



CITY OF HAMILTON

COMMUNITY AND EMERGENCY SERVICES DEPARTMENT
Hamilton Fire Department

TO: Chair and Members Emergency & Community Services Committee	WARD(S) AFFECTED: CITY WIDE
COMMITTEE DATE: July 10, 2013	
SUBJECT/REPORT NO: Corporate Trunked Radio Upgrade Project - Update (CS13034) (City Wide)	
SUBMITTED BY: Joe-Anne Priel General Manager Community and Emergency Services Department	PREPARED BY: Phil Thorburn (905) 546-2424 Ext 7120
SIGNATURE:	

RECOMMENDATION

That an additional \$901,300 be budgeted towards the Corporate Trunked Radio Upgrade Project, to be funded from the Radio Communication Systems Maintenance Reserve Account #100032.

EXECUTIVE SUMMARY

The multi-year upgrade project of the City's Trunked Radio System which was initiated in 2008 is nearing completion. The scope of the project was to change out end-of-life radio infrastructure and subscriber equipment that is used to support mission critical communications for the Hamilton Police Service, Hamilton Fire Department and the Public Works Department. The new trunked radio infrastructure upgrade will enhance the overall system functionality, as well as improve coverage throughout the City,

improve interoperability amongst agencies and neighbouring municipalities and allow for over the air encryption of two-way voice radio communications.

In June 2012, the two-way voice services portion of the new system was commissioned which allowed for the transferring over of Police and Fire radio traffic with zero interruption in street level service. The balance of the City users were moved over in September 2012. The new system has performed flawlessly and has provided solid uninterrupted communications service since going live. Currently Police and Fire are completing the rollout of the data services portion of the new system that will be used to provide reliable secure communications to mobile data terminals in both Police and Fire vehicles.

The overall project was budgeted at \$23,314,000. The project financing has been addressed through a combination of established corporate radio reserves, as well as a debt financing model which has been covered from within the existing operating budgets for the corporate radio program.

The additional monies being requested are required to address a shortfall in funding to complete this project. While it was initially believed that the existing budget was sufficient, during the detailed design review phase of the project, engineered coverage maps were produced which revealed optimal coverage would not be achieved utilizing existing radio sites. New coverage maps were developed to assess the impact of moving various sites to ensure that optimal coverage was obtained. It was decided that moving sites was the best course of action and would be done in a fashion that would attempt to mitigate costs as much as possible. Wherever appropriate and viable, existing City properties were used thereby minimizing operational costs by avoiding the leasing of property and allowing for synergies with respect to secondary power sources. Overall, seven (7) new radio sites were constructed, as well as a new master site.

Additionally, as part of the construction phase, some site remediation to mitigate poor soil conditions was required to allow for the installation of a 180ft communications tower. Also, the move of Fire Dispatch to the Multi-agency Training Centre further necessitated the complete replacement of the Fire Station Alerting System and enhancements to the System Maintenance Agreement to allow for a comprehensive coverage of all hardware, software and labour.

The total approved budget for this project was set at \$23,314,000. Total expenditures to complete the project are now \$24,215,300. As a result staff are requesting an additional \$901,300 in funding to cover the additional costs related to the increased infrastructure outlays, change orders and associated net tax implications which have been readjusted to reflect updated costing.

The overall project was funded from the following sources: Hamilton Police Services Capital Project (\$3.2M), Corporate Radio Reserve (\$5.4M), and (\$13M) financed over 15 years and repaid through Departmental Debt Charges.

Alternatives for Consideration – Not Applicable

FINANCIAL / STAFFING / LEGAL IMPLICATIONS

Financial: The upgrade project is being funded from the Radio Communication Systems Maintenance Reserve #100032 and the Capital Project has been set up as Capital Account #7800951900. The funding source is a combination of established Corporate Radio Reserves, Hamilton Police Services - Approved Capital Project for Communications Equipment and debt financing. The increase in cost of \$901,300 due to the cost of expanded works and applicable net taxes will be covered in the originally identified funding sources for the project.

Staffing: There are no staffing implications associated with Report CS13034.

Legal: There are no legal implications associated with Report CS13034.

HISTORICAL BACKGROUND (Chronology of events)

The Corporate Radio Upgrade Project was initiated in 2008 to refresh the infrastructure and end-user radio equipment. The original trunked radio system was commissioned in 1995 and was starting to demonstrate end-of-life behaviours, i.e. increased equipment/module failures).

