

AGENDA REPORT

TO: HENRY L. GARDNER
INTERIM CITY ADMINISTRATOR

FROM: Bryan M. Sastokas
Jason W. Mitchell

SUBJECT: Supplemental Report on P25 Network
Selection Project

DATE: July 10, 2014

City Administrator
Approval

Date

7/11/14

The purpose of this supplemental report is to: (1) transmit the motion taken by the Finance and Management Committee ("the Committee") on July 8, 2014 related to the P25 Radio Network Selection Item; (2) revise costs according to the motion; and (3) provide the potential financial and operational impacts for the City Council's consideration, which includes a side-by-side comparison of both network options.

BASIS FOR SUPPLEMENTAL REPORT

As instructed by the Committee, on July 8, 2014, this supplemental report includes the requested costing analysis that excludes the replacement of existing City vehicle Harris mobile radios ("Harris Radios") in the event the City migrates to the East Bay Regional Communication System Authority (EBRCSA) network.

The Committee on July 8, 2014 adopted the following motion:

Resolution authorizing the City Administrator or his designee to: 1) enter into an agreement with East Bay Regional Communication System Authority (EBRCSA) to join the EBRCSA network within three months and migrate all of the Oakland's estimated 2,900 users to the EBRCSA network within twenty four months, in an amount not to exceed \$200 per radio as a one-time system access fee, for a total of \$580,000 and \$35 per radio on a monthly basis as usage fees for a total annual estimated amount of \$1,218,000 on the condition that EBRCSA first provides to the City Administrator of Oakland with the following in writing:

- 1. EBRCSA secure MOU's from member organizations to reserve a minimum (3) voting seats for City of Oakland representatives;*
- 2. That EBRCSA present a plan to ensure effective interoperability between EBRCSA and BART;*

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3. *EBRCSA and City Administration reach agreement about Oakland's termination rights;*
4. *Report to Council that conditions have been met and we are moving forward by October 2014. Waive The City's Advertising, Bid And Request For Proposal (RFP) Process For Equipment, Products And Professional Services For The Above Described Contracts; and*
5. *Award Agreements Utilizing The City's Competitive Contracting Requirements Within A Budget Amount Of \$4,416,300 For Public Works Portable And Mobile Radios And Public Siren System Replacement Project Provided That Prior To Expenditure Of Any Funds Staff Will Award Contracts And Establish Contract Amounts For The Controller's Bureau.*

COST REVISION AND OPERATIONAL IMPACTS

As instructed by the Committee, the utilization of existing Harris Mobile Radios on the EBRCSA network instead of replacing Harris radios with new Motorola radios will save the City an estimated one-time amount of \$6,510,317, but there are potential significant performance impacts that should be considered, which will be outlined later in this report.

As summarized in Table 1 below, the transition to the EBRCSA network is estimated to cost an additional \$810,141 as compared with an enhanced City P25 radio network. The original radio report heard at the July 8, 2014 Finance and Management Committee meeting reported that the transition to the EBRCSA network was estimated to cost \$7,320,458. Therefore, the proposed costing without the purchase of new Motorola radios would reduce the cost of transferring to the EBRCSA network by \$6,510,317, resulting in a revised cost of \$810,141.

Table 1: Summary Comparison of Revised Costing Analysis

Category	Costing in the report heard at the July 8, 2014 Committee Meeting	Revised Costing as requested by the Committee	Variance (reduction) ^[1]
Capital Investments ^[2]	\$ 5,870,943	\$ 54,993	\$ (5,815,950)
Maintenance Costs (Five Year Forecast)	735,000	735,000	-
Debt Service	714,515	20,148	(694,367)
Total	\$ 7,320,458	\$ 810,141	\$ (6,510,317)

^[1] The total variance of \$6,510,317 represents the elimination of the replacement of the Harris radios, but there are operation impacts that are further defined in Table 2.

^[2] Includes a 5% Contingency of \$306,950 for unforeseen costs.

If the City transitions to EBRCSA without purchasing Motorola mobile radios; it would save the City approximately \$6,510,317 in one-time funds. However, staff is concerned about this non-standard approach of utilizing the City's existing Harris mobile radios on the EBRCSA network. The potential service impacts are detailed in Table 2 below.

Table 2: Side-by-Side Cost & Performance Comparison Chart

Cost Description	Enhanced Oakland	EBRCSA	Cost Difference	Comparative Description
Replace Portable Radio Fleet (Motorola) ^[1]	\$7,950,600	\$8,475,600	\$525,000	Cost delta related to the additional purchase of 100 Motorola radios to replace new Harris radio already deployed to newly hired OPD officers.
Microwave Improvement Project	1,633,040	1,633,040	-	Project recommended regardless of decision to ensure Microwave network is reconfigured to meet existing community impact concerns while also enhancing 911 infrastructure.
Migrate Public Works & Siren System ^[2]	920,010	4,416,300	3,496,290	Cost delta related to the purchase of higher cost Motorola radios over lower cost Harris radios for Public Works and Sirens. Additional integration costs also required to integrate Sirens with Motorola radios.
Emergency Mobile Network	600,000	600,000	-	Project recommended regardless of decision to ensure City first responders have a backup means to communicate during a disaster.
Replace Mobile Radio Fleet ^[3]	-	1,423,800	1,423,800	Removed mobile radio costs as per direction received from the Committee. Significant technical impacts detailed in Table 3. Added costs related to equipment and professional services needed to facilitate migration to EBRCSA.
ITD Technology Refresh ^[4]	985,000	-	(985,000)	Properly equipping and training the City workforce to maintain and sustain the Oakland P25 network and user radios.
P25 Network Hardening (Harris) ^[5]	4,405,097	-	(4,405,097)	Planned upgrades and enhancements to the existing Oakland P25 network. This includes; reliability, coverage, and sustainability for the Oakland P25 network.
Membership Fee (one-time)	-	580,000	580,000	No one-time costs needed to stay on Oakland P25 network.
User Fee	5,760,000	5,915,000	155,000	Additional on-going costs related to subscription fee.
Add'l Interest cost on Debt service	-	20,148	20,148	Additional debt costs related to EBRCSA transition.
Total	\$22,253,747	\$23,063,888	\$810,141	

Notes

^[1] Additional Motorola portable radios needed to replace already deployed new Harris portable radios for three recent OPD Academy Classes.

^[2] Higher cost Motorola equipment needed versus Harris equipment for OPW and Sirens. Add'l services for Motorola for Siren integration.

^[3] Replace in-building antenna systems at four building locations, Replacement desktop radios at thirty locations, professional services for transition to EBRCSA.

^[4] Not required in transition to EBRCSA.

^[5] Not required in transition to EBRCSA. Will eliminate any improvements to the existing Oakland P25 network.

TECHNICAL CONCERNS

If the City transitions to the EBRCSA network without purchasing Motorola radios; the City would save approximately \$6,510,317, which includes a reduction in projected financing costs of \$694,367. However, staff is concerned about the Committee’s recommended non-standard approach of utilizing existing City Harris Radios on the EBRCSA network. During the preparation of this report, staff was informed that only one Harris mobile radio is on the EBRCSA network and staff cannot confirm the quality of the performance of this one mobile radio. Staff advises that the City and its first responders would not be well served by operating Harris radios on the EBRCSA network, creating a mixed vendor environment. Specifically, staffs technical concerns about the incompatibility of Harris Radios on the EBRCSA network are outlined in Table 3 below, which are based on the City’s experience of witnessing first-hand the negative effects of incompatible radios, software, and infrastructure, operating together on a P25 network environment.

Table 3: Technical Concerns

Functionality	Harris Radio	Motorola Radio	Impacts
Emergency Alarm & Call ^[1]	Failed on EBRCSA(when the emergency button is used on the radio, the dispatch center and other radios on the system did not respond correctly)	Confirmed	Harris users may lose the ability to utilize the Emergency Button
Emergency Alarm & Call on Patched Talkgroup ^[2]	Failed on EBRCSA (when the emergency button is used on the radio, the dispatch center and other radios on the system did not respond correctly)	Confirmed	Same as above (when two or more talkgroups are patched together)
Site Roaming ^[3]	Failed on EBRCSA (the radio did not seamlessly roam between different radio towers correctly)	Confirmed	Harris users may lose the ability to communicate outside Oakland’s immediate coverage area
Over the air programming ^[4]	Not Available (this feature is manufacturer specific and will not work on EBRCSA)	Confirmed	None at this time – This feature is not currently utilized
Busy Queuing & Callback ^[5]	<i>Unknown</i>	Confirmed	Harris users may be delayed in their ability to gain access during periods of high usage
Failsoft Site Trunking ^[6]	<i>Unknown</i>	Confirmed	Harris users may lose the ability to communicate
Master Controller Switch ^[7]	<i>Unknown</i>	Confirmed	Harris users may lose the ability to communicate
Mixed Vendor Firmware Compatibility ^[8]	<i>Unknown</i>	<i>Unknown</i>	Users may lose the ability to communicate

