perform traffic engineering collision analysis required to work towards improving and raising awareness of traffic roadway safety in the City of Hamilton. The TES software is currently utilized by the Ministry of Transportation (MTO) and several other Ontario municipalities. Staff concluded that TES is the only software package able to conduct traffic engineering collision analysis needed to meet the City of Hamilton's requirements. TES was also identified as the lowest cost option. Staff recommends that TES be approved as the single source supplier for the supply,

OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

SUBJECT: Standardization of Traffic Collision Software and Digital Collision Data Services (PW16082) (City Wide) - Page 3 of 7

installation and operation of the City of Hamilton's Traffic Collision Software and Analysis System for a period of five (5) years (up until December 31, 2021). The initial cost estimates for the TES system, including the download of historical collision data is estimated at \$90,700 with annual fee's estimated at \$10,800.

Staff further recommends that Accident Support Services International Limited (ASSIL) also be approved as the City of Hamilton's supplier of all digital collision data for Traffic. ASSIL currently completes the electronic digitization of all motor vehicle collisions that occur in the City of Hamilton for the Hamilton Police Services. This work is completed as a result of the required Provincial mandate for all Police forces to provide all collisions in digital form to the Province of Ontario, on a monthly basis. ASSIL has proprietary rights to provincial motor vehicle collision data, and it was identified that the City of Hamilton could purchase this digitized data and transfer it directly to the TES software rather than manually inputting (typing) the data into a computer system as is the required practice today. ASSIL also owns over 10 years of Hamilton's digital motor vehicle collision data and this will allow the City to procure and import the data directly into the new TES Collision Software system, providing immediate access to historic collision data. The initial or one-time cost to provide 10 years of historical data is estimated at \$54,000. Annual costs thereafter for digital collision data is estimated at approximately \$5,400.

Funding for the recommended new Traffic Collision Software System and Digital Collision Data Services would be provided from the Red Light Camera Reserve Fund (112203).

Alternatives for Consideration – See Page 6

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: TES Collision Software Cost Estimates

- Initial Cost \$ 40,700
- Quality Control and Digital Conversion 10 Year Historical Data \$ 50,000
- Annual Maintenance & Technical Support \$ 5,800
- Quality Control of Data (Annual Cost) \$ 5,000

ASSIL Digital Collision Data Collection Services Estimates

- Provide 10 Year Historical Data \$ 54,000
- Annual Digital Collision Data \$ 5,400

Combined Total Cost Estimates

- Initial costs \$144,700
- Annual Processing & Licensing Fee's \$ 16,200

SUBJECT: Standardization of Traffic Collision Software and Digital Collision Data Services (PW16082) (City Wide) - Page 4 of 7

All costs associated with this safety program will be funded from the Red Light Camera Reserve Fund (112203).

Staffing: There are no additional staffing implications involved with the approval of this report. As identified, there is 1 current fte dedicated to the input of motor vehicle collision data into the system. This position and the operation of Intersection Magic will proceed concurrently for 1 year and as the TES program is brought online.

Legal: There are no Legal implications.

HISTORICAL BACKGROUND

The City of Hamilton's current collision software program in use today is called Intersection Magic Collision Software. It was implemented in the City of Hamilton approximately 17 years ago. The system is very labour intensive (each collision has to be individually keyed into the system) and data extraction and collision reporting summaries are cumbersome and have to be conducted by a dedicated staff member. Due to the age of the system, the technology is unsupported software and the vendor no longer provides technical support.

With the increasing priority of Traffic Roadway Safety in the City of Hamilton, it was identified by the Hamilton Strategic Road Safety Committee that a new collision software program was a top priority. Staff began reviewing and investigating various collision programs in 2015.

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

No Policy implications with this report.

RELEVANT CONSULTATION

Corporate Services - Information Technology Division

Public Works - Information Technology Technical Committee

Hamilton Police Services

Hamilton Strategic Road Safety Committee

ANALYSIS AND RATIONALE FOR RECOMMENDATION

With the increasing priority of Traffic Roadway Safety in the City of Hamilton, it was identified by the Hamilton Strategic Road Safety Committee that a new collision software program was a top priority. Staff began reviewing and investigating various collision programs in 2015 and the following assessment of all available software was completed.

Midwestern Software Solutions LLC (MS2)

Extensive analysis and testing was completed on this program. MS2 is currently being used by Corridor Management to compile Traffic Volume information, however a review of the program identified it was not compatible with the Provincial Motor Vehicle Collision Reports and was not compatible for Digital downloads of collision data. It was

OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

SUBJECT: Standardization of Traffic Collision Software and Digital Collision Data Services (PW16082) (City Wide) - Page 5 of 7

deemed to be unsuitable for use in Hamilton at this time. In order to bring this program up to standard, extensive additional development costs to the municipality would be incurred.

