

**SUBMITTAL TO THE BOARD OF SUPERVISORS  
COUNTY OF RIVERSIDE, STATE OF CALIFORNIA**

711



**FROM:** Information Technology Department and Sheriff-Coroner-PA

**SUBMITTAL DATE:**  
December 30, 2003

**SUBJECT:** Monthly Progress Report on 800MHz Radio System

**RECOMMENDED MOTION:** That the Board of Supervisors receive and file the attached report.

**BACKGROUND:** Following is the second 30-day status report on the 800 MHz Radio System. The report incorporates updates to the first report submitted to the Board on November 25, 2003. The updates are dated as of 12/31/03 and are noted in bold italics throughout the report.

Information Technology, the Sheriff's Department, Fire, Purchasing, Facilities Management and the Executive Office continue to work to address coverage issues.

Departmental Concurrence

*William Doyle*  
Bob Doyle  
Sheriff-Coroner-PA

*Matthew W. Frymire*  
Matthew W. Frymire  
Interim Chief Information Officer

<b>FINANCIAL DATA</b>	Current F.Y. Total Cost:	\$ 0	In Current Year Budget:	N/A
	Current F.Y. Net County Cost:	\$ 0	Budget Adjustment:	N/A
	Annual Net County Cost:	\$ N/A	For Fiscal Year:	N/A

<b>SOURCE OF FUNDS:</b>	Positions To Be Deleted Per A-30	<input type="checkbox"/>
	Requires 4/5 Vote	<input type="checkbox"/>

**C.E.O. RECOMMENDATION:** **APPROVE**

**County Executive Office Signature** *[Signature]*

- Dept't Recomm.:  Consent  Policy
- Per Exec. Ofc.:  Consent  Policy

**Prev. Agn. Ref.:** 3.57 of 10/7/03; 3.34 of 11/25/03 | **District:** All | **Agenda Number:**

**3.22**

Progress Report on  
Radio System Issues



January 13, 2004

(Updates are inserted on the following pages, dated  
as of 12/31/03 and are noted in bold italics.)

**Executive Summary**  
**Identified Action Items**

The IT Department, in conjunction with the Executive Office, Sheriff's Department, and Purchasing Department, is aggressively addressing the action items directed by the Board on October 7, 2003. These action items are:

1. Radio Coverage Options
2. Radio Action Plan
3. Control of Radio System Assets
4. Development of a Regional Radio System
5. Radio Site Acquisitions

The progress for each of these items is detailed in this report.

**Introduction and Background**

The current system was designed in 1988 with an initial investment of \$13.2 million for the 800MHz equipment purchase and implemented in 1992 to provide coverage to the populated areas during that time. Plagued with various engineering, site development and contractor issues, further improvements were identified by the Sheriff and IT that required additional funding of \$3.8 million. Digital upgrades to the in-field radio equipment and repeater sites also occurred at a cost of \$17.2 million. Although there have been multiple upgrades to enhance coverage and improve performance, coverage issues continue to exist. During the same period the County's population has grown by 32%, much of the development in areas that did not require coverage in the past. It is anticipated that this trend will continue at the current pace, and that future coverage issues will occur as the County and Sheriff contract cities approve new development.

On October 7, 2003, the Board directed the Executive Office to work with the Sheriff's Department, Information Technology Department, and the Purchasing Department to secure the services of a consultant to review and analyze the existing 800MHz radio system for effectiveness, coverage, and safety. In addition, the Board directed that the consultant define an interim fix to ensure that coverage is provided at some level for areas that do not have coverage today.

The following action items were identified: (1) Radio Coverage Options, (2) Radio Action Plan, (3) Control of Radio System Assets, (4) Development of a Regional Radio System, and (5) Radio Site Acquisitions. The Information Technology Department was directed to provide monthly status reports to the Board detailing progress on the issues and action items identified. The status of each of these action items is included in this report.

**Radio System Direction**  
**Radio Coverage Options**

The IT Department has contracted with Gartner Group to provide consulting services for the purpose of developing consensus from all the 800MHz department users on what needs to be addressed, and from this consensus, to validate strategies for deploying both an interim and long term solution for public safety radio services.

The interviews with all the involved departments have already been conducted, and their report will be published in mid-November. This report will provide the road map required to move forward with defining and deploying both an interim fix to the existing 800MHz system, and the strategic direction required to provide a future solution to public safety radio services in Riverside County.

At this time, we understand that the recommendation of the consultant will be to develop two RFPs;

The first RFP will be used to define and price out an interim fix to the existing 800MHz radio system that will address the immediate coverage area issues that exist today. This RFP will define the Sheriff's coverage objectives, the County's existing radio sites and equipment assets, and will require the radio equipment vendors to design and engineer a solution that will meet the Sheriff's coverage objectives and reuse as much of the existing sites and assets as possible. This RFP should be completed and out to bid within the next two months. The RFP will only be sent to Motorola and MA/COM. This will ensure that the solution is defined by one of the radio equipment manufacturers, so that the County can hold them accountable for delivering a system that will meet the objectives stated in the RFP.

The second RFP would be sent to industry consulting firms, including such firms as Motorola and MA/COM, to identify a long-term "strategic" direction / solution to address the future requirements of not only the County, but all public safety agencies within the County. This RFP should be completed and issued for bid within the next six months.

**Status Update 12/31/03:**

***Gartner's report was delivered in November 2003 and has been reviewed by the participating Departments. Gartner's recommendation is as follows;***

**Development of RFP for interim resolutions to existing coverage issues**

***This RFP will be used to define and price out interim fixes to the current 800MHz radio system that address the immediate coverage area issues that exist today. The County submitted an RFP on November 22, 2003 for consulting services to develop this first RFP recommended by Gartner. Award of this consulting contract is scheduled for January 16, 2004. Completion and submission of this first RFP should occur by mid-May 2004.***

**Development of RFP for the radio system strategic direction**

***This RFP would be sent to industry consulting firms, including such firms as Motorola and MA/COM, to identify a long-term strategic direction / solution to address the future radio requirements of not only the County, but all public safety agencies within the County. This RFP should be completed and issued for bid by October 2004. A similar approach using consulting services for the development of this strategic RFP is being recommended.***

### **Radio Action Plan**

To address the immediate concerns of the Sheriff, the Information Technology Department is meeting weekly with Sheriff and Fire communications staff to identify, track, and resolve radio coverage, operational, and system issues. Through these meetings the following key areas for coverage enhancements have been identified and prioritized by the Sheriff's Department; Cabazon / Banning, Norco, Jurupa, Hemet, Moreno Valley, Southwest Justice, and Idyllwild.

The IT department, with the concurrence and validation of the Sheriff Communications staff, has provided improved coverage in the Cabazon / Banning area by upgrading an antenna at the Mt. David site, and has designed a conventional radio solution at the Whitewater site that will further enhance coverage. The conventional radio solution is planned for implementation in mid-November 2003. Coverage maps that define the service area, and training on how to use additional new radio frequencies will be provided to station personnel once the solution is installed and tested.

In the Norco area, IT is reviewing potential new sites at the State Prison and the Corona Court House to enhance coverage. This solution would redeploy older equipment from other locations to provide a temporary improvement in coverage. IT and Facilities Management are currently in the process of contacting the State Prison to identify availability and costs to implement a new radio site at that location.

These solutions are designed to provide interim patches to the coverage areas, until the future solution can be implemented as defined in the "Radio Coverage Options" section of this report. The other coverage area issues identified above are being addressed in the priority order set by the Sheriff.

In-building coverage is also being addressed within the radio action plan. Radio coverage in structures such as malls, schools, and other large public buildings can be problematic dependent upon design and location. To address this IT has proposed a new ordinance that will require builders/developers to provide the internal building infrastructure and technology to amplify public safety radio signals within any new buildings. Once approved, this ordinance will ensure adequate in-building public safety radio coverage in all new buildings built in the unincorporated areas. We will also be working with the Sheriff to ensure that this ordinance is presented to the incorporated entities that the Sheriff contracts service to, for adoption and approval in their jurisdictions. IT is also exploring options to address current in-coverage radio needs in existing large facilities.

### **Status Update 12/31/03:**

***In November 2003, the IT department, with the concurrence and validation of the Sheriff Communications staff, implemented a conventional radio solution at the Whitewater site that has further enhanced coverage in the Banning/Cabazon area. Coverage maps that define this new service area, and training on how to use additional new radio frequencies, were provided to station personnel once the solution was implemented. Although the working group has received positive feedback on the new coverage, the Sheriff remains concerned as this solution***

*lacks features available in the current 800MHz network and requires Deputies to manually have to switch channels as they move into and out of the two different coverage areas.*

*In the Norco area, IT identified two new sites at the State Prison and the Corona Court House to further enhance coverage. These sites were selected as they already have communications infrastructure in place, such as towers, backup generators, communications rooms. Although the State Prison is currently scheduled for closure, costs to install further radio communications at both of these sites have been developed and distributed to the working group for their review. At present, a conventional solution, such as used in Banning/Cabazon has been ruled out due to interference with other non-County conventional radio networks in the surrounding and neighboring areas. IT staff will continue to explore opportunities to enhance coverage in this area.*

*Implementation of an interoperability solution allowing communications with other public safety agencies within Riverside County is also currently underway. This interoperability project is a joint effort being funded by Homeland Security grants obtained by the County and participating agencies. At present, 800 MHz radios are being distributed to eighteen (18) participating agencies for installation in their current network consoles. Additional communication site upgrades have been designed and product is being procured to complete these efforts. The interoperability solution is scheduled to be completed by June 30, 2004. Once completed all participating agencies will be able to communicate on common channels when the need occurs.*

*Efforts on a new ordinance that will require builders/developers to provide internal building infrastructure and technology to amplify public safety radio signals are underway. In addition, an update to the Cell Tower ordinance is also being recommended to enable the County to co-locate on carrier towers if required. The Sheriff is providing IT with a list of the most critical buildings that should be considered for in-building coverage. IT has contracted with RiverOaks Communications to draft these ordinances; completion of the draft ordinances is schedule by mid-January 2004.*

#### **Control of Radio System Assets**

To ensure uninterrupted power is available to all County radio sites, the IT Department has secured verbal agreements, and is in the process of preparing formal Memorandums of Understanding, with the three leased site vendors to take over responsibility for preventative maintenance of the power generators at the eight sites under their control. In addition, we are also working with County Counsel to determine the best approach for attaining the existing leased sites through eminent domain or other legal means.

#### **Status Update 12/31/03:**

*Facilities Management is in the process of conducting site analysis at all leased sites. IT will provide Facilities Management with performance standards to be*

***included in amendments to the contracts. Site analysis and draft contract amendments will be completed by mid January 2004.***

### **Development of a Regional Radio System**

To address the need for interoperability, and to reduce operating costs through resource sharing, the IT Department has made presentations to the CVAG City Managers, Elected Officials, and public safety administrators; the WRCOG City Managers, and the Riverside County Law Enforcement Administrators Association. These presentations were given to educate these organizations on the need for a regional system, and to ascertain their interest in forming a regional joint powers or consortium to develop a regional public safety radio system for all public safety agencies within and surrounding Riverside County. While the organizations all voiced interest in this concept and the benefits it would provide, this interest has also been tempered with concerns regarding potential budgetary impacts of such an initiative. Each of the organizations has requested that we provide follow-up progress reports as the initiative moves forward.

IT and Sheriff staff have also scheduled meetings with the San Diego County consortium (RCS), and with the San Bernardino County consortium, to gather information on how these organizations function, and to determine if Riverside County would benefit from joining one of these regional radio system organizations. Additional meetings are also being scheduled with counties of Orange and Los Angeles to review their implementations and to determine if there are any benefits or opportunities for share locations or frequencies.

### **Status Update 12/31/03:**

***IT continues to explore regional radio system alternatives with CVAG, WRCOG and RCLEA. IT and the Sheriff are scheduled to present concepts at the Fire Chiefs Association on January 8, 2004. IT and the Sheriff have agreed to co-present the regional radio system alternative at all future meetings of these organizations.***

***IT and Sheriff staff have also attended meetings with the San Diego County consortium (RCS) and with the San Bernardino County consortium to gather information on how these organizations function, and to determine if Riverside County would benefit from joining one of these regional radio system organizations. Additional meetings are scheduled with other neighboring counties to review their implementations and to determine if there are any benefits or opportunities for shared locations or frequencies.***

### **Radio Site Land Acquisition**

IT is working with Facilities Management to aggressively pursue and acquire new radio sites through the County's Capital Improvement Program (CIP). In conjunction with the CIP program, we are working with the Executive Office to include the acquisition of the 70 sites we anticipate will be required in the future in the Development Impact Fee program. To address current and future radio coverage requirements, IT has also compiled a listing of all radio communication sites owned by government and non-profit agencies throughout Riverside County. It is our intention to work with these agencies to co-locate our radio equipment in as many of these sites as is feasible.

**Status Update 12/31/03:**

***Facilities Management is evaluating the possibility of purchasing the leased sites. Due to the multiple tenants at the leased sites, purchase of the existing communication towers may be cost prohibitive. Further information will be provided when Facilities Management completes the site analysis. IT has also requested Facilities Management to survey property in the Cabazon/Banning area for a potential tower site.***

In closing, the Information Technology Department would like to emphasize that officer safety is our number one concern / priority. To that end, the Executive Office, Sheriff's Department, Purchasing Department and the Information Technology Department are working closely to identify, review, and resolve officer safety issues associated with the 800MHz Radio system. An Action Plan has been executed and is reviewed weekly to address the Sheriff's immediate issues. RFPs are being developed to address both the short and long range issues and objectives, and should be out to bid in the next two months. Meetings with regional public safety and government organizations will continue in order to provide education on the issues and to strive for the formation of a regional public safety radio system. Draft ordinances are expected by the end of the year to address co-location with existing wireless communication company sites, and to address in-building coverage. Future public safety communication site land acquisition and equipment costs have been submitted for inclusion in the Development Impact Fee program, and lobbying efforts are being planned to increase the 911 surcharge rates to offset future public safety radio costs. The results from the various studies and the responses to the RFPs should provide us with an estimate of the anticipated costs associated with a short and long-term plan. We will provide the Board with this information as costs are validated.

**12/31/03**

***Information Technology, the Sheriff's Department, Fire, Purchasing, Facilities Management and the Executive Office continue to meet on a weekly basis to review and update the Radio Action Plan. The Board of Supervisors has been added to the distribution list of the weekly updates.***