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East Bay Regional Communications System Authority (EBRCSA)

Needs Analysis

December 31, 2008

CTA Communications

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Executive Summary

In the short time since its formal inception as a Joint Powers Authority, the East Bay Regional Communications Regional Authority (EBRCSA) has positioned itself well to move forward with its public safety radio and interoperability objectives.

EBRCSA engaged the services of **CTA Communications**, a leading firm of communications consulting engineers, to perform an independent assessment and recommend potential improvements. CTA research supports EBRCSA's overall strategy of creating a P25 standards-based, 700/800 MHz trunked system serving both Alameda and Contra Costa Counties. In addition, CTA has identified nine further opportunities for enhancing functionality, rounding out implementation plans, and reducing costs.

These findings and recommendations are presented in detail in the EBRCSA Needs Analysis Report.

Key Findings

- **Interoperable Communications**. When interviewed and surveyed by CTA, agencies across the board cited lack of interoperable communications as their most urgent need. Public safety radio systems in both counties are highly fragmented. As a result, many emergency responders are unable to talk to each other. The only shared interoperable system of any size is the Alameda County 800 MHz system. Some twenty additional, separate, mostly VHF and UHF systems serve all the other law enforcement, fire, medical and other emergency responders in the two counties.

- **Reliable Communications**. Users are deeply concerned that their radio systems will fail during an emergency incident, and CTA validated this concern through its surveys and observations. Most of the current systems are aging or obsolete. Some are experiencing outages or have limited maintainability, which are clearly not acceptable in the public safety arena. If they are retained, many systems will also require extensive upgrades before 2013 to comply with upcoming FCC regulatory mandates.

- **Frequency Availability**. The shortage of radio frequencies in the entire Bay Area is chronic. Currently, there is no set of available frequencies that could support all agencies. Key systems are at capacity with no possibility for growth, and some users have little or no access to public safety frequencies. In 2009, a window of opportunity will open briefly for the region to acquire new radio frequencies in the 700 MHz range. A 700/800 MHz system thus offers the first opportunity in many years for EBRCSA to implement a reliable, interoperable, shared system.

- **Current EBRCSA Activities**. EBRCSA has already taken action to start implementing the backbone infrastructure to support such a shared system. The microwave and radio technology being acquired is compatible with many existing systems as well as with EBRCSA's new, unified system. As the plans for the EBRCS move forward they will support improved interoperability and provide opportunities for an improved communications environment for all member agencies in Alameda and Contra Costa Counties.

CTA Recommendations

1. **Continue P25 Implementation**
   EBRCSA should continue to implement the Motorola P25, trunked, simulcast radio infrastructure, subject to the recommendations in this report. Despite the many

challenges to creating a regional radio system, CTA recognizes that EBRCSA's plans to implement P25 technology are the most appropriate way to satisfy current and future requirements. Additionally, given the amount of Motorola P25 infrastructure that has been purchased to date, the most cost effective approach is to continue to use Motorola fixed network equipment to build out the remaining infrastructure. There is some urgency to this effort since the window for federal funding support is narrow.

2. **Obtain Value Engineering Assessment**
   Before additional system implementation is authorized, EBRCSA should obtain Value Engineering services from a qualified, independent, professional engineering firm such as CTA. Value engineering is designed to help keep projects in scope, on schedule and within budget. Key elements should include evaluating the coverage provided by the current system design and creating a new cost estimate based on current requirements

3. **Adopt the new P25 ISSI Standard**
   EBRCSA should adopt the P25 Inter Sub-System Interface (ISSI) standard as the technical basis for adding systems to the network. Creating a shared P25 system will allow users to communicate with each other easily; ISSI brings additional advantages, including the ability for users to communicate with their own dispatch centers wherever they are in the region. The resulting system will open additional interoperability opportunities for EBRCSA throughout the entire Bay area.

4. **Begin Day-to-Day Management Planning**
   EBRCSA should begin immediately to plan for regional day-to-day management of the new system. The responsibilities of each managing agency must be clearly defined in a formal, signed agreement. Various alternative models should be considered for both day-to-day management and maintenance.

5. **Begin Maintenance Planning**
   EBRCSA should also begin immediately to plan for day-to-day maintenance of the new system. Maintenance represents an opportunity for the EBRCS to demonstrate a significant improvement over the current environment. CTA understands that formal agreements are being established between agencies providing maintenance, and recommends that these agreements be re-evaluated when new agencies join EBRCSA.

6. **Begin Standard Operating Procedure Development**
   EBRCSA should begin to develop Standard Operating Procedures (SOP) and training plans. A tremendous amount of effort is typically put into developing the technology, but without SOPs, the technology often is underutilized. SOPs are also required for compliance with National Incident Management Standards (NIMS), which are a condition of most federal grants.

7. **Create a User Group**
   EBRCSA should create a permanent User Group, with representation from ***all*** EBRCS system users, to provide input and advice to EBRCSA. This group needs to be involved in all aspects of implementation, including planning for day-to-day management, planning for maintenance, and developing Standard Operating Procedures and training standards. Ongoing responsibilities would include, for example, initiating or reviewing system changes, assisting in rate setting, and resolving operational issues.

8. **EBRCSA should pursue FCC licensing of new 700 MHz frequencies when the spectrum becomes available.**
   A significant number of new frequencies will be required to support the projected 15,000 users that will be served by the new system. The opening of the700 MHz

band presents a unique opportunity for acquiring new frequencies, which can be used to meet the needs of public safety agencies in the East Bay area.

9. **EBRCSA should work with CTA to redefine the scope of Phases II, III, and IV of the existing contract to better address the recommendations of this report.** As with any large project, requirements and understandings related to the EBRCS project have changed over time as the project team gathers new information. Modification of the scope of work will help align CTA effort in future phases with the evolving needs of EBRCSA based on the experience and clarifications gained during the Phase I needs assessment activities.

Summary of Consulting Activities

The findings and recommendations in the Assessment Report are based on an intensive set of on-site meetings and off-site analyses by **CTA Communications**. Briefly, these activities included the following:

- 42 Group Agency Meetings
- 34 tower site inspections
- 19 dispatch centers observed
- 147 Public Safety and Public Service Agency members were invited to participate in an on line survey using CTA Surveyor
- Detailed review of current system designs
- In-depth interviews with EBRCSA and Motorola

1.0 Introduction

Alameda and Contra Costa counties are located east of the San Francisco Bay. Together they encompass a land area of over 1,500 square miles and have a combined population of over 2.5 million people. Both counties are part of the Bay Area Super Urban Area Security Initiative (SUASI) and have been working closely with the West Bay Regional Communications System (WBRCS) and the Silicon Valley Regional Communications System (SVRCS). The purpose of these partnerships is to ensure that radio infrastructures are closely coordinated to provide region wide interoperability.

The two counties officially created the East Bay Regional Communications System Authority (EBRCSA) on September 11, 2007 by signing a Joint Powers Authority (JPA). Representatives from both counties have been working together to develop and implement the East Bay Communications System (EBRCS) which is a joint infrastructure build out. They have used Homeland Security grant funds from the Bay Area SUASI, Urban Area Security Initiative (UASI), and State Homeland Security (SHSGP) grant programs for this purpose.

The EBRCS is critical to ensure that County, locality and State public safety responders can effectively communicate in emergencies and disasters. The EBRCS will be a standards based, 800/700 MHz/VHF Project 25 (P25) digital shared regional radio communications system providing wide area public safety interoperability communications. Interoperability is the current focus of public safety agencies at the local, State and national levels. The recent terrorist attacks and large scale natural disasters have reinforced the criticality of interoperable communications for public safety emergency responders.

The EBRCSA engaged the services of CTA Communications to assist in:

1) Performing a needs assessment of the public safety agencies in Contra Costa and Alameda Counties, focusing on interoperability needs among these agencies, as well as with adjacent jurisdictions and the State of California.

2) Review and evaluate the existing communications systems and documentation in order to make recommendations for the future phasing of the East Bay Communications System.

The current two-way radio communications capabilities of Alameda and Contra Costa Counties are characterized by user agencies split across several aging and incompatible radio systems. County departments lack the ability to directly and conveniently communicate among critical public safety functions. A similar lack of interoperability exists between many County and City agencies.

While the current equipment itself is fairly simple to use, there are two significant barriers to understanding how to communicate on a County and regional level in response to a major event. First, much of the technology needed to communicate with adjacent agencies is not in place. Second, in many locations where the technology is in place, standard operating procedures (SOPs) are not in place and users are not trained to fully utilize the equipment's capabilities. This situation is inefficient at best and potentially dangerous at worst.

County communications personnel have responded well to user requests. Nevertheless, future improvements are limited with the current equipment. Most users are experiencing some problems with their present systems. Significant problems include crowded and

congested radio channels, inadequate or missing in-building coverage, lack of needed features, and widespread inability to communicate with other agencies, i.e., interoperability. These deficiencies, plus a number of other operational and technical concerns, inhibit East Bay public safety agencies from operating at full capacity and efficiency.

1.1 Report Outline

Based on the information obtained during interviews with public safety personnel, plus radio site and dispatch surveys in both Contra Costa and Alameda Counties, CTA has developed this needs assessment report, which includes the following sections:

SECTION 1 INTRODUCTION. This section introduces the study.

SECTION 2 CURRENT COMMUNICATIONS ENVIRONMENT. This section describes the current radio systems utilized by the Alameda and Contra Costa County agencies that participated in our survey and interviews.

SECTION 3 CURRENT COMMUNICATIONS PROBLEMS. This section describes the problems described to us regarding the current radio systems in use by Alameda and Contra Costa County agencies.

SECTION 4 SYSTEM ATTRIBUTES AND NEEDS. This section describes the system attributes desired by both Counties' public safety participants for the EBRCS to be shared by the various County and City agencies.

SECTION 5 FCC AND REGULATORY ISSUES. This section describes the regulatory or standards-related issues that will affect planning and implementing the EBRCS.

SECTION 6 COMMUNICATION FACILITIES. This section describes the radio sites and dispatch facilities we visited, and addresses upgrades required to incorporate the facilities into the EBRCS.

SECTION 7 CONCLUSIONS AND RECOMMENDATIONS. This section provides CTA's conclusions and recommendations based on our research, analysis and discussions with Alameda and Contra Costa Counties.

