



CITY OF OAKLAND

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OFFICE OF THE CITY CLERK
OAKLAND

2013 JUL 18 PM 1:05

AGENDA REPORT

TO: DEANNA J. SANTANA
CITY ADMINISTRATOR

FROM: Ahsan Baig
Acting Director, DIT

SUBJECT: ANALYSIS OF EBRCSA AND
OAKLAND P25 RADIO SYSTEMS

DATE: July 2, 2013

City Administrator
Approval

Date

7-17-13

COUNCIL DISTRICT: City-wide

RECOMMENDATION

Staff recommends that the City Council Approve a Resolution Authorizing the City Administrator or Her Designee to: 1) Negotiate and Execute an Agreement with RCC Consultants Inc. to Provide an Evaluation and Report on the East Bay Regional Communications System Authority (EBRCSA) P-25 Radio System and the Feasibility of Relocating Microwave Paths, in an amount not to exceed \$150,000; and, 2) Waive the Advertising and Request for Proposal Process for Award of Said Contract to RCC Consultants Inc.

Pursuant to OMC section 2.04.051. B, staff requests that the City Council find and determine that it is in the best interest of the City to waive the competitive request for proposal/qualifications process for professional services due to the urgency of the repairs needed for the public safety infrastructure.

OUTCOME

Adoption of this resolution allows the City Administrator to negotiate an agreement with RCC Consultants for the detailed side by side analysis of the EBRCSA P25 radios system with Oakland P25 radio system.

EXECUTIVE SUMMARY

At the Finance and Management Committee on June 25, 2013, the Committee directed staff to negotiate a professional services contract with RCC Consultants, Inc. to provide an independent side-by-side comparison of the EBRCSA P-25 Radio System against the Oakland P25 Radio System and provide an addendum to their report dated March 2012. In addition, the Committee directed staff to 1) include an examination of relocating the City Microwave Network into various EBRCSA facilities while also examining the redesign of the network; 2) include the relocation of the Gwin and Fire Station 25 communication sites by utilizing additional EBRCSA

Item: _____
City Council
July 30, 2013

facilities located at Skyline Blvd and UC Berkeley. Staff in conjunction with a representative of RCC concluded that such a report could be delivered to the Council by November 1, 2013.

Staff has developed a project scope and proposal with RCC Consultants, Inc, which includes a detailed examination of the ERBCSA alternative and includes the following key areas:

- Comparative Drive Testing of both respective P-25 systems which shall include Received Signal Strength (RSS), Bit Error Rate (BER), and Delivered Audio Quality (DAQ).
- Harris Radio Portability onto the ERBCSA radio system to examine the technical functionality of the existing City radio fleet ability to perform on EBRCSA.
- Side by Side Business Case Comparative Analysis – RCC will make a comprehensive analysis of the impacts of migrating public safety radios operations, support and fiscal management impacts, both recurring and non-recurring in moving Oakland’s public safety radios over to the EBRCS platform. This will include:
 - Control and Ownership
 - Level of Governance Participation
 - Dissolution Impacts
 - Decommission Impacts and Mitigation Strategies
 - Memorandum Of Understanding/Memorandum of Agreement Dissolution Impacts
 - System Administrative Issues
 - Capacity and Future Scalability Issues
 - System Configuration and Control
 - System Features and Capabilities
 - Process, Procedures, and Performance
 - Remaining Dispatch and Network Compatibility Issues
 - Radios
 - Voice Logging
 - Microwave Backbone
 - Dispatch Consoles
 - Computer Aided Dispatch (CAD)
 - Next Generation 9-1-1
 - Outdoor Siren System
 - Non-Public Safety Users Radio Interoperability
 - External Public Safety Agency Service Contracts
 - Redundancy and Fallback Issues
 - Technology Refresh Issues
 - Security and Encryption Issues
 - Interoperability Issues