The business case brought forward was one that proposed to accomplish the upgrade through a combination of funding from established reserves and debt financing that would be covered off from within the current operating budget of Corporate Radio thereby resulting in a zero net levy impact.

The authority to fund and procure the required goods and services for this project was established through a series of four (4) reports to Council:

- HES08004 – In 2008, this report established a high level estimate of \$21.9M to complete the work and recommended that it be single sourced to the incumbent (Motorola) based on the historical performance of the previous system and to allow for the re-use of some existing newer end-user equipment. It also

proposed that this project be implemented over multiple years to assist in meeting the objective of zero net levy impact.

- HES08004(a) – In 2009, Council was advised that the City had completed negotiations with Motorola and requested permission to accept the proposal and execute the contract to initiate the replacement of the existing trunked radio system. The contract price was \$20.6M and \$1M was established for contingency funding to cover site work, interfacing, etc.
- HES10011 – In 2010, a request for additional funding of \$1.4M for expanded works to cover off the construction of new radio sites and additional subscriber equipment was brought forward. Originally the project only proposed to refresh the existing radio sites. During the detailed design review it became apparent that there was a need to re-evaluate the locations of the sites so as to address growth that had occurred in the City since 1995. In the end, a total of seven (7) new radio sites were constructed and only three (3) existing sites were re-used.
- HES11017 – In 2011, due to its interdependence on the Corporate Radio System, a request to transfer the \$300,000 budget from the capital project for Fire Station Alerting was made. The \$300,000 was transferred into the project and work was completed as part of the larger project. Due to the relocation of the Fire Dispatch to the new Multi-Agency Training Academy, a complete replacement of the system was required. In the end, the total cost of the implementation was \$583,000.

The finalized design consisted of the installation and commissioning of equipment at ten (10) radio transmitter sub-sites, three (3) dispatch centres, one (1) radio service shop and one (1) master / prime site. A total of nine (9) new sites were developed. Site development work varied from site to site but in general consisted of erecting communications towers where required, supplying power and communications to site, sourcing and installing equipment shelters, installation of HVAC systems, installation of site security and fencing, installation of grounding and lighting protection and deployment/commission of radio infrastructure equipment. Only three (3) of the original radio sites were re-used which typically required only minor electrical upgrades to accommodate the new site equipment.

POLICY IMPLICATIONS/LEGISLATED REQUIREMENTS

There are no policy implications/legislated requirements associated with Report CS13034.

RELEVANT CONSULTATION

Corporate Services – Finance and Administration

Reviewed cost-overrun impacts on project, increase cost to be paid from previously identified corporate radio reserve. Due to extended implementation schedule of project reserves are larger than originally forecast for project. This will allow for the cost-overrun to be covered off from reserve.

ANALYSIS / RATIONALE FOR RECOMMENDATION

The recommendation deals with the request for approval of funds to cover the additional costs related to the increased infrastructure outlays, change orders and associated net tax implications which have been readjusted to reflect updated costing. Expanded works were required to improve reliability, commissioning new fire dispatch centre at the Multi-Agency Training Academy and to rationalize radio site locations to provide for optimal radio coverage throughout the City. It was necessary to re-evaluate radio site locations to properly deal with areas of growth within the City that have occurred since the implementation of the original trunked radio system in 1995.

ALTERNATIVES FOR CONSIDERATION

None.

ALIGNMENT TO THE 2012 – 2015 STRATEGIC PLAN:

Strategic Priority #1

A Prosperous & Healthy Community

WE enhance our image, economy and well-being by demonstrating that Hamilton is a great place to live, work, play and learn.

Strategic Objective

1.2 Continue to prioritize capital infrastructure projects to support managed growth and optimize community benefit.

1.6 Enhance Overall Sustainability (financial, economic, social and environmental).

Strategic Priority #2

Valued & Sustainable Services

WE deliver high quality services that meet citizen needs and expectations, in a cost effective and responsible manner.

Strategic Objective

- 2.1 Implement processes to improve services, leverage technology and validate cost effectiveness and efficiencies across the Corporation.
- 2.3 Enhance customer service satisfaction.

APPENDICES / SCHEDULES

None