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TO:	CHAIR AND MEMBERS COMMUNITY & PROTECTIVE SERVICES COMMITTEE MEETING ON TUESDAY, NOVEMBER 17, 2015
FROM:	MARTIN HAYWARD, MANAGING DIRECTOR CORPORATE SERVICES AND CITY TREASURER, CHIEF FINANCIAL OFFICER
SUBJECT:	RADIO SYSTEM UPDATE ONEVOICE 2.0

RECOMMENDATION

That, on the recommendation of the Managing Director Corporate Services and City Treasurer, Chief Financial Officer, with concurrence of the Managing Director, Neighbourhood, Children and Fire Services, the Managing Director, Environmental & Engineering Services and City Engineer, and the Deputy Police Chief and on the advice of the oneVoice Steering Committee, notwithstanding the previous recommendation of the Civic Administration to upgrade the oneVoice system in 2016 and in order to take advantage of substantial savings and to mitigate risk, the following actions be taken with respect to the oneVoice radio system:

- a) the Civic Administration **BE AUTHORIZED** to proceed with the upgrade of the oneVoice radio system with Harris Canada Systems Inc. in accordance in with the provisions set out in the attached Appendix “A” to this report; it being noted that this is consistent with the City of London’s Procurement of Goods and Services Policy, section 14.4, subject to promotional discount;
- b) the financing for the project **BE APPROVED** as set out in the Sources of Financing Report attached as Appendix “B” to this report;
- c) the Civic Administration **BE AUTHORIZED** to undertake all the administrative acts that are necessary in connection with this project;
- d) the approval given herein **BE CONDITIONAL** upon the Corporation entering into a revised contract or amendment to the existing contract with Harris Canada Systems Inc. to the satisfaction of the City of London; and,
- e) the Mayor and the City Clerk **BE AUTHORIZED** to execute the revised contract or amendment to the existing contract with Harris Canada Systems Inc..

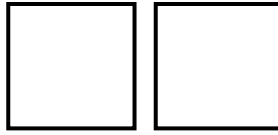
PREVIOUS REPORTS PERTINENT TO THIS MATTER

- Board of Control, October 8, 2008, Tender 08-53 Sole Source oneVoice Radio Project
- Board of Control, July 21, 2010, Change in Project Regarding Upgrade to P25 Standards oneVoice Radio Project

BACKGROUND

EVOLVING RADIO ENVIRONMENT

Historically emergency and public service radio systems based on simpler analogue technologies lasted well in excess of 10 years, in the case of the London Fire Department’s previous system 20 years. In the 2000’s, radio manufacturers began to transition to more technologically advanced systems built on an internet protocol (IP) which saw a shift from analogue to digital systems. The new technology provided enhanced encryption, as well as interoperability between services across multiple jurisdictions. Unlike analogue systems, digital systems, much like computers, require periodic updates to operating systems. Whereas the City was told that the current P25 digital radio system had a service life of 10 years, it learned this year from its radio system supplier that these updates eventually result in a need to enhance technological infrastructure – enhancements that that were not required in with a traditional analogue radio system. Therefore, the expected lifespan of public safety radio systems has been shortened considerably. The upkeep of these systems are now tied to other factors beyond



a single jurisdiction including alignment with national and international protocols.

In discussion with other emergency services across the province, this reduced lifecycle has become apparent and echoes the recent experience at the City of London.

HISTORY

In 2004 a needs and options study had determined that the most cost effective path for the replacement of the London Fire Department's (LFD) aging radio infrastructure was to join the City's Enhanced Digital Access Communication System (EDACS) managed by London Police (LPS). The project also provided an opportunity to generally improve the radio system with respect to coverage, which would benefit all system users.

The decision to pursue the LFD migration to the City's radio system led to the establishment of the oneVoice project. The project brought together all of the system's current users, as well as potential future partners, including London Police, London Fire, Environmental and Engineering Services and Corporate Security and Emergency Management in an effort to ensure alignment, functionality, and continuity of this critical and evolving infrastructure. In 2008, upgrades to the City's radio communication system commenced. In 2010, the City was advised of an industry change which required a move to Project 25 (P25), a new standard requirement. The P25 protocol was developed and embraced by the U.S. emergency services radio market as it was created through joint efforts of the Association of Public Safety Communications Officials International (APCO), the National Association of State Telecommunications Directors (NASTD), selected U.S Federal Agencies, and the National Communications System (NCS).

This meant a significant change to the City of London's approach in 2010/11 which included the eventual move from an EDACS radio system to the P25 radio system. This work and upgrade was carried out by Harris Canada Systems Inc. (Harris). In working with Harris, the City was able to implement a P25 radio system at about half the cost of what was initially identified by leveraging existing radio infrastructure. Life cycle renewal was also estimated to be on an eight to ten year cycle (roughly half the analogue systems); plans and budgets were then developed accordingly.

From June 2011 to July 2012 many full time equivalent hours were expended by Harris involving City agencies, with the end result being a full implementation of the Harris P25 system which was successful and seamless to radio end users and dispatch personnel. Since July 2012, there have been two additional successful upgrades to the Harris P25 core software.

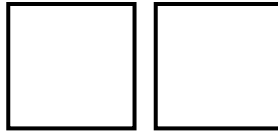
Technical management, maintenance, and administration of the system was undertaken by London Police Service on behalf of all users and was funded in part by end users and Corporate Services. Information and Technology Services historically budgeted for the infrastructure of oneVoice, while the respective Service Areas (LPS, LFD, and Environmental & Engineering Services) budgeted for the user gear (portable radios, mobile radios, etc.).

CURRENT STATUS

In the spring of 2015, based on change requirement information from our technical staff and system provider, the oneVoice Steering Committee was re-formed (Committee consisting of representatives from the London Police Service, London Fire Department, Corporate Security and Emergency Management, Finance and Environmental and Engineering Services) in order to provide oversight of the radio system and planning. To assist in the development of the multi-year budget, the committee had Harris perform an audit and analysis of the existing P25 network to provide life cycle consultation on a recommended technology road map to ensure minimal risk to our mission critical communications systems since the last major upgrade. During that review, the following observations were made:

- As computer software and hardware technologies have evolved, Harris has continued to enhance their P25 offering to take advantage of newer platforms in an effort to improve their product and infrastructure support. New software releases are typically rolled out on a yearly basis. The latest P25 SR10 release is an integrated solution that runs on a Virtual (VMWare) platform and minimizes individual standalone servers to ensure reliability, redundancy and improved support, while reducing cost of ownership.
- The PR9D release currently in place for the City's oneVoice radio system is the last version supported under the existing hardware configuration. This hardware includes servers, all consoles and most of the supporting infrastructure. Moving to the latest release of SR10A.2 will require a wholesale upgrade of much of the underlying core infrastructure, including consoles and servers.

It is important to note that much of the existing infrastructure is at, or approaching end of life/committed repair, and issues will be resolved on a best effort basis only. While high



availability, redundancy and spares are in place, it is vital that this issue be addressed as soon as possible. When P25 was implemented in 2011, much of the infrastructure was already in place and leveraged in order to reduce costs. Current LPS consoles have been in place for 5 years, while the LFD consoles are approaching 7 years. There is also a need for additional consoles to improve disaster recovery capabilities, as well as preparing for additional radio dispatch needs anticipated from the planned transition to Internet Protocol (IP) based Next Generation 911.

- Much of the server infrastructure is Commercial-Off-The-Shelf (COTS) third party hardware that has been in place since 2008. A recent review of this hardware indicated that many of the components were at end of life and will be supported on best effort basis only.

Upon receipt of the above findings, the oneVoice Steering Committee met with representatives of Harris to determine and understand what was needed to appropriately address the above findings. After several months of dialogue and clarification, it was identified that the existing software (PR9D) system is required to be updated to the latest software SR10A.2 version along with an update to the corresponding infrastructure. It should be emphasized the City of London's oneVoice communication system is a robust system and has built in redundancy to ensure continuity of service.

THE ISSUE

The life cycle of radio systems continues to shorten as a result of the industry moving more to software based solutions. As industry suppliers continue to change their business models to adopt these new technologies, radio system users must grapple with more frequent changes and upgrades to their systems. A number of minor changes were planned for 2016, however based on the audit, more significant changes will be required to remain current. Future budgets for the expected lifecycle for radio systems will be adjusted accordingly to recognize the shortened life cycle, changing from a ten (10) year lifecycle to a five (5) year.