Item: _____
City Council
July 30, 2013

- o Fiscal Considerations
 - o Debt Management
 - o One Time Non-Recurring Costs to Join EBRCS
 - o Monthly Recurring Costs
 - o Summarized Cost Impacts
 - o Comparative Cost Impacts (Join EBRCS, Access EBRCS, New System)
 - o Cost Stability and Future Cost Management
 - o Warranty, Maintenance and Staff Support Considerations
- Oakland City Microwave Network System Impacts & Strategies as Directed by the Committee to Include:
 - o Relocation of existing equipment at Seneca into EBRCSA facility.
 - o Reconfiguration of network to remove the Gwin communications site by using alternative sites provided by EBRCSA.
 - o Reconfiguration of network to remove the Fire Station 25 communications site by using alternative sites provided by EBRCSA

Staff is coordinating a project stakeholders group to be included in this analysis project, which shall include key staff from the Oakland Police Department, Office of the Compliance Director, Oakland Police Officers Association, Oakland Fire Department, Oakland Emergency Management Services Division, and the East Bay Regional Communications System Authority...

OMC section 2.04.51 A requires the City to conduct a request for proposal or request for Qualifications, competitive selection process ("RFP/RFQ") prior to the purchase of professional services unless this requirement is waived under OMC Section 2.04.51 B upon a finding by the City Council or its designee that it is in the best interest of the City to do so. Pursuant to OMC section 2.04.051.B, staff requests that the City Council find and determine that it is in the best interest of the City to waive the competitive request for proposal/qualifications process for professional services due to the urgency of the repairs needed for the public safety infrastructure. The time involved to undergo a competitive bid process would not meet the timetable set forth by Council. Further, the professional services obtained as part of this contract are heavily reliant upon the unique and specialized technical services and data which have already been obtained by the consultant during the course of their investigative work in early 2012. Given the urgency and need to evaluate the critical public safety related infrastructure, the City would benefit by expediting the execution of these services and receive significant cost savings by obtaining similar technical services from this consultant as a direct extension of their previously submitted technical data. Further, this consultant is uniquely qualified to assist the City in the development of negotiating rights agreements, framework and process to provide access to city-owned facilities for public/private partnerships and other professional services.

Item: _____
City Council
July 30, 2013

PUBLIC OUTREACH

This item did not require any additional public outreach other than the required posting on the City's website.

COORDINATION

This report was prepared in coordination with the City Attorney's Office and the Budget Office. The Staff Report was provided to the Compliance Director for review and feedback.

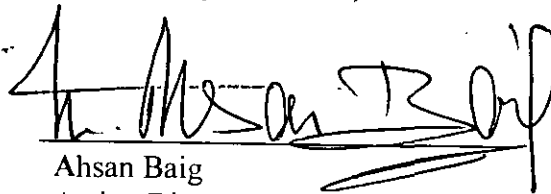
COST SUMMARY/FISCAL IMPLICATIONS

The proposal and project scope is attached to this report (*Attachment A*) which details the costs and project schedule with an anticipated start date of July 22nd, 2013 for an anticipated completion of the report to Council by November 1st, 2013. The costs for this professional services contract are estimated at \$134,176, with a not to exceed budget of \$150,000.

This resolution will authorize the City Administrator to expend an amount not to exceed \$150,000 from the FY 2012-13 General Fund balance.

For further information regarding this report please contact David Cruise, Information Systems Supervisor at (510) 239-3917.

Respectfully submitted,



Ahsan Baig
Acting Director
Department of Information Technology

Prepared by:
David Cruise
IS Supervisor, Wireless Communications
Public Safety Systems Services
Department of Information Technology

Item: _____
City Council
July 30, 2013



Attachment A

City of Oakland
Communications Department
150 Frank Ogawa Plaza, Suite 7335
Oakland, CA 94812

June 28, 2013

Attn: David Cruise

Re: Oakland/EBRCS Side by Side Assessment and Impact Study

Dear Mr. Cruise:

Following the Finance Committee meeting of June 25th 2013 RCC was asked to prepare a proposal to complete a side by side comparison of the Oakland Harris P25 and EBRCS Motorola P25 radio systems utilizing the City's Harris portables and mobiles on each. This proposal is to accomplish this work and present the findings before November 1, 2013, at a cost not to exceed \$150,000.00.

The attached scope of work details the proposed work effort and is supported by a schedule and cost estimate.