[1] Pressing the EMERGENCY BUTTON on the radio to declare an emergency on the P25 network.
 [2] Pressing the EMERGENCY BUTTON on the radio to declare an emergency on the P25 network while talkgroups are patched together.
 [3] Roaming from one radio tower to an adjacent radio tower while operating between Oakland and other areas.
 [4] Updating the programming of a radio from a remote location over the air using the P25 network.
 [5] If the P25 network is busy, a user transmission will be put into a queue awaiting capacity, once available, the network will signal the user it may proceed with a transmission.
 [6] If a P25 network experiences a minor failure it will revert into a fallback mode of operation called “Failsoft” which allows users to communicate in a limited way.
 [7] If a P25 network experiences a failure of the primary controller, it may revert to a backup controller to allow continued operation.
 [8] Mixing various radios from different manufacturers and models with different software/firmware on a P25 network.

Staff recommends replacing all existing Harris Radios with Motorola Radios at a cost of \$6,510,317 to ensure a seamless transition to the EBRCSA network.

If the City Council chooses to adopt the Committee's recommendation, then Staff recommends that the City, County of Alameda and EBRCSA mutually agree to secure the services of a third party to test, verify and opine that the Harris Radios can be successfully deployed on the EBRCSA network. The results of these tests and a recommendation would then be provided to the full City Council within three (3) months to ensure that a transition to EBRCSA would meet the City's expectations for performance and functionality. Staff recommends that this condition be included in the City Council adopted resolution to ensure a seamless transition if the City moves to the EBRCSA network.

EBRCSA GOVERNANCE CONCERNS

In the event that Oakland joins the EBRCSA consortium, it would become the largest participating City member of the Joint Powers Authority (JPA) (18 percent of total users) but would not be provided with equal representation on the voting body which governs the JPA.

To proportionally represent the City's user base on the EBRSCA network, Staff strongly recommends that the City secure four (4) dedicated City of Oakland seats, on the EBRCSA Board of Directors that are expressly for the purposes of representing the City's financial and policy interests.

This representation should not be in the form of an executed Memorandum of Understanding (MOU) with an external entity who is named in the EBRCSA By-Laws, but rather by amending the existing EBRCSA By-Laws to include the City of Oakland. Staff believes that the current resolution detailing an MOU-type of agreement as a form of representation has the potential to create a conflict of interest between the City of Oakland and its respective representative(s).

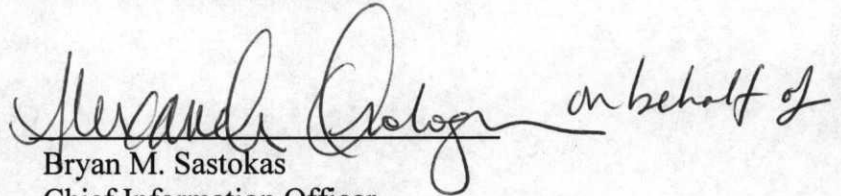
CONCLUSION

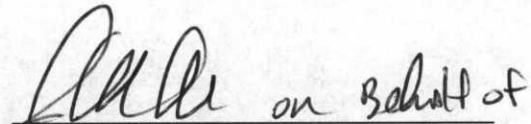
This report contains the information requested by the Committee on July 8, 2014, which includes cost revisions along with potential operational impacts, a six-year projection of costs (the term of the financing period) , and performance comparisons. In addition, staff provided recommendations that are optimal for ensuring the radio system runs properly based on operability, reliability, governance, and cost. From a budgetary perspective, neither radio network option will require a FY 2014-15 budget adjustment.

An additional item of major concern is the underground inoperability of the EBRCSA system within BART. Per the Committee's recommendation and if adopted by the City Council, EBRCSA should report will a plan to ensure effective interoperability between EBRCSA and BART.

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Respectfully submitted,


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