Of note, Harris has proposed purchase discounts, if the City of London were to proceed with these upgrades in 2015.

BENEFITS OF UPGRADE

- The move to a Virtual (VMWare) platform minimizes individual standalone servers ensuring reliability, redundancy and improved support, while reducing cost of ownership.
- New SR10A.2 core (software) will be supported for a minimum of 6 to 8 years.
- New Symphony consoles (hardware) have an extended life between 9 to 12 years.
- Upgrade of infrastructure will be coordinated with the scheduled replacement of user gear that reach end of support in 2016 that are budgeted to occur for London Police Service (portable radios) and the London Fire Department (base station radios).
- SRA10.2 also provides additional features, such as the BeOn app, which extends Land Mobile Radio (LMR) push-to-talk capabilities to mobile phones.

FINANCIAL IMPACT

To upgrade the existing PR9D system to the SR10A.2 system, it is anticipated that the cost of the upgrade would be \$1.9 million. Civic Administration will bring forward the budget request as part of the 2016 Lifecycle Capital Budget along the appropriate multi year operating and capital budgets for which cover the on-going maintenance, training, installations, and configurations of a future software upgrade. It should be noted that through the dialogue between the oneVoice Committee and Harris, Harris has advised us that there is an opportunity to take advantage of possible promotional pricing, which could reduce the end cost to the City if the upgrade were to commence in 2015.

Should Municipal Council wish to advance the upgrade and take advantage of a promotional discount (potentially several hundred thousand dollars) and minimize risk, the following resolution could be made:

“the Civic Administration **BE AUTHORIZED** to proceed with the upgrade of the oneVoice radio system with Harris Canada Systems Inc. in accordance in with the provisions set out in the attached Appendix “A” to this report; it be noted that this is consistent with the City of London's Procurement of Goods and Services Policy, section 14.4, subject to promotional discount;

the financing for the project **BE APPROVED** as set out in the Sources of Financing Report attached as Appendix “B” to this report;

the Civic Administration **BE AUTHORIZED** to undertake all the administrative acts that

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are necessary in connection with this project;

the approval given herein **BE CONDITIONAL** upon the Corporation entering into a revised contract or amendment to the existing contract with Harris Canada Systems Inc. to the satisfaction of the City of London; and,

the Mayor and the City Clerk **BE AUTHORIZED** to execute the revised contract or amendment to the existing contract with Harris Canada Systems Inc.”

Funding for the advancement of this upgrade would be achieved through unspent oneVoice radio system project(s) from prior years and a draw from the Effectiveness, Efficiency, and Economy Reserve which would reduce the requested amount in the 2016 Capital Budget.

SUMMARY

To prepare for the Multi-Year Budget, an audit and analysis of the existing radio network was undertaken to provide a life cycle consultation on a recommended road map to ensure minimal risk to our mission critical communications system. The findings of that audit identified that an upgrade to existing infrastructure will be required sooner rather than later. As part of the proposed 2016 – 2019 Multi-Year Budget, this upgrade would be included as part of 2016 Lifecycle Capital Budget, however it should be identified that through the oneVoice Steering Committee’s consultations with Harris, an opportunity exists to reduce risk and the cost of this upgrade if the City advances the acquisition to 2015. Should Council advance the acquisition, the 2016 Proposed Capital Lifecycle budget would be adjusted accordingly within the Multi Year Budget, taking into account the shortened lifecycle of radio equipment.

ACKNOWLEDGEMENTS

This report was prepared with the assistance and in consultation with Deputy Chief Lazenby, London Fire Department, Chief Kobarda, London Fire Department, Case Huysmans, London Police Service, and Mike Bushby, Environmental and Engineering Services.

PREPARED BY:	RECOMMENDED BY:
IAN COLLINS SENIOR FINANCIAL BUSINESS ADMINISTRATOR	MARTIN HAYWARD MANAGING DIRECTOR, CORPORATE SERVICES AND CITY TREASURER, CHIEF FINANCIAL OFFICER
CONCURRED BY:	CONCURRED BY:
LYNNE LIVINGSTONE MANAGING DIRECTOR, NEIGHBOURHOOD, CHILDREN & FIRE SERVICES	JOHN BRAAM MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES AND CITY ENGINEER
CONCURRED BY:	
STEPHEN WILLIAMS, DEPUTY POLICE CHIEF	