APPENDIX A INTERVIEW RECORDS. This section provides a copy of the interview records that record the results of the Group Agency meetings conducted in each of the two counties.

APPENDIX B SITE AND DISPATCH SURVEYS. This section a copy of the surveys of the dispatch centers and radio sites that were conducted in each of the two counties.

APPENDIX C SURVEYOR RESULTS. This section provides the results of the online survey that was used to gather additional information on the existing radio systems as well as to identify user needs for the future.

We wish to thank all of the departments and agency representatives who participated in this study for their cooperation and support. It was obvious, from the enthusiasm and knowledge of the people we interviewed, that they recognize the importance of working together to solve their joint communications problems. Each group provided us open access to both their personnel and their facilities. We especially wish to express our thanks and appreciation to Bill McCammon and the Alameda and Contra Costa teams that supported us for providing advance information, organizing meetings and interviews, and efficiently responding to our needs in preparing this report. Our encounters were uniformly professional and friendly.

2.0 Current Communications Environment.

2.1 Alameda County Communications Environment

Alameda County operates a county-wide, 800 MHz radio system used by many County and municipal agencies. Several other radio systems in the County are owned and maintained by individual jurisdictions, some of which serve an area as small as a one square mile. TABLE 2-1 is a list of the radio systems in Alameda County and the agencies that are supported by each system.

2.1.1 Alameda County 800 MHz Communication System

Alameda County (ALCO) operates an 800 MHz Motorola SmartNet radio system. This county-wide system contains 21 trunked voice channels and is simulcast over a number of radio sites. Variable density simulcasting is utilized and the number of channels on each site varies depending on the density of radio traffic required. The high level sites utilize 12 channels, and the low level sites contain 9 channels.

The ALCO Radio System supports the following Alameda County agencies: Sheriff, Fire, Public Works, General Services, Health Care, Zone 7 Water District, Probation, and District Attorney. The County also contracts to support the following cities and agencies: Fremont, Union City, Newark, Alameda, San Leandro, Dublin, Lawrence Livermore National Laboratory, Consolidated Fire Dispatch, Cal State East Bay, Camp Parks Fire and AMR (private ambulance service).

The system is interconnected with an analog microwave system, which consists of a ring with spurs and supports over 6,000 user radios.

Dispatching is not centralized and is performed from two primary locations: (1) Alameda Fire is dispatched from the Alameda County Regional Emergency Communications Center (ACRECC) located at Lawrence Livermore Lab (2) Emergency Services Dispatch, operated by the Alameda County Sheriff's Office, provides dispatching for the unincorporated areas of Castro Valley, Hayward, Cherryland, Ashland, San Lorenzo, San Leandro, Sunol, Pleasanton and Livermore. Emergency Services Dispatch also contract dispatches for AC Transit Police Services, Animal Control, Camp Parks Federal Police, Dublin Police Services and public works, Highland Hospital Police Services, Oakland Airport Police Services, Peralta Police Services, and the Social Services Agency Police Services.

2.1.2 City of Livermore 800 MHz Communication System

The City of Livermore operates a 5-channel analog, trunked, 800 MHz, Motorola Type II SmartNet land mobile radio system. This is a single fixed site system, located on the Doolan water tower. The Pleasanton Police Department, as well as Livermore Public Works and other municipal departments, share the radio system. The system infrastructure is aged and ready to be updated.

Livermore and Pleasanton Police Departments each operate their own 4-position dispatch center.

2.1.3 City of Albany Communication System

The City of Albany operates two simplex channels for City operations, one UHF and one VHF. The Police Department dispatches and operates from the single, simplex UHF channel. The Fire Department operates the VHF simplex channel. Both are dispatched

by the Police Department. Mutual aid agreements with neighboring jurisdictions are in place for utilization of tactical channels.

2.1.4 City of Berkeley Communication System

The City of Berkeley maintains two separate radio systems. The Police Department utilizes a 6-channel UHF system. The Fire Department operates a 5-channel VHF radio system. All public safety dispatching is performed at the Berkeley Police Station.

2.1.5 City of Emeryville Communication System

The City of Emeryville operates a conventional UHF radio system for their Police Department. The Police Department is the City's public safety answering point (PSAP).

The Emeryville Fire Department operates from the City of Oakland's EDACS radio system.

2.1.6 City of Hayward Communication System

The City of Hayward operates a standalone, conventional radio system which includes 2 simulcast T-band channels for the Police Department, one simulcast UHF Fire Department channel, and one repeated, non-simulcast T-band channel for Public Works and other agencies. The system also provides communication for the Hayward Police Department, Hayward Fire Department and fire operations in the community of Fairview. They also operate a separate UHF P-25 compliant repeater. The system was upgraded in 2005 to include a microwave interconnect system, site infrastructure, base stations, antennas, dispatch consoles and replacement radios for the Hayward Police Department.

The repeater sites, located at Garin Ridge, Walpert Ridge, Hesperian (water pump station), and West Winton Avenue, are very well located and maintained, and provide a high level of coverage and reliability. Sites are connected with 3 DS3 channels configured in a loop with hot standby.

2.1.7 Lawrence Livermore National Laboratory Communication System

Lawrence Livermore National Laboratory (LLNL) operates a Motorola SmartNet II, trunked system in the VHF and UHF bands. LLNL is also the location of the Alameda County Regional Emergency Communications Center (ACRECC), the main fire and emergency medical service dispatch center for Alameda County. The state-of-the art emergency communication center is located inside a secure area of the Laboratory. ACRECC dispatches for over 41 fire stations in 6 agencies in the County. ACRECC handles more than 75,000 calls annually in the cities of Alameda, Castro Valley, Dublin, Fremont, San Leandro, San Lorenzo, Sunol, Union City, the Parks Reserve Forces Training Area (United States Army), unincorporated areas, and both LLNL and Lawrence Berkeley National Laboratory (LBNL).

2.1.8 Alameda County Interagency Communications

The interoperability requirements for agencies in Alameda County are summarized in TABLE 2-2. County agencies listed on the left were surveyed and invited to indicate their "Current" and "Future" interoperability needs with the local, State or federal agencies listed across the top of the table. Current communications capabilities are indicated with a C on a green background. Future required capabilities are shown with an F on a red background.

2.2 Contra Costa County Communications Environment

Contra Costa County has several separate radio systems in various frequency bands including VHF highband, VHF lowband, UHF and 800 MHz. The largest of these systems are the Contra Costa County Sheriff's VHF conventional simulcast system, the Contra Costa County Fire VHF conventional system, the San Ramon Valley Fire VHF

conventional system and the City of Richmond's trunked 800 MHz EDACS system. TABLE 2-3 provides a list of the radio systems in Contra Costa County, and the agencies that are supported by each system. In addition, the following subsections provide an overview of each communication system.

2.2.1 San Ramon Valley Fire Communication System

The San Ramon Valley Fire Communication System supports the San Ramon Valley Fire Protection District (SRVFPD). It uses a 3-site simulcast VHF system for fire dispatch, with an additional standalone repeater. The repeated VHF channel, SRV South, has repeater sites on Highland Peak, Rocky Ridge, and Caldecott Tunnel Peak.

SRVFPD has additional UHF tactical channels that are used to support fireground communications. Three of the UHF channels are repeated, and additional channels are used for radio-to-radio communications on the fireground. The repeated UHF channels use sites on Mt. Diablo (SRV Fire Tac 22), Alamo Ridge (SRV Fire Tac 23), and Highland Peak (SRV Fire Tac 24). In the southern portion of the SRVFPD, all vehicles and personnel are equipped with 800 MHz mobile and portables for interoperability with Alameda County.

All personnel are also equipped with UHF portables for use on the fireground. These are repeated through pyramid vehicle repeaters to the VHF dispatch channels in order to reach back to dispatch. In responses where 800 MHz is used, the fireground is repeated over 800 MHz.

SRVFPD has an additional VHF lowband system that is not used on a daily basis, but is reserved for EOC coordination.

All agencies supported by the SRVFPD radio system are dispatched by the San Ramon Valley Fire dispatch center, which is located in the City of Danville.

2.2.2 Contra Costa County Fire Communication System

The Contra Costa County Fire communication system provides support for the following agencies:

- Contra Costa County Fire Protection District (CCFPD)
- Rodeo-Hercules Fire Protection District
- Crockett-Carquinez Fire Protection District
- Moraga-Orinda Fire Protection District
- Pinole City Fire Department
- East Contra Costa County Fire Protection District

The radio system is VHF conventional, with 3 dispatch channels; one is allocated for each portion of the County. The central dispatch channel is used to dispatch Martinez, Pleasant Hill, Concord, Clayton, Walnut Creek and Lafayette. The east dispatch channel is used to dispatch Pittsburg, Antioch, Oakley, Brentwood, Byron, Bethel Island, Knightsen, and Marsh Creek Canyon. The west dispatch channel is used to dispatch Moraga, Orinda, North Richmond, San Pablo, El Sobrante, Pinole, Hercules, Rodeo, and Crockett. There are an additional 5 tactical channels, 3 mutual aid channels and the CalCord channel.

All agencies supported by the CCFPD are dispatched by the Contra Costa Regional Fire Communications Center (CCRFCC). The CCRFCC is a secondary PSAP, so all 911 calls are first received in the law enforcement agency that has jurisdiction, and then routed to the CCRFCC.

The CCRFCC also maintains a VHF lowband system on 33.44 MHz. The CCRFCC retransmits the primary dispatch channels onto the lowband frequency. A lowband repeater is located on Kregor Peak.

2.2.3 Richmond 800 MHz Communication System

The City of Richmond uses an EDACS 800 MHz trunked system. The system has 4 repeater sites—Turquoise, Pearl, Nicholls, and City Hall—with 8 channels at each site. The backbone configuration is a spoke-and-hub microwave network.

Each Fire Department vehicle is equipped with 800 MHz and VHF narrowband mobiles and portables. Firefighters often monitor police traffic on a scanner that is located in most vehicles.

The Fire and Police Departments are in the process of purchasing P25 compatible user radios.

Dispatch directs responding agencies to additional tactical channels as appropriate. Fire agencies use VHF mobiles and portables for fireground tactical support. The primary dispatch center, located in the City of Richmond, dispatches for Richmond Police Department and Fire Departments, El Cerrito Police and Fire Departments, San Pablo Police Department, Kensington Police Department and the Contra Costa Community College District Police. A second dispatch center, located in Pinole, dispatches for Pinole and Hercules Police Departments.