Intersection Magic

Intersection Magic is the current program utilized in the City of Hamilton. The program is outdated and labour intensive to input, extract and analyse data. The program does not provide any internal analysis functions (click and report) to easily compile and report. Intersection Magic also requires a dedicated operator and issues have arisen with unreliable data being outputted from multiple desktops. In addition, due to age of the program, the vendor no longer provides technical support for the program and it is not compatible for digital collision data transfer. Further investigation into newer versions of software identified that the program could provide a more modern version, however it does not provide Safety Performance Function analyses and Network Screening capabilities. To complete this type of analysis, it would still require a labour intensive approach to extract data from the system and a dedicated staff member would need to extrapolate the data to produce a form that was suitable.

Accident Support Services International Limited (ASSIL)

Through discussions with the Hamilton Strategic Road Safety Committee, which includes Hamilton Police Services, staff reviewed and met with the vendor to complete the digitization process of all police collision reports as mandated and required by the Ministry of Transportation. ASSIL currently completes all collision digitization for Hamilton Police Services and inputs the information into an in-house database utilized by Hamilton Police Services to track incidents. This program is more of an information batch data program and doesn't allow for collision safety analysis, collision counter measure analysis, safety performance review and data extraction and reporting that will be required from an engineering collision countermeasure perspective and does not provide annual engineering reporting requirements. It was deemed to be unsuitable as a collision software product. However, it is recommended as the supplier of all digital collision data for Traffic.

TES Information Technology Limited (TES)

This software is currently the industry standard for collision software programs and is utilized by numerous Ontario municipalities for collision recording and analysis. This software is currently in use in the following jurisdictions: Ministry of Transportation, Ottawa, Niagara Falls, Niagara Region, Guelph, Brampton, York Region, Simcoe, Oakville, Welland, Cambridge, Burlington, Richmond Hill, Markham, Ajax, Chatham Kent, Brantford, County of Brant, Halton Region, Peel Region, London, Milton and Sarnia.

Extensive review, analysis and meetings have been completed on these software programs and as a result, it was identified that TES Information Technology Limited was the leading collision software in the Industry and utilized by numerous municipalities and

OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

the Province. Through the analysis and discussions with other municipalities, it became apparent that there were other advantages available to utilizing TES. Further investigation revealed that the TES program provides digital collision data compatibility with ASSIL e-collision data. ASSIL owns and operates most of the provinces collision data reporting systems used by the various Police Services to provide digital collision data to the MTO. In discussions with both TES and ASSIL, it was determined that data quality control analysis can be conducted by TES to meet the traffic safety analysis needs of staff and to upload the ASSIL collision data for the City of Hamilton at a cost. This process is currently being completed by a number of other organizations.

In 2015 Traffic procured a test version of the TES program and in conjunction with Information Technology (IT) loaded it on the City of Hamilton servers. The program has been thoroughly tested for the past year and has successfully been used to store, compile and extract collision information meeting current engineering standards and requirements. It was determined that TES will support the full package for motor vehicle collision storage and retrieval and as well can generate a number of specified collision reports based on various criteria including network screening. This program allows staff to perform the required traffic engineering collision analysis to work towards improving and raising awareness of traffic roadway safety in the City of Hamilton. Traffic Operations and Engineering staff met with TES staff several times during the operation of the demonstration and received consistent logistical support and program support on the software. Digital collision data can be transferred from ASSIL to TES without physical data entry occurring.

This report recommends TES Information Technology Limited software be purchased as a standard, to professionally store collision data and analyze collision statistics and trends in the City of Hamilton and to improve traffic safety issues to meet the objectives of the Hamilton Strategic Road Safety Program and the principles of Vision Zero.

ALTERNATIVES FOR CONSIDERATION

The City of Hamilton may consider not upgrading the Intersection Magic collision software program and continue to operate this current outdated program. The program is outdated and requires labour intensive input and quality control of data. It does not provide the traffic safety analysis tools that are required by current Traffic Engineering practices from a state-of-the-art program. Intersection Magic will continue to be unsupported and does not have the ability to provide digital data input capabilities. Continued use of this program fails to meet the needs of Traffic Engineering staff and the road safety mandate of the Hamilton Strategic Road Safety Program.

ALIGNMENT TO THE 2016 – 2025 STRATEGIC PLAN

Healthy and Safe Communities

Hamilton is a safe and supportive city where people are active, healthy, and have a high quality of life.

OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

Built Environment and Infrastructure

Hamilton is supported by state of the art infrastructure, transportation options, buildings and public spaces that create a dynamic City.

Our People and Performance

Hamiltonians have a high level of trust and confidence in their City government.

APPENDICES AND SCHEDULES ATTACHED

None

OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.