RCC anticipated completing this work in four (4) distinct tasks and invoicing the City as each task is completed and presented to the City, reviewed by the City and accepted as complete for payment

RCC will utilize Alan Johnston as the project manager, and John Chartkoff as the lead field test engineer. Both individuals have managed and conducted testing in the City in the past. In addition, Adolfo Bello will be the propagation engineer. Mr. Bello assisted in the setup testing for the original Oakland drive test, and the recent in-building test comparison between the Oakland and EBRCS systems. In addition, we will be utilizing Doug Dickinson from our Seattle office to assist with field testing, and Tom McDonald for the microwave work on the Project.

I will be the RCC contact, acting as the executive sponsor for this Project. If there are questions regarding our proposal or if you would like to schedule an oral presentation, please contact me at (909) 881-0250 or by e-mail at tom.gray@rcc.com.

Sincerely,

A handwritten signature in black ink, appearing to read 'T. Gray', written in a cursive style.

Thomas Gray
Vice President and General Manager
RCC Consultants, Inc.

cc; Ahsan Baig, Bill McCammon

Scope of Work

RCC understands that the City of Oakland would like to engage our services in the comparative analysis of radio systems. This analysis is to do a side by side comparison of the existing Oakland Radio System, which is a Harris P25 simulcast system, and the regional East Bay Regional Communications System (EBRCS) which is a Motorola P25 zoned simulcast system. In RCC's May 14, 2012 report entitled "P25 Radio System Evaluation Report", RCC performed an assessment of the Oakland System which included a drive test of the Oakland System to assess coverage, delivered audio quality, packetized data integrity, and Bite Error Rate (BER) testing. At that time the EBRCS was not operational and could not be evaluated. To follow up on our initial report RCC is proposing the following comparative analysis tasks.

Task 1 Comparative *Drive Test* - RCC will perform a drive test of the City of Oakland, using the same approach used during the testing of the Oakland system performed in 2012. We will test both the Oakland and EBRCS networks using Harris 7200 portable radios and in this case we will also test Harris mobile radios following the same route and performing the same testing, which will include;

1. **Received Signal Strength (RSS)** testing which will assess coverage signal from the tower infrastructure to hand held portable radios throughout the City. RCC will conduct this testing on square mile grids, driving 8 miles within each grid and performing a minimum of 8 roughly equally spaced test points within each grid. This test will be performed automatically as the area is driven and graded in terms of signal strength and plotted on a City GIS map.
2. **Bit Error Rate (BER)** testing which will utilize a Telecommunications Industry Association (TIA) standardized digital pattern called TIA 1011 and validate that it is transmitted out to the portable radios and received. Per this standard, RCC will also identify the equivalent Delivered Audio Quality (DAQ) characterizing for each test. At this time we have not been able to transmit and receive a TIA 1011 data string over a Motorola P25 system. We will explore this further and may need to use some interim set up to accomplish comparable measurements between the EBRCS radios system and the Harris radios. The purpose of this test is to assess any interference, no matter how minute that would degrade the signal. This will identify interference issue, that impact signal delivery. As with the RSS testing this will be performed automatically and plotted as we drive the area.
3. **Delivered Audio Quality (DAQ)** testing which will involve actually calling into dispatch and speaking a prescribed sentence and having dispatch respond with a similar prescribed sentence and then subjectively grading the quality of the audio. RCC will use industry standard evaluation profiles. This test will be performed 4 times within each grid and documented.

Given the need to do a truly comprehensive and meaningful comparison, RCC will also retest the current condition of the Oakland system as part of this drive test effort. As a check on the perceived performance of the current system, RCC will schedule and carry out interviews with Oakland Police and Fire management and communications sector leaders on the current performance of the System. We will also reach out and schedule interviews with outside communications sector leader and managers, as directed by City police and fire management. RCC will also specifically meet and interview operations and management from Alameda County to gain an understanding of the EBRCS P25 dispatch radio system. RCC will provide the testing results as drive test maps and supporting text to explain the test approach, findings and RCC's opinion of these findings as a freestanding report. This could be an addendum to the original 2012 Report.

Task 2 Harris Radio Feature Portability onto the EBRCS Network – RCC will do a comparative analysis to determine the impact to radio operation and features if the Harris 7200 portable radios were to be used on the EBRCS Motorola P25 system. While RCC is familiar with the capabilities of the Harris 7200 radios and their use on a Motorola system, we feel it is critical that we have actual testing on the EBRCS platform. We anticipate that simply reviewing the personalities of the Harris 7200 radios will need to be substantiated through actual field testing and validation of performance. RCC will consider both police and fire current standard operating procedures and identify those features and capabilities that will be transparent if used on the EBRCS platform; those that will not be able to be available on the EBRCS platform, and those which will provide some level of the feature and capability in a different fashion. RCC will provide the results of this analysis in the form of a report with a feature by feature analysis and supporting text explaining these findings and RCC's opinion of these findings as a freestanding report. This could be an addendum to the original 2012 Report.

Task 3 Side by Side Business Case Comparative Analysis – RCC will make a comprehensive analysis of the impacts of migrating public safety radios operations, support and fiscal management impacts, both recurring and nonrecurring in moving Oakland's public safety radio over to the EBRCS platform. This will include;

- Control and Ownership
- Level of Governance Participation
- Dissolution Impacts
- Decommission Impacts and Mitigation Strategies
- MOU/MOA Dissolution Impacts
- Examination of External Public Safety Agency Service Contracts
- System Administrative Issues

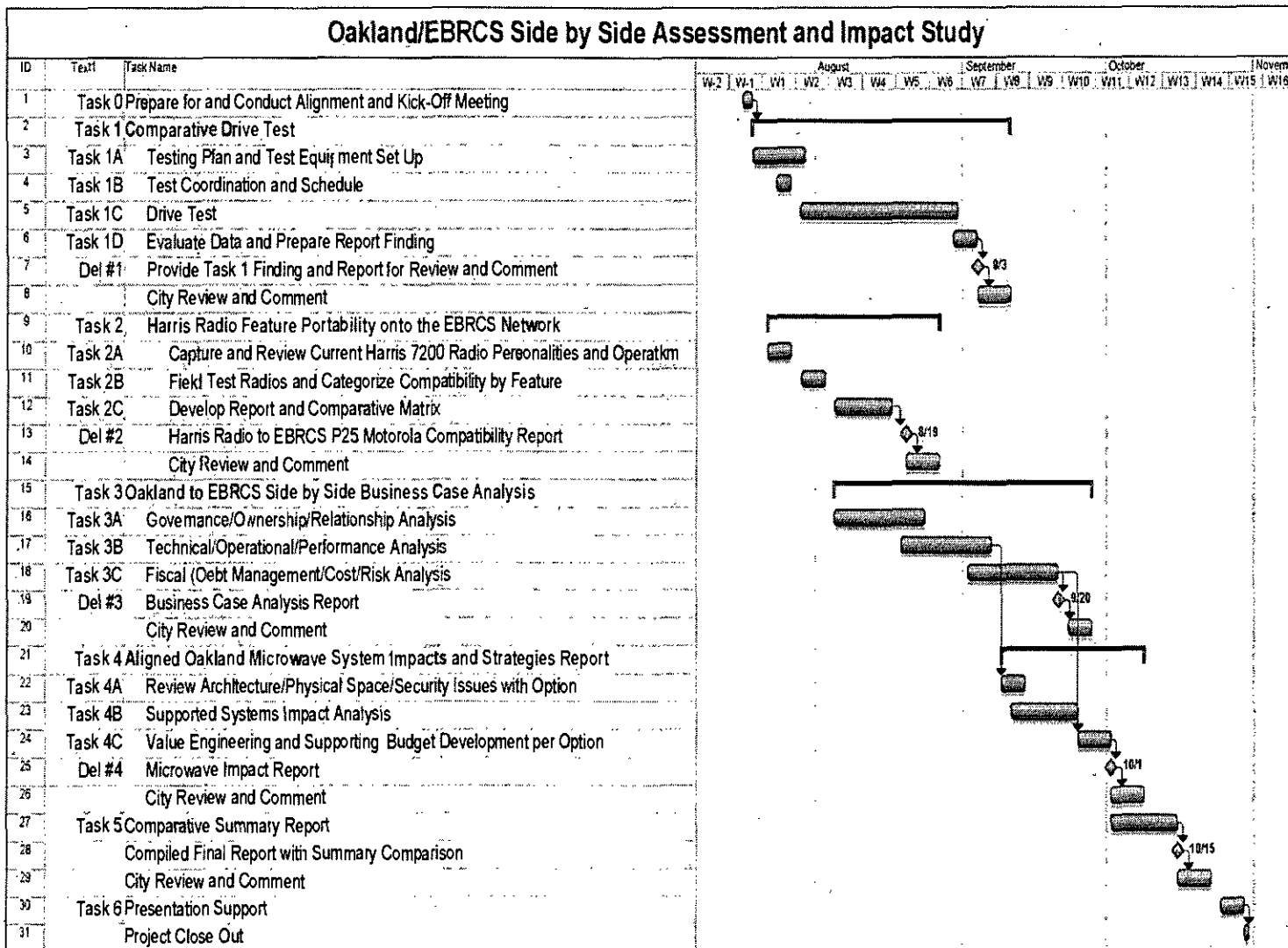
- Capacity and Future Scalability Issues
- System Configuration and Control
- System Features and Capabilities
- Process, Procedures, and Performance
- Remaining Dispatch and Network Compatibility Issues
 - Radios
 - Voice Logging
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 - Dispatch Consoles
 - Computer Aided Dispatch (CAD)
 - Next Generation 9-1-1
- Redundancy and Fallback Issues
- Technology Refresh Issues
- Security and Encryption Issues
- Interoperability Issues
- Fiscal Considerations
 - Debt Management
 - One Time Non-Recurring Costs to Join EBRCS
 - Monthly Recurring Costs
 - Summarized Cost Impacts
 - Comparative Cost Impacts (Join EBRCS, Access EBRCS, New System)
 - Cost Stability and Future Cost Management
- Maintenance and Support Considerations

Another important aspect will be an examination of other EDACS radio system user cities and their assessment of the systems performance, operational effectiveness, and fiscal near-term and long term management. RCC will analyze these critical issues in a side by side comparison and explore other operations or permutations of either interfacing with EBRCS or joining EBRCS. Fundamentally, RCC will provide a side by side analysis of the City owning and operating the Current Harris P25 System, versus moving to the EBRCSA's Motorola P25 Network. RCC will provide the results of this analysis in the form of a report with an issue by issue analysis, supporting text explaining these findings and specifically commenting on financial management with respect to options considered.

Task 4 Oakland City Microwave System Impacts and Strategies – A major City asset is the recently installed 11 GHz Aviat Microwave System that interconnects various City sites including the three P25 radio sites. Any impact to the Harris P25 radio system will concurrently impact the City's Microwave network. RCC will assess and provide an impact analysis of the Microwave System in terms of architecture (additional microwave paths), physical modifications, and fiscal impacts both recurring and nonrecurring. One consideration will be the relocation of City microwave assets into non-City facilities; issues of security and cost of relocation will be addressed and in this analysis. It is

important to understand that this Microwave System supports other communications systems and will remain in place. In particular, impacts to the outdoor siren system will be examined. Also important is to assess how to maintain optimum use of this system under any considered modifications to the public safety radio system. RCC will provide the results of this analysis in the form of a report with a review of each considered scenario, and draw comparisons and provide recommendations supporting these findings and RCC's opinion as a freestanding report, which could be packaged as an addendum to the original 2012 Report.

RCC will provide summary text in addition to the above four (4) specific task deliverables commenting on the status of the performance of the current Oakland Harris P25 system in comparison to the findings published in the Original 2012 report. These findings will specifically address the areas brought forth in the 2012 report as concerns and reassess the status of the system today.

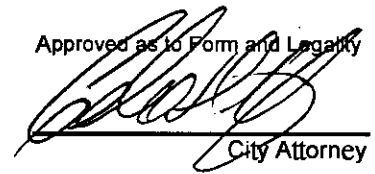


Cost Estimate

Project	Cost by Task	Hours	Fee	Expenses	All In Price
Tasks	Description				
Task 0	Prepare for Alignment and Kick-Off Meeting	8	\$1,520.00	\$1,214.00	\$2,734.00
Task 1	Comparative Drive Test				
Task 1A	Testing Plan and Test Equipment Set Up	44	\$7,920.00	\$0.00	\$7,920.00
Task 1B	Test Coordination and Schedule	8	\$1,440.00	\$0.00	\$1,440.00
Task 1C	Drive Test	186	\$33,480.00	\$4,674.00	\$38,154.00
Task 1D	Evaluate Data and Prepare Report Findings	24	\$4,320.00	\$946.00	\$5,266.00
Del #1	Provide Task 1 Finding and Report for Review and Comment				
Task 1 Subtotal:		270	\$48,660.00	\$6,834.00	\$55,514.00
Task 2	Harris Radio Feature Portability onto the EBRCS Network				
Task 2A	Capture and Review Current Harris 7200 Radio Personalities and Operation	29	\$5,040.00	\$0.00	\$5,040.00
Task 2B	Field Test Radios and Categorize Compatibility by Feature	32	\$5,760.00	\$1,080.00	\$6,846.00
Task 2C	Develop Report and Comparative Matrix	20	\$3,600.00	\$946.00	\$4,546.00
Del #2	Harris Radio to EBRCS P25 Motorola Compatibility Report				
Task 2 Subtotal:		80	\$14,400.00	\$2,034.00	\$16,434.00
Task 3	Oakland to EBRCS Side by Side Business Case Analysis				
Task 3A	Governance/Ownership/Relationship Analysis (Interviews)	40	\$7,280.00	\$1,960.00	\$9,248.00
Task 3B	Technical/Operational/Performance Analysis	40	\$7,280.00	\$946.00	\$8,226.00
Task 3C	Fiscal (Debt Management)/Cost/Risk Analysis (Interviews)	40	\$7,280.00	\$1,968.00	\$9,248.00
Del #3	Business Case Analysis Report				
Task 3 Subtotal:		120	\$21,840.00	\$4,882.00	\$26,722.00
Task 4	Aligned Oakland Microwave System Impacts and Strategies Report				
Task 4A	Review Architecture/Physical Space/Security Issues with Options	20	\$3,600.00	\$0.00	\$3,600.00
Task 4B	Supported Systems Impact Analysis	24	\$4,320.00	\$0.00	\$4,320.00
Task 4C	Value Engineering and Supporting Budget Development per Option	24	\$4,320.00	\$1,628.00	\$5,949.00
Del #4	Microwave Impact Report				
Task 4 Subtotal:		68	\$12,240.00	\$1,628.00	\$13,868.00
Task 6	Comparative Summary Report	8	\$12,320.00	\$0.00	\$12,320.00
Task 6	Presentation Support	8	\$1,520.00	\$0.00	\$1,520.00
	Project Close Out	8	\$1,520.00	\$1,278.00	\$2,798.00
All In Cost		1144	\$112,520.00	\$16,656.00	\$129,176.00
Fee Breakdown					
	Executive Sponsor		\$5,600.00		
	Project Manager		326,640.00		
	Testing Engineer		\$39,060.00		
	Testing Engineer		\$25,020.00		
	Propagation Eng.		\$6,840.00		
	Microwave Eng.		\$9,360.00		
					\$112,520.00
Other Expenses					
	Test Equipment Setup and Calibration		\$5,000.00		
					\$5,000.00
Contingency					
			\$15,824.00		
					\$15,824.00

PROJECTED COST: \$134,176.00

BUDGETED NOT TO EXCEED COST: \$150,000.00



City Attorney

OAKLAND CITY COUNCIL

2013 JUL 19 PM 2:56

RESOLUTION No. _____ C.M.S.

RESOLUTION AUTHORIZING THE CITY ADMINISTRATOR OR HER DESIGNEE TO: 1) NEGOTIATE AND EXECUTE AN AGREEMENT WITH RCC CONSULTANTS INC. TO PROVIDE AN EVALUATION AND REPORT ON THE EAST BAY REGIONAL COMMUNICATIONS SYSTEM AUTHORITY (EBRCSA) P-25 RADIO SYSTEM AND THE FEASIBILITY OF RELOCATING MICROWAVE PATHS, IN AN AMOUNT NOT TO EXCEED \$150,000; AND, 2) WAIVE THE ADVERTISING AND REQUEST FOR PROPOSAL PROCESS FOR AWARD OF SAID CONTRACT TO RCC CONSULTANTS INC.

WHEREAS, Based on a request of the Finance and Management Committee, the Executive Director of East Bay Regional Communication System Authority (EBRCSA), gave a presentation to the Committee on June 25, 2013; and

WHEREAS, EBRCSA was formed in 2007 as a Joints Power Authority, to serve the Alameda and Contra Costa Counties public safety communication needs;

WHEREAS, EBRCSA Board of Directors has 23 members made up of equal representation from both counties; and

WHEREAS, EBRCSA P25 radio network consists of 6 cell sites, including Northwest Cell covering the City of Oakland, which was launched in the end of 2012; and

WHEREAS, EBRCSA radio system equipment and subscriber radios are manufactured and provided by Motorola;

WHEREAS, City of Oakland owns, operates and maintains its own P25 Radio network, and went live in June 2011; and

WHEREAS, City P25 radio system equipment and subscriber radios are manufactured and provided by Harris; and

WHEREAS, EBRCSA has provided a cost proposal to the City to consider joining the EBRCSA P25 radio network;

WHEREAS, Finance Committee directed the staff to perform an independent side by side analysis of the Oakland P25 Radio system and the EBRCSA P25 radio system; and

WHEREAS, OMC section 2.04.51 A requires the City to conduct a request for proposal or request for Qualifications, competitive selection process (“RFP/RFQ”) prior to the purchase of professional services unless this requirement is waived under CMC Section 2.04.51 B upon a finding by the City Council or its designee that it is in the best interest of the City to do so; and

WHEREAS, RCC Consultants Inc., was hired by the City of Oakland, in 2011, to conduct a performance evaluation of the City of Oakland P25 Radio Network, and make recommendations for improvements; and

RESOLVED, that the City Council hereby authorizes the City Administrator or her designee to negotiate and execute a consulting services agreement with RCC for EBRCSA P25 radio network and City of Oakland P25 network side by side analysis for an amount not to exceed \$150,000; and be it

RESOLVED, that the City Council directs the staff that the side by side reports shall be completed by no later than November 1, 2013, and subsequently scheduled for Council agenda; and be it

FURTHER RESOLVED: That pursuant to OMC section 2.04.051.B , the City Council hereby finds and determines that it is in the best interest of the City to waive the competitive request for proposal/qualifications process for professional services because the professional services obtained as part of this contract due to the urgency of the repairs needed for the public safety infrastructure, the time involved to undergo a competitive bid process would not meet the timetable set forth by Council. Further, the professional services obtained as part of this contract are heavily reliant upon the unique and specialized technical services and data which have already been obtained by this consultant during the course of their investigative work in early 2012. Given the urgency and need to evaluate the critical public safety related infrastructure, the City would benefit by expediting the execution of these services and receive significant cost savings by obtaining similar technical services from this consultant as a direct extension of their previously submitted technical data. Given the urgency and need to evaluate the critical public safety related infrastructure, the City would benefit by expediting the execution of these services and receive significant cost savings by obtaining similar technical services from this consultant as a direct extension of their previously submitted technical data. Further, this consultant is uniquely qualified to assist the City in the development of negotiating rights agreements, framework and process to provide access to city-owned facilities for public/private partnerships and other professional services; based on the reasons set forth above in this resolution; and be it

FURTHER RESOLVED: That the City Council finds and determines based on the above determinations of the City Administrator, that the goods and services provided pursuant to the agreements authorized hereunder are of a professional, scientific, or technical and temporary nature, and shall not result in a loss of employment or salary by any person having permanent status in the competitive service process; and be it

FURTHER RESOLVED, that funds to complete this project will be drawn from 1010-46231-54919.0000000.IP62; and be it.

FURTHER RESOLVED, that the contracts shall be reviewed and approved by the City Attorney and placed on file in the Office of the City Clerk; and be it

FURTHER RESOLVED, that the City Attorney shall review and approve any such agreements; and be it

RESOLVED, that any agreements reached would be non-exclusive, compliant with city policies and subject to approval by the city council.

IN COUNCIL, OAKLAND, CALIFORNIA, _____, 20_____

PASSED BY THE FOLLOWING VOTE:

BROOKS, GALLO, GIBSON McELHANEY, KALB, KAPLAN, REID, SCHAAF, and PRESIDENT KERNIGHAN

NOES-

ABSENT-

ABSTENTION-

ATTEST: _____
LaTonda Simmons
City Clerk and Clerk of the
Council of the City of Oakland, California