2.2.4 Contra Costa County Sheriff's Communication System

The Contra Costa Sheriff's Communication System is a VHF conventional simulcast system that is divided into three sectors that cover the east, west and central portions of the County. Channel 1 covers the western portion and provides dispatch support for Orinda, Moraga, North Richmond and Lafayette Police Departments. Channel 2 covers the central portion and provides dispatch support for San Ramon and Danville Police Departments. Channel 3 covers the eastern portion and provides dispatch support for Pittsburg and Oakley Police Departments in Contra Costa County, and Rio Vista Police Department in Solano County. Each channel has repeater sites located throughout the County as described below:

Channel 1:	Transmit	Cummings, Bald, Nicholl and Rocky
	Receive	Moraga, Lafayette, WCDF, Rodeo, Crockette, El Sobrante, Orinda, and Garcia Ranch
Channel 2:	Transmit	Bald, Kregor, Rocky and Highland
	Receive	651 Pine, Station 31, SRVF Admin, Sydney, Station 39, Pac Bell, Station 35, Shadybrook, and MCDF (Farm)
Channel 3:	Transmit	Kregor and Highland
	Receive	Shady Brook, Los Vaqueros, Brentwood, Oakley, Rio Vista, MCFS53 and Bethel Island

The Sheriff's Office has additional VHF tactical channels that are not monitored by the dispatch center. TAC 4 is a repeated channel that is used countywide. Two additional tactical channels are also used for vehicle-to-vehicle communications. The Sheriff uses UHF channels for courthouse security. Standalone, 800 MHz repeated systems are used for communication within each of the three detention facilities located throughout the County. In addition to these Sheriff's frequencies, many individual police departments have their own tactical VHF and UHF frequencies.

The agencies supported by the Contra Costa County Sheriff communication system are dispatched by the Contra Costa Sheriff's Central Communications Unit, located in Martinez. This Center dispatches for the three Sheriff's regions of the County (East, West and Central); the Danville, Lafayette, Moraga, Pittsburg, Oakley, Orinda, Rio Vista and San Ramon Police Departments; County Animal Control; and the Los Medanos College Police Department.

2.2.5 Antioch PD VHF Communication System

The Antioch VHF system supports both the Antioch and Brentwood Police Departments. This is a VHF, 2-channel, simulcast system with 2 transmitters and 6 receivers. Repeater sites are located in Country Hills and the Water Tank on Longtree Way. Antioch also has a tactical VHF channel that is not repeated. Brentwood has two additional VHF, standalone, simplex repeaters that are used to support special events and training. Recently, Brentwood built a new 125 foot radio tower site.

The Antioch dispatch center is located in the City of Brentwood, and dispatches for Antioch Police Department, Brentwood Police Department, and Antioch Animal Services.

2.2.6 Walnut Creek PD UHF Communication System

Walnut Creek Police Department operates a UHF conventional system with repeater sites on Sydney Drive, Ygnacio Valley Rd and Main St. They use additional UHF tactical channels. Dispatching is from the Walnut Creek Police Department dispatch center.

2.2.7 Martinez PD UHF Communication System

Martinez Police Department operates a UHF, conventional, narrowband system with repeater sites on Wildcroft, Alhambra Valley at Stonehurst, Golden Hills Park and a primary site on Harbor View Drive.

Users are dispatched by the Martinez Police Department Dispatch, located in the City of Martinez.

2.2.8 Pleasant Hill PD UHF Communication System

Pleasant Hill Police Department operates a UHF 2-channel, repeated system with sites located at Boyd, Golden Park and Wildcroft. They have an additional UHF repeated channel for tactical use. Users are dispatched from the Pleasant Hill Police Department Dispatch Center.

2.2.9 Concord PD UHF Communication System

Concord operates a UHF system that serves the Concord and Clayton Police Departments. The system is a conventional UHF system with two repeated dispatch channels and one additional repeated tactical channel. Most of the vehicles are equipped with VHF mobiles for interoperability with the Sheriff's Office. Users are dispatched by the Concord PD Dispatch Center.

2.2.10 Additional Communication Systems

East Bay Regional Parks (EBRP) – EBRP operates a VHF lowband system that provides coverage in Alameda and Contra Costa Counties for the 58 individual parks that make up the EBRP. The system is supported by multiple repeaters located throughout the area with 3 channels at each site. The first channel, referred to as Dispatch, has 13 receivers and 10 transmitters. The second channel, referred to as Park District / Fire, is similar to Dispatch. The third channel, referred to as Police Tactical, has 8 transmitters and 6 receivers. None of the channels are narrowband or P25. A Harris DS-1 microwave ring connects the sites. The agency also has a command vehicle with an ACU-1000. In addition to the lowband radios, police vehicles have VHF highband radios and use pyramid VHF repeaters. EBRP has their own dispatch center, Central Dispatch Center (CDC), located at the Park District's Police and Fire Headquarters in Castro Valley.
County Connection – County Connection is the bus system that is used throughout Contra Costa County. They operate off a commercially-provided radio system. Radios are used primarily to alert drivers of detours, schedule changes and other incidents that require contact with bus operators. Each bus has an emergency satellite unit that connects it to dispatch and is tested 2 times per month. Cell phones are used to contact dispatch when the radios are not working. During the night shifts, the agency issues and

uses NEXTELs for safety. On-board video is also recorded on the bus. Day Star is the maintenance provider for the radio and data systems.

Bay Area Regional Transit (BART) – BART is a regional transportation provider for the Bay area, including Alameda and Contra Costa Counties. BART has an 800 MHz EDACS system with 10 channels, 7 low-level sites and an additional 40-60 underground sites. In addition, BART has a conventional repeated channel that has 4 repeater sites. There are 3,000 radios on the system.

Fisher Trunked UHF System – The Fisher system is a commercial, trunked UHF system that supports the Contra Costa Building Inspector, Contra Costa Animal Control, EMS agencies and Health Services' Hazmat unit.

2.2.11 Contra Costa County Interagency Communications

Interoperability requirements for agencies in Contra Costa County are summarized in TABLE 2-4. County agencies listed on the left were surveyed and invited to indicate their "Current" and "Future" interoperability needs with the local, State or federal agencies listed across the top of the table. Current communications capabilities are indicated with a C on a green background. Future required capabilities are shown with an F on a red background.

Table 2-1
Alameda County Radio Systems

Radio System	Agencies Supported	Dispatch Frequency Band
Alameda County 800 MHz SmartNet	Alameda County	800 MHz
	Fremont	
	Union City	
	Newark	
	City of Alameda	
	San Leandro	
	Dublin	
	Lawrence Livermore National Laboratory	
	AMR (Private ambulance service)	
	Consolidated Fire Dispatch	
	California State University East Bay	
	Camp Parks Fire	
City of Livermore 800 MHz Smartnet	Livermore PD	800 MHz
	Pleasanton PD	
	Livermore Public Works	
City of Albany Police Department	Albany PD	UHF
City of Albany Fire Department	Albany FD	VHF Highband
City of Berkeley Police Department	Berkeley PD	UHF
City of Berkeley Fire Department	Berkeley FD	VHF Highband
City of Emeryville Police Department	Emeryville PD	UHF
City of Hayward	Hayward PD, FD and Public Works	UHF T-Band
Lawrence Livermore National Laboratory	Lawrence Livermore National Laboratory	VHF and UHF

Table 2-2
Interoperability Communications

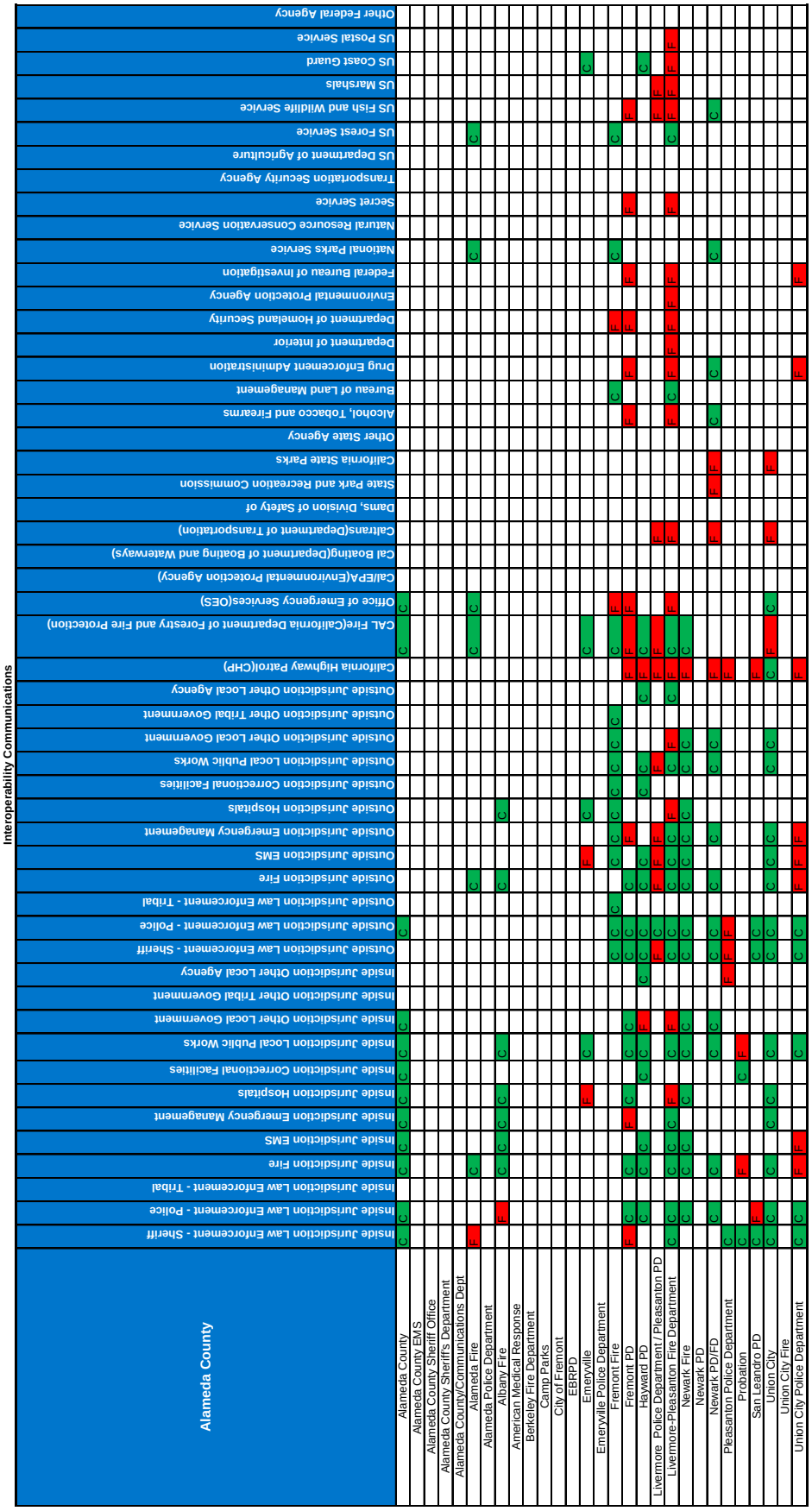

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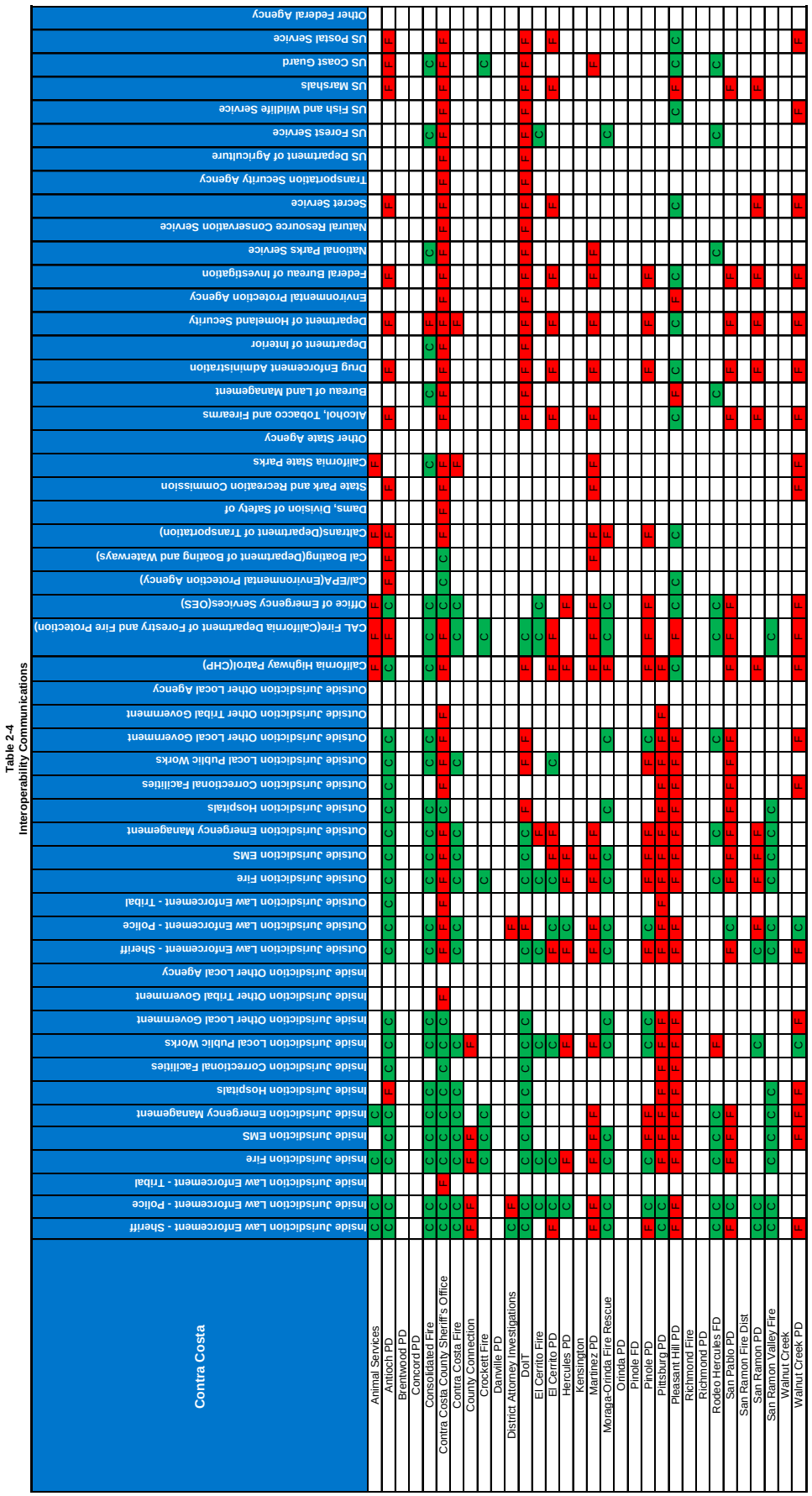
Table 2-3
Contra Costa County Radio Systems

Radio System	Agencies Supported	Dispatch Frequency Band
San Ramon Valley Fire Communication System	San Ramon Valley Fire Protection District	VHF Highband
Contra Costa County Fire	Contra Costa County Fire Protection District	VHF Highband
	Crockett-Carquinez Fire Protection District	
	East Contra Costa County Fire Protection District	
	Moraga-Orinda Fire Protection District	
	Pinole City Fire Department	
	Rodeo-Hercules Fire Protection District	
Richmond EDACS 800 MHz System	Contra Costa Community College District Police	800 MHz
	El Cerrito Fire Department	
	El Cerrito Police Department	
	Hercules Police Department	
	Kensington Police Department	
	Pinole Police Department	
	Richmond Fire Department	
	Richmond Police Department	
	San Pablo Police Department	
Contra Costa Sheriff's Communication System	Contra Costa County Sheriff	VHF Highband
	County Animal Control	
	Danville Police Department	
	Lafayette Police Department	
	Los Medanos College Police Department	
	Moraga Police Department	
	Orinda Police Department	
	Oakley Police Department	
	Pittsburg Police Department	
	Rio Vista Police Department in Solano County	
	San Ramon Police Department	

Table 2-3 (Continued)
Contra Costa County Radio Systems

Radio System	Agencies Supported	Dispatch Frequency Band
Antioch Police Department Communication System	Antioch Animal Services	VHF Highband
	Antioch Police Department	
	Brentwood Police Department	
Walnut Creek Police Department Communication System	Walnut Creek Police Department	UHF
Martinez Police Department Communication System	Martinez Police Department	UHF
Pleasant Hill Police Department Communication System	Pleasant Hill Police Department	UHF
Concord Police Department Communication System	Concord Police Department	UHF
	Clayton Police Department	
East Bay Regional Parks Communication System	East Bay Regional Parks	VHF Lowband
County Connection	County Connection	Commercial System
Bay Area Regional Transit Radio System	Bay Area Regional Transit	800 MHz
Fisher Trunked Radio System	Contra Costa County Animal Control	Commercial UHF
	Contra Costa County Building Inspector	
	EMS Agencies	
	Contra Costa County Health Services Hazmat Unit	

Table 2-4
Interoperability Communications



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3.0 Current Communications Problems

In order to identify the future radio system needs of Contra Costa and Alameda Counties, it is necessary to first capture the current problems being widely experienced. We utilized both group agency meetings and an online survey to help us obtain this critical information. The sections that follow summarize and highlight these findings.

3.1 Alameda County Communications Problems

Communication systems in Alameda County are diverse, and many are aged. The increased need for interoperability, combined with aging radio systems and increased development, are central to many of the issues discussed below. CTA has included a copy of the group agency meeting records in APPENDIX A and TABLES C-6 through C-9 of APPENDIX C contain additional comments provided by the survey participants.

3.1.1 Problems Reported During Alameda County Interviews

1. System reliability due to age and maintenance. Frequent system failures that include fail-soft mode and complete system failures (no radio communications).
2. Backup power capability at tower sites.
3. Old and unreliable equipment.
4. Portable battery life.
5. Fleet mapping issues prevent even agencies on the same County system from communicating.
6. Interoperability between County and non-County systems.
7. Interoperability is complicated.
8. Mixed use of 9-codes, non-standard codes, and plain English for day-to-day communications.
9. Many different and incompatible systems.
10. Missing or nonfunctional console patching.
11. Interoperability via dispatcher-to-dispatcher telephone calls.
12. Interference problems, including static and diminished volume levels.
13. Lack of in-building coverage.
14. Coverage holes.
15. Coverage shortfalls in the new construction areas.
16. Emergency alarming that does not override ongoing conversations.
17. Nonworking emergency buttons on radios.

18. Emergency “red button” on the portable radios cannot be operated while wearing gloves.

19. Emergency signals routed to individuals home dispatch center only (causes delays for firefighters operating outside their jurisdiction).

20. Staffing of trained dispatchers.

21. Lack of encryption. (Drug growers have been caught with stolen radios used to monitor the County radio system.)

22. Ineffective AVL systems; vehicles do not show up reliably at the dispatch center due to incorrect and inconsistent installations.

23. Cost of reprogramming for existing users when new users join the system.

24. Communications capability among and between Communications/Dispatch Centers.

3.1.2 Alameda County Online Survey Results

Alameda County users, dispatchers and technical points of contact were asked to participate in an online survey that captured some information about their current communication systems. APPENDIX C contains several tables that summarize the problems identified by the survey, as well as the level or seriousness of the perceived problems. TABLES C-1 and C-2 summarize the problems for trunked and conventional radio systems for Alameda County. Problems are listed in order of “overall” severity and are also ranked by discipline: fire, law enforcement, and all others.

3.2 Contra Costa County Communications Problems

CTA has consolidated the following list of problems by using information gathered during group agency meetings, information from the online operational survey and additional information that was provided to CTA. CTA has included a copy of the group agency meeting records in APPENDIX A and APPENDIX C contains additional comments provided by the survey participants.

3.2.1 Problems reported during Contra Costa Interviews

1. Co-channel interference and bleed-over.

2. Crowded channels. Not enough dedicated channels for agency use.

3. Poor coverage in some parts of the County, especially in hilly/canyon areas.

4. Poor in-building coverage throughout the County.

5. Poor mobile data coverage.

6. Cannot talk to maintenance services over the radio.

7. Unable to speak to CHP, or State Parks.

8. Some systems are fragile and non-redundant.

9. Hard to reach dispatchers.

10. Unsecured or insufficient monitoring of sites.

11. A patch takes entirely too long to be effective for interoperability needs. Many times, just not possible due to hardware.

12. Current earpieces sometimes interfere with transmissions.
13. Excessive wind and background noise on motorcycle mics even when used indoors.
14. Maintenance.
15. No procedures for management and use of the talkgroups and tactical channels.
16. Trunked channels occasionally receive busy tones.
17. Disabled emergency buttons on both mobile and portable radios.
18. Dispatch unable to track vehicles.
19. Dispatch cannot hear non-repeated tactical channels.
20. Interoperability with local agencies difficult during major incidents.
21. Dispatchers have to utilize the telephone to communicate with other communications/dispatch centers.
22. Dispatchers lose communications with officers on pursuits when they exit the normal coverage area.
23. Proprietary radio systems.
24. Station tones are occasionally missed because of the dispatcher's wait for a channel grant.
25. NPSPAC mutual aid channels not programmed in all radios.
26. Portable battery life.
27. Training does not support the use of plain text in the PD's and 10 codes make communication a challenge. As a result, fire does not talk to police that often.
28. Sites periodically taken offline for maintenance, sometimes without notice.
29. Personnel frequently have to utilize Nextels to communicate.

3.2.2 Contra Costa County Online Survey Results

Contra Costa County users, dispatchers and technical points of contact were asked to participate in an online survey that captured some information regarding the current communication systems in the County. APPENDIX C contains several tables that summarize the problems identified by the survey, as well as the level or seriousness of the perceived problems. TABLES C-3 and C-4 summarize the problems for trunked and conventional for Contra Costa County. Problems are listed in order of "overall" severity and are also ranked by discipline: fire, law enforcement and all others.

4.0 System Attributes and Needs

4.1 East Bay Regional Communication System Attributes

CTA provided two data gathering processes that enabled users in Contra Costa and Alameda Counties to describe the characteristics needed in a new communication system. The following two sections provide a summary of the information gathered.

4.1.1 Needs Reported During Interviews

Users were asked to describe their needs in a new radio system during the group agency meetings. CTA has included a copy of the group agency meeting records in APPENDIX A and TABLES C-6 through C-9 of APPENDIX C contain additional comments provided by the survey participants. The list contained below summarizes the comments that were received during the group agency meetings. These needs are not listed in any particular order and are intended to show the diversity of needs. However, the first two requirements were almost universally mentioned at all meetings and interviews.

1. Interoperability with all public safety agencies that isn't complicated.
2. Bullet-proof reliability and redundancy.
3. Simple to use.
4. Selectable encryption.
5. Subscriber units with a "cell phone" form factor for tactical/surveillance units.
6. Subscriber unit display technology that will not fade with outdoor use by motorcycle patrols.
7. Radios that do not draw on motorcycle battery reserves when the unit is not operating.
8. Additional tactical talkgroups for command personnel, SWAT teams and hostage negotiators.
9. Recorded and secure tactical talkgroup capability.
10. Portable-based GPS tracking.
11. Dispatch capability to create direct patches to diverse systems and talkgroups so that officers in dangerous situations don't have to switch channels.
12. Scanning with priority talk capability.
13. Talk-around channels programmed into all radios for radio to radio communications in the event of system failure.
14. GPS location information available on portable as well as on mobile units.
15. GPS location sent to Communications/Dispatch automatically when a "man down" or emergency alarm button is operated.
16. In-building coverage throughout the service area.
17. Increased coverage in the valleys.

18. Simplex fireground channels.
19. Standardized programming throughout the service area.
20. Over-the-air-programming.
21. County-wide channels.
22. Ability to talk directly to CHP.
23. Dual-band radios (700/800 MHz and VHF) for fire agencies.
24. Emergency buttons that can be “felt” when using a fire glove.
25. Ability to page specific radio subscriber units so that firefighters would not need to carry pagers.
26. Audible alert signal for incoming transmissions on portable units.
27. “Code 33” constant emergency alerts on “channel”. (Code 33 is an audible beeping signal that sounds every 5 seconds when the talkgroup is involved in an emergency, used to alert all users of emergency status on the talk group.)
28. Large, clear alpha-numeric displays on portables.
29. Verbal announcement feature to alert users of an inadvertent channel change.
30. A unique audible sound to notify users they are on the home channel.
31. More capacity.
32. Immediate channel access.
33. More dispatch channels.
34. Smaller, lighter microphones, better audio quality and 8 + hour battery life are needed on portable units.
35. PDA sized mobile data units.
36. Ruthless pre-emption for public safety radio traffic over public service radio traffic.
37. Mobile data as part of the radio system, rather than via commercial carrier.
38. Audible alarms in all facilities activated from the portable radios, and a procedure for responding to alarms.
39. Durable and intrinsically-safe radios.
40. In-vehicle chargers.
41. Radios that are safe in a wildland fire shelter.
42. Local maintenance support with response time less than 1 hour to a communications/dispatch center and 2 hours to a site.
43. Telephone interconnect via satellite capability at communications/dispatch centers.
44. Dispatch able to connect talkgroups “on the fly.”

45. More recorded channels.
46. Interoperability between the County system and Albany, BART and the City of Oakland.
47. Agency tactical channels.
48. Dedicated, incident-based channels.
49. Users training on use of radio functions.
50. Unit identifier of a calling radio displayed at communications/dispatch centers.
51. Integrated mapping over the mobile data computers.
52. Video in the vehicles.
53. Mobile data computer capability to between Mobile Data Units.
54. BRCSA System Attribute Ranking.

4.1.2 Online Survey Results

In addition to the questions asked during the group agency meetings, Alameda and Contra Costa County member agency users, dispatchers and technical points of contact were asked to participate in an online survey that captured their needs in a radio system. These results are included in TABLE C-5 of APPENDIX C.

5.0 Regulatory Issues

Several significant regulatory or standards-related issues will impact the planning of a land mobile radio (LMR) system:

- Migration to Digital Technology
- Narrowbanding of LMR Frequencies below 512 MHz
- The 700-MHz Public Safety Band
- The 800-MHz Rebanding Plan
- Reallocation of the 2-GHz Microwave Bands to Other Services
- The 4.9-GHz Band

Each of these issues will directly affect the technology that will be available to EBRCSA.

5.1 Migration to Digital Technology

The migration to digital technology is not, strictly speaking, a regulatory issue. The Federal Communications Commission (FCC) has not mandated the use of digital modulation in any LMR band except for the new 700-MHz public safety band. However, digital modulation has been encouraged by several regulatory proceedings.

This migration is driven by several factors:

- Rapid growth of wireless communications technologies and services, which has created an increased demand for radio frequency (RF) spectrum;
- The need for improved security of voice communications;
- The need to transfer more varieties of data; and
- The availability of increased computing power for mobile and portable radio equipment.

For decades, LMR systems have utilized analog FM voice technology. The first trunked systems were based on analog modulation. More recently, the major vendors of trunked radio systems offered dual-mode systems, supporting both analog and digital modulation. Now, the largest trunked radio system manufacturer, Motorola, only offers digital trunked radio systems. Motorola's largest competitor, Tyco Electronics, continues to offer dual-mode trunked systems, but is focusing product development on its digital systems. Most conventional radio systems are still analog, but digital systems are increasing in number.

5.1.1 Digital Communications Techniques

One of the primary advantages of digital communications is the ability to improve spectrum efficiency by increasing the number of communication paths or circuits per radio frequency (RF) bandwidth. In LMR systems, there are two main techniques for accomplishing this: frequency-division multiple access (FDMA) and time-division multiple access (TDMA).

In an FDMA system, spectrum efficiency is improved by dividing an existing RF channel into two (or more) narrower channels with one voice channel for each RF channel. In a TDMA system, spectrum efficiency is improved by dividing the channel into two or more time slots with one voice channel per time slot. For example, consider an existing system in the VHF or UHF band operating on 25-kHz channels. Under the FCC's narrowbanding plan, the licensee can either convert its system to operate in 12.5-kHz channels (the FDMA solution) or continue to use a two-slot TDMA solution in 25-kHz channels. In either case, the spectrum efficiency mandate is achieved by creating two voice channels per 25 kHz of spectrum instead of one.

5.1.2 Advantages of Digital Technology

5.1.2.1 Increased Capacity

As explained above, the main potential advantage of digital technology is the increased capacity generated by improved spectrum efficiency. Creating two or four voice channels per 25 kHz of spectrum doubles or quadruples capacity.

5.1.2.2 Signal Recovery

An analog repeater simply retransmits the signal it receives (along with noise and interference), while a digital repeater performs error correction on the received signal and retransmits it, removing noise and interference in the process.

A similar process takes place in a digital mobile or portable radio. The subscriber unit performs error correction on the received signal, providing better audio quality in weak-signal areas at the fringes of the coverage area.

The drawback to this is that, to the user, there is no sense of signal degradation at the fringes. Instead, audio simply disappears suddenly at the limits of radio coverage. Conversely, analog voice quality gradually degrades as the user approaches the fringes of the coverage area and thus provides the user some warning that they may soon be out of range.

5.1.2.3 Encryption

Although analog encryption schemes are still available for conventional radio systems, trunked radio system vendors only offer digital encryption. Digital encryption is more secure than analog encryption and does not reduce understandability as older methods did.

Even without encryption, digital systems provide some protection against casual eavesdropping because most scanners cannot decode digital signals. However, because there are digital scanners capable of decoding and tracking trunked digital radio systems, encryption is the only way to ensure security.

5.1.2.4 Mobile Data

Digital modulation schemes offer the potential for improvements in data rates for mobile data applications. Until recently, most LMR vendors offered a data rate of 19.2 kbps per 25-kHz channel. This meets the FCC regulatory requirements for narrowbanding in the VHF and UHF bands and for the new narrowband channels in the 700-MHz public safety band. However, newer technology utilizing scalable adaptive modulation (SAM) offers data rates from 32 to 96 kbps in a 25-kHz channel.

In addition, higher data rates are possible in broadband channels in the 700-MHz band and the new 4.9-GHz public safety band. These broadband channels are compatible with commercial technologies such as WiFi and CDMA.

5.1.3 Disadvantages of Digital Technology

5.1.3.1 Cost

The costs associated with digital technology have been significantly higher than with analog technology, but digital equipment prices continue to drop. We expect that eventually the difference in price between analog and digital systems will no longer be an issue. At the present time, digital infrastructure equipment like repeaters and voters is about ten percent more expensive than comparable analog or dual-mode equipment, while digital subscribers can be 30 to 50 percent more expensive than analog subscriber units.

5.1.3.2 Interoperability

Interoperability remains a challenge for everyone, but especially for digital radio systems. Consider the following:

- Analog conventional radio systems offer true over-the-air compatibility—unless the systems are in different frequency bands.
- Historically, trunked radio systems from different vendors do not provide over-the-air compatibility with neighboring systems. In order to provide communications between dissimilar systems, radio vendors must provide patches or other fixes that allow users to talk with each other on an as-needed basis. The alternative is to specify direct over-the-air compatibility with neighboring systems, which typically results in a sole-source procurement.
- Even trunked radio systems from the same vendor may not be able to communicate with each other. New subscribers may be able to communicate on older systems, but the older subscriber units may not work on the new systems. This provides "halfway" compatibility.

These problems continue to make interoperability with adjacent jurisdictions using diverse systems and frequency bands a serious technical and operational challenge.

5.1.3.3 Latency

Digital radio systems have an inherent latency, which is the time it takes to translate an analog voice signal into a digital format and then translate it back to analog voice at the receiver. This latency can be minimized within a single radio system, but when two systems are patched together, the analog-to-digital-to-analog conversion is performed twice rather than once, doubling overall latency and causing greater difficulty for field personnel.

5.1.4 Project 25

The Association of Public-Safety Communications Officials International (APCO), in conjunction with the Telecommunications Industry Association (TIA) and others, initiated APCO Project 25 (P25) to promote a single non-proprietary set of standards for digital radio communications. The purpose of the standards was two-fold:

- to improve interoperability between law enforcement agencies; and
- to provide greater competition and cost savings in the procurement of radio equipment.

5.1.4.1 Phase I

P25 standards are being developed in two phases. Phase I, designated ANSI/TIA/EIA-102, is an FDMA technology based on one voice or data channel per 12.5-kHz RF channel. Phase I standards are basically complete, though some improvements are still needed. The standards leave room for vendors to add proprietary features that go above and beyond the P25 standards.

5.1.4.2 Phase II

Phase II has several goals. One goal is to define technology standards that will provide one voice channel per 6.25 kHz of spectrum. The P25 committee is currently focusing its efforts on a TDMA standard based on a two-slot 12.5-kHz channel. The standard requires that any Phase II equipment must be backward-compatible to communicate in Project 25 Phase I mode.

Phase II will also define IP-based interconnection ("inter-subsystem interface" or ISSI) standards for P25 radio systems from different manufacturers. This will allow seamless roaming and wide-area calling across multiple radio systems.

5.1.4.3 Compliance Assurance

There has been much concern that P25-compliant equipment from various manufacturers is not necessarily interoperable. The P25 standards are vague and leave room for vendors to add proprietary features. With so much attention currently focused on interoperability, the National Institute of Standards and Technology (NIST) are working with TIA to develop the P25 Compliance Assurance Program (CAP). Soon there will be definitive information available to assure that P25 equipment really does interoperate.

5.1.5 TSB-88

Before digital modulation technologies were developed, analog radio systems were designed based on a large body of empirical knowledge. Engineers were able to draw upon years of collective experience in the propagation characteristics of analog radio systems, translating acceptable communications to signal level targets. This is not the case with the new digital technologies.

Each digital modulation technique has different characteristics, and each manufacturer's products may have different error correction capabilities. As a result, very little information has been published on digital propagation outside of information published by vendors on their unique products and coverage philosophies.

In an effort to fill the need for a common reference point in the field of digital radio propagation, the Telecommunications Industry Association/Electronic Industries Alliance (TIA/EIA) released Telecommunications Systems Bulletin 88 (TSB-88), *Wireless Communications Systems - Performance in Noise and Interference-Limited Situations - Recommended Methods for Technology-Independent Modeling, Simulation, and Verification*. Although not a true regulatory (FCC-inspired) action, TSB-88 and its latest revisions have already had an effect on the design of two-way radio systems.

TSB-88 is a beginning step, or basic guideline, for defining and predicting digital/narrowband propagation. It defines many of the elements of radio system coverage in common terms. It includes sections devoted to service area, testing methodology, propagation models, reliability, and noise and frequency coordination. It has achieved "quasi-standard" status, in that no other document or statement on the subject exists. Once there is more experience in the actual field performance of digital systems, these lessons can be applied to the provisions of TSB-88.

The design of any radio system involves a certain degree of risk. As the vendor's engineers approach each project, they must account for this risk factor in their overall system design. A system designed with an overly optimistic propagation model runs the risk of not meeting the coverage requirements of the purchaser. A design that is overly conservative can reduce this risk to negligible levels, but the price of the system may be exorbitant. TSB-88 takes a very conservative approach to radio propagation and system design. This encourages a design that provides reduced risk for the vendor but possibly higher expense for the customer.

CTA recommends, and will assist EBRCSA in designing, a radio system that considers the provisions of TSB-88. However, designing the system to meet all of the actual and implied recommendations of TSB-88 may lead to an overdesigned system and excessive costs. Because of its "quasi-standard" status, TSB-88 "compliance" will be an issue in any liability or conflict situation. We recommend that TSB-88 be taken into *consideration* during the design of the system but that the provisions of TSB-88 be applied appropriately to the unique needs of EBRCSA.

5.2 Narrowbanding of LMR Spectrum below 512 MHz

In 1992, the FCC began a proceeding to increase spectrum efficiency in the Private LMR (PLMR) bands below 512 MHz. The "Refarming Proceeding", as it became known, introduced major changes in these bands.

5.2.1 New Narrowband Channels

The FCC created new narrowband channels in the 150-174 (VHF High), 421-430, 450-470 and 470-512 MHz (UHF) bands.

In the VHF highband, where existing 25-kHz (wideband) channels were spaced at 15 kHz, new narrowband channels were created 7.5 kHz from existing channels. The new channels may only be licensed for bandwidths of 12.5 kHz or less.

In the UHF bands, where existing 25-kHz channels were spaced 25 kHz apart, new channels were created at 12.5 kHz and 6.25 kHz from existing channels. The channels 12.5 kHz from existing channels are available for licensing at 12.5-kHz or less bandwidths, and those 6.25 kHz from existing channels are available for licensing at 6.25-kHz or less bandwidths.

The new channels are available for licensing now, but availability may be limited by wideband incumbents operating on the adjacent channels.

5.2.2 Narrowband Equipment Requirements

All new LMR equipment placed on the market today must be capable of operating at a spectrum efficiency of one voice channel per 12.5 kHz of channel bandwidth. This can be accomplished by using either FDMA technology, transmitting a single voice channel in 12.5-kHz RF channel, or TDMA technology, transmitting two voice channels in a 25-kHz RF channel. (For data transmitting equipment, the efficiency standard is 4800 bps per 6.25 kHz of channel bandwidth.)

Although new equipment must be capable of operating in more efficient modes, licensees are still allowed to operate this equipment at the old wideband efficiency standard of one voice channel per 25 kHz of channel bandwidth.

In 1995, when these rules were adopted, the FCC believed that the congested conditions in the refarming bands would provide a "natural inducement" for users to migrate to narrowband equipment. However, very few incumbents have migrated to the narrower bandwidths, so the FCC reconsidered its decision that the migration be wholly voluntary.

5.2.3 Deadline for Wideband Equipment Manufacture

The FCC decided to prohibit manufacture and importation of equipment capable of operating at only one voice channel per 25 kHz of bandwidth after January 1, 2011. At that time, new equipment must be capable of operating at the 6.25-kHz efficiency standard.

5.2.4 Deadline for Migration

The deadline for conversion to 12.5-kHz efficiency is January 1, 2013 for all licensees. After that date, all licensees in the bands 150-512 MHz must operate at one voice channel per 12.5 kHz of bandwidth. Users may still use 25-kHz channels as long as the spectrum efficiency standard is met (two voice channels).

The FCC has declined to set a deadline for conversion to 6.25-kHz efficiency.

5.2.5 Deadline for Wideband Applications

The FCC also set January 1, 2011 as the deadline for applications for new wideband licenses and modifications to existing wideband licenses. This allows users flexibility to maintain and expand existing systems until two years before the migration deadline.

5.2.6 Trunking in the VHF and UHF Bands

As part of the Refarming Proceeding, the FCC established rules for trunking in the VHF and UHF bands. The rules allow trunking as long as concurrence is obtained from affected licensees within 70 miles of the proposed trunked station. The term "affected licensees" refers to stations with assigned frequencies 15 kHz or less from a proposed trunked station with 25-kHz bandwidth, 7.5 kHz or less from a proposed trunked station with 12.5-kHz bandwidth and 3.75 kHz or less from a proposed trunked station with 6.25-kHz bandwidth. In lieu of concurrence, an applicant may provide an engineering study that demonstrates that the proposed station interference contour does not overlap the affected licensee's service territory. Rules for trunking below 512 MHz require so much coordination with neighboring licensees that they make the implementation of trunking systems in these bands difficult.

5.2.7 Impact of Narrowbanding on Radio Systems in Alameda and Contra Costa Counties

Radio system owners in Alameda and Contra Costa counties may legally continue to operate their existing 25-kHz VHF and UHF systems until 2013, but will eventually face a reduction in bandwidth, which may result in a reduction in coverage. The FCC's decision provides sufficient time to plan for the transition.

If an existing wideband radio system is adequate, it may make sense to maintain it as is until the transition date is closer. However, major new investments in equipment should be based on more spectrum efficient technologies.

5.3 The 700-MHz Public Safety Band

The 700-MHz Public Safety Band was allocated by the FCC in response to the Balanced Budget Act of 1997 (BBA 97). The BBA 97 mandated that, as part of the digital television (DTV) transition, TV broadcasting cease on Channels 60-69, and 24 MHz of the recovered spectrum be allocated to public safety communications.

5.3.1 Digital TV Deadline

The BBA 97 required that the DTV transition be completed by December 31, 2006, but added provisions that could have delayed the transition indefinitely.

In 2005, because of the slow pace of the transition, and because of the increased focus on public safety communications and interoperability, Congress passed the Digital Television and Public Safety Act of 2005, which set a date certain of February 17, 2009 as the deadline for conversion of all TV stations to DTV and cessation of broadcasting in channels 60-69.

5.3.2 Objectives

The FCC originally established the public safety band at 764-776/794-806 MHz. The FCC's decision in August 2007 moved the band to 763-775/793-805 MHz. The FCC adopted rules to provide spectrum efficiency, interoperability and flexibility. The band was a combination of narrowband channels (primarily for voice communications) and wideband channels for data communications. Licensees are allowed to aggregate channels to create wider channels to support TDMA technology and to provide higher data rates.

5.3.2.1 Narrowband Channels

Half of the band is allotted to 960 narrowband (6.25-kHz) channels. Originally, these 960 channels were split into two segments, 764-767/794-797 MHz and 773-776/803-806 MHz. These have now been consolidated and moved to 769-775/799-805 MHz. The FCC seeks to promote spectrum efficiency by requiring a standard of one voice channel, or one data channel of 4800 bps, per 6.25 kHz of bandwidth. The FCC has not mandated a specific technology for meeting this requirement, but all systems licensed for this band must use some form of digital modulation.

5.3.2.1.1 Channel Aggregation

Channels were allotted in groups of four. This allowed a licensee flexibility to aggregate two or four narrowband channels to create a single 12.5- or 25-kHz channel, as long as the overall spectrum efficiency is one voice channel, or one data channel of 4800 bps, per 6.25 kHz.

In some regions of the country, including Region 6 (Northern California), regional planning committees have elected to allot channels in groups of two. This assumes that the dominant technology to be used in the band will be a two-slot TDMA solution (such as Project 25 Phase II). This method of allotting channels eliminates the problem of "orphaned channels," 12.5-kHz channels left when a licensee implements a 12.5-kHz system in 25-kHz channel allotments and doubles the total number of available channels.

5.3.2.1.2 Deadline for 6.25-kHz Efficiency

A licensee is allowed to operate at 12.5-kHz efficiency, but only until 2017. By 2015, all equipment manufactured and marketed for use in the 700-MHz band must meet the 6.25-kHz efficiency mandate, and no new applications for systems operating at 12.5-kHz efficiency will be accepted. By 2017, all systems in the band must operate at 6.25-kHz efficiency.

5.3.2.1.3 Regional Planning Committees

Most of the narrowband channels will be administered by regional planning committees in the same fashion as the 800-MHz NPSPAC band has been. The regions are the same as at 800-MHz with a few exceptions (Michigan and Connecticut). Regional planning committees are in various stages of forming and preparing plans for approval by the FCC. As of the writing of this report, seven regional plans have been approved, six more have amendments pending approval and ten more are pending initial approval. The Region 6 (Northern California) plan is in process but has not been submitted to the FCC.

5.3.2.1.4 State Licenses

Recognizing the need of states for frequencies across a wide geographic area, the FCC issued state licenses for 192 narrowband channels. These licenses are not subject to the regional planning process. The license grants require states to provide "substantial service" to their populations by specific deadlines. If the deadlines are not met, the licenses will be modified accordingly. Frequencies that are unused will revert to the general use spectrum to be administered by regional planning committees.

5.3.2.1.5 Interoperability Spectrum

The narrowband channel plan includes 128 interoperability channels. These channels are administered by State Interoperability Executive Committees (SIECs). The FCC requires the use of Project 25 Phase 1 common air interface on these channels.

5.3.2.2 Broadband Channels

Until 2007, the other half of the 700-MHz band was allotted to wideband (50-kHz) channels at 767-773/797-803 MHz. These channels were envisioned for high-speed

data systems. Three 50-kHz channels could be aggregated to create a single 150-kHz channel with a minimum data rate of 384 kbps. In August 2007, the FCC reorganized the spectrum to create a single 10-MHz spectrum block for broadband communications.

5.3.2.2.1 Public/Private Partnership

In August 2007, the FCC released a Report and Order to reorganize the wideband spectrum and create a 10-MHz spectrum block at 763-768/793-798 MHz to be licensed to a single non-profit "Public Safety Broadband Licensee." This licensee will be responsible to work with a commercial licensee of the "D Block" of 700-MHz commercial spectrum to build a nationwide broadband network for the use of local public safety users. The 700-MHz Public/Private Partnership are intended to allow commercial use of the spectrum on a secondary basis while maintaining public safety pre-emptive priority. In an emergency, public safety licensees will have access to the D-Block spectrum as well.

In November 2007, the FCC selected the Public Safety Spectrum Trust (PSST) to be the Public Safety Broadband Licensee. PSST's first order of business was to create a "Bidder Information Document" for prospective D Block licensees. This document outlined the needs, desires and expectations of public safety agencies for the proposed broadband network. The much-anticipated auction of 700-MHz spectrum concluded in March 2008 and the only bid on the D Block did not meet the reserve price. The failure of the auction has resulted in much finger-pointing, but most commentators agree that requirements for coverage of 99.3 percent of the population, the need for "hardening" of sites, and the need to negotiate a service agreement with the PSBL in a short period of time or face the forfeiture of $150 million were contributing factors.

5.3.2.2.2 Proposed Changes

Since March 2008, the FCC has released two further notices of proposed rule-making (FNPRMs) seeking to remove the obstacles that scared off potential D-Block bidders in the first auction. Among the proposals are the following:

- Instead of a single nationwide license, allow licensing on a regional basis, with the regions based on the 55 regional planning committee regions.
- The technology for the nationwide network will be either LTE (short for Long-Term Evolution) or WiMAX, the technologies of choice for commercial wireless third-generation (3G) networks.
- All 20 MHz of the spectrum in both the D Block and the public-safety band will be used to create a single consolidated network. The proposals clarify circumstances where public-safety entities are given priority over commercial users.
- Licensee(s) will have 15 years instead of ten years to build the system and the build-out requirements are adjusted accordingly.
- Require changes to the by-laws and composition of the PSBL.
- Increase the amount of money available to pay for reconfiguration of 700-MHz incumbent licensees from $10 million to $27 million.

Final rules have not been released. We expect rules will be adopted and a new auction for the D Block will be held sometime in 2009.

5.3.3 Availability

With the pending rule changes and auction, the 700-MHz band remains in flux. Existing licensees cannot be relocated until the D Block licensee is selected. Then these licensees will have to relocate, with expenses paid by the D Block licensee. Regional Planning Committees have had to rewrite their plans to address the changes to the narrowband channels and the subsequent repacking of channel allotments. Although this process is less complex than the 800-MHz rebanding situation, it has created some confusion.

The proposed rules would require all existing narrowband licensees to be relocated within one year after funding is obtained from the D Block licensee. Since the auction will not take place until 2009, this means that relocation of these licensees will probably not be completed until 2010. This may delay the availability of narrowband spectrum in some locations.

After February 17, 2009, analog TV stations will cease operations, removing a great obstacle to the implementation of 700-MHz systems. Narrowband channels can be licensed now wherever an RPC has an approved plan with the FCC and the channels selected comply with the latest FCC channel plan. The draft Northern California plan allots 57 12.5-kHz channels to Alameda County and 40 channels Contra Costa County.

5.4 Rebanding the 800-MHz Band

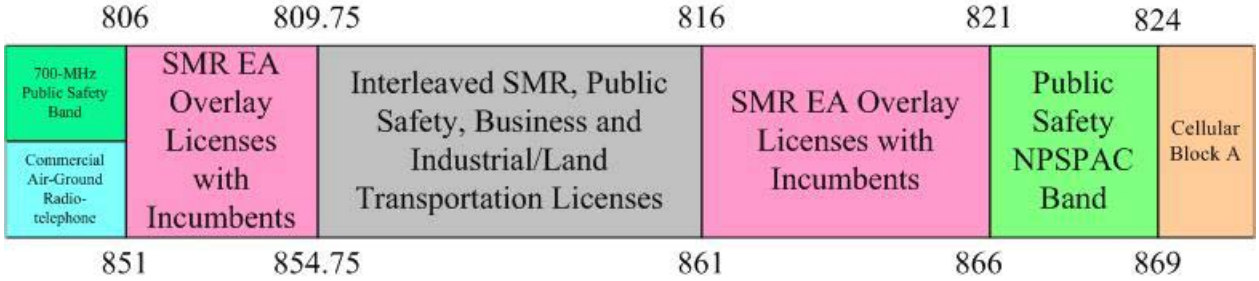
By this time nearly everyone in the field of two-way communications is familiar with the 800-MHz rebanding situation. Rebanding began in 2005 and was slated to be complete by June 26, 2008. That date has passed, and the end is nowhere in sight.

The original rebanding proposal was introduced in 2001 when, in response to documented interference issues, Nextel Communications proposed a drastic realignment of the 800-MHz band. In 2004, the FCC adopted a rebanding plan with the goal of completing the process in three years.

5.4.1 Before Rebanding

5.4.1.1 Frequency Allocations at 800-MHz

The 800-MHz band evolved over the years to produce the arrangement illustrated below. The segments 806-809.75/851-854.75 and 816-821/861-866 MHz were licensed geographically by Economic Areas (EAs) to the Specialized Mobile Radio (SMR) Service with some incumbent public safety and other licensees who were grandfathered when the EA licenses were auctioned.



The segment 809.75-816/854.75-861 MHz was allocated to four categories of users (SMR, Public Safety, Business, and Industrial/Land Transportation), with the different categories interleaved.

The segment 821-824/866-869 MHz, known as the NPSPAC band, is allocated solely to Public Safety.

Above 824 and 869 MHz are the cellular blocks A and B. Below 806 MHz is the new 700-MHz Public Safety band and its remaining incumbent TV stations. The band 849-851 MHz is the Commercial Air-Ground Radiotelephone Service.

5.4.1.2 Interference Mechanisms

The reason for rebanding has been the many reports of interference to 800-MHz public safety radio systems from Specialized Mobile Radio (SMR), Enhanced SMR (ESMR) and cellular telephone systems (collectively referred to as Commercial Mobile Radio Services or CMRS) in the 800-MHz bands.

Most public safety radio systems are designed to cover as much territory with as few sites as possible. This leads to systems with sites located at high elevations and operating at high power levels. Mobile and portable receivers for these systems are relatively sensitive to weak signals.

Modern cellular and ESMR systems are designed to reuse the limited number of channels as often as possible in order to support the maximum number of customers. In contrast to public safety, cellular sites are located at lower elevations with lower power levels.

When a public safety radio is operated in close proximity (by frequency and geography) to a CMRS site, the potential for interference increases. The problem is exacerbated by the high duty-cycles of SMR systems.

The three main categories of interference involved are intermodulation, receiver desensitization and transmitter sideband noise.

Intermodulation is caused by the undesired mixing of two or more frequencies. This mixing produces signals at frequencies that are the combination of sums and differences of the frequencies being mixed. Intermodulation can take place in transmitters, receivers or elsewhere and creates unwanted signals that block desired signals. This is especially a problem when the desired signal is weak as in traditional noise-limited systems.

Receiver desensitization (or “desense”) is caused when a nearby strong signal overloads the “front-end” amplifier of a receiver, reducing the gain of the amplifier in the radio and thereby inhibiting its ability to receive the desired signal. The effect to the user is the creation of “holes” in radio system coverage. A mobile or portable radio operating near an ESMR site will simply not be able to hear calls from its own system.

Transmitter sideband noise is produced by the modulation of the carrier frequency. Modulation produces frequencies above and below the carrier. The FCC sets limits as to how much energy can be transmitted beyond the limits of a channel, but when a transmitter is nearby, sideband noise can override the weaker desired signal.

5.4.2 The FCC Rebanding Plan

After much debate, the FCC adopted the following plan:

(1) All non-Nextel (now Sprint Nextel) incumbents would be relocated from the 806-809/851-854 MHz General Category band. These licensees would be relocated to former Sprint Nextel channels in the 809.75-816/854.75-861 MHz band.

(2) The NPSPAC band is being moved from 821-824/866-869 MHz to the new NPSPAC band at 806-809/851-854 MHz. In most instances, NPSPAC licensees will simply change frequencies by 15 MHz.

(3) Existing Public Safety systems and non-cellular Business, Industrial and Land Transportation (B/ILT) and SMR systems operating on interleaved channels between 809-816/854-861 MHz will continue to operate on those channels.

(4) Sprint Nextel will relocate all of its 800-MHz operations to the 817-824/862-869 MHz band, and will vacate all channels it now uses in the 806-817/851-862 MHz band segment. Public safety agencies and later critical infrastructure industries (CII) will have exclusive access to all channels vacated by Sprint Nextel in the interleaved portion of the band below 817/862 MHz for a limited period of time.

(5) The FCC created an Expansion Band at 815-816/860-861 MHz. Incumbent Public Safety licensees will be given the option to relocate from this band to avoid potential interference from the new ESMR band above 817/862 MHz.

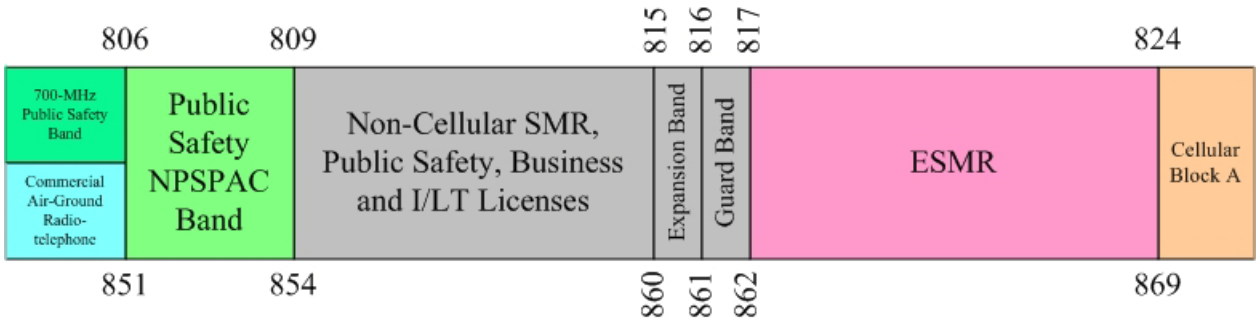
(6) The FCC also created a Guard Band at 816-817/861-862 MHz. Any 800 MHz licensee may relocate to this spectrum, but will be afforded less protection from interference than licensees in the lower part of the 800-MHz band.

(7) Non-Sprint Nextel ESMR operations below 816/861 MHz may stay where they are, but will be subject to a stringent non-interference obligation.

(8) Sprint Nextel has received 10 MHz of spectrum at 1910-1915/1990-1995 MHz.

(9) All costs for all licensees affected by band reconfiguration will be paid up front by Sprint Nextel.

Below is an illustration of the 800-MHz band allocations after the transition is completed. In certain parts of the country, most notably border areas and areas served by SouthernLINC, the plan is different.



5.4.3 Rebanding Management

The FCC ordered the five largest stakeholders in the 800-MHz band to select a Transition Administrator (TA) to oversee the process. The selection team chose BearingPoint, a management consulting firm, and its partners, Squire, Sanders & Dempsey L.L.P, and Baseline Telecom, Inc.

The TA is responsible to oversee the administrative and financial aspects of band reconfiguration, provide accountability for the reconfiguration process and help facilitate band reconfiguration with minimal disruption to licensees, particularly public safety entities. It also authorizes the disbursement of funds for band reconfiguration and resolve funding disputes through mediation.

5.4.4 Negotiation Process

Each licensee must negotiate separate agreements with Sprint Nextel for planning funding (PFA) and for actual frequency relocation. The planning funding agreement is optional but highly recommended for any beyond the simplest 800-MHz radio systems. The TA must review and approve each agreement.

During the negotiation period, Sprint Nextel and the licensee seek to come to a frequency relocation agreement (FRA), including costs and schedule. If no FRA is reached during that time, the matter will be referred for resolution to the TA for a 30-working-day mediation period. If there is still disagreement at that time, it will be sent to the FCC for *de novo* review.

5.4.5 Timetable

The TA's reconfiguration schedule was based on four reconfiguration "waves," with each NPSPAC region assigned to one of the waves. Each wave consisted of two stages. Stage 1 began the rebanding process for licensees on channels 1-120 (806-809/851-854 MHz), while Stage 2 began the rebanding process for licensees in the Expansion Band or in the NPSPAC band. By this time, all licensees with affected frequencies, except those near the Mexican border, should be actively involved in the rebanding process.

Wave 1, Stage 1 rebanding officially began on June 27, 2005. The schedule was supposed to provide for completion of band reconfiguration within 36 months (i.e., by June 26, 2008). However, that date has passed, and many public safety licensees are still in negotiations. The process of negotiations, planning and reconfiguration is painstaking. For example, the National Capital Region (NCR), consisting of the District of Columbia and several of the surrounding counties, requested a waiver to complete rebanding in January 2013. At the request of Fairfax County, Virginia, the FCC has given the NCR until November 2008 to produce a revised schedule. Other regions have schedules nearly as long.

5.4.5.1 Border Areas

In 2008, the U.S. negotiated an 800-MHz spectrum agreement with Canada, which will allow rebanding to proceed in areas near the Canadian border. The FCC recently announced that rebanding would begin in these areas on October 14, 2008 and should be completed by April 14, 2011.

There is no news regarding an 800-MHz spectrum agreement along the Mexican border. Until an agreement is finalized, the FCC has exempted border-area licensees from beginning the rebanding process until they receive a frequency proposal report (FPR) from the TA.

5.4.6 Application Freeze

During the negotiation periods, when the FCC announced the beginning of the transition for a particular region, there is a temporary freeze on new 800-MHz applications within 70 miles of that region. The freeze will begin 30 days before the voluntary negotiations period and end 30 working days after the mandatory negotiations period—approximately eight months. At the time of this report, most of the nation is under a licensing freeze because rebanding negotiations are ongoing.

The FCC will grant a special temporary authority (STA) to applicants during the freeze period, but it determines on a case-by-case basis whether systems licensed under the STA are eligible for reimbursement by Sprint Nextel.

5.4.7 Recent Developments

5.4.7.1 Sprint Nextel Waiver Request

Under the original rebanding rules, Sprint Nextel was required to vacate its pre-rebanding interleaved channels by June 26, 2008, the original deadline for the completion of rebanding. Since rebanding is nowhere near completion, Sprint Nextel requested a waiver from the FCC to allow it to remain on these channels until they are actually needed by public-safety licensees. The FCC has approved a plan that allows Sprint Nextel to vacate spectrum in stages, with all spectrum vacated by March 31, 2010.

5.4.7.2 Vacated Spectrum

Sprint Nextel is in the process of vacating spectrum in the 809-809.5/854-854.5 MHz band. The FCC plans to establish a website identifying available channels. Application procedures and filing windows will be announced by public notice. CTA will be watching diligently for this announcement and will inform our clients immediately.

5.4.8 Conclusion

The situation at 800 MHz is constantly changing. By this time, most licensees are already into the process of planning, while some have completed planning and a few have even completed rebanding. The process is going to extend far beyond 2008, but the FCC, the TA and Sprint Nextel are under pressure to keep it moving.

Licensees must make a careful accounting of all their equipment and systems in the 800-MHz band, including stored caches of mobiles and portables. Keep in mind interoperability arrangements and mutual aid channels. Licensees with frequencies in the 809-816/854-861 MHz band will remain where they are, but they may have subscribers or base stations programmed for mutual aid channels or neighboring 800-MHz systems, which will require reprogramming or retuning.

Licensees must make a careful accounting of time, expenses, and projected spending during retuning. Negotiations have been difficult, so sound documentation is required to justify all expenses.

Agencies in the process of submitting applications for 800-MHz frequencies must take the temporary application freeze into consideration when planning a new 800-MHz system. After the freeze, there may be more spectrum available for licensing. If frequencies are needed immediately, an applicant may see a special temporary authorization (STA). Soon, there may be new spectrum available in the 800-MHz band as Sprint Nextel vacates channels.

5.5 Fixed Microwave Services Relocation

5.5.1 The Lower 2-GHz Band

In 1994, the FCC reallocated the 1850-1990 MHz Fixed Microwave Services (FMS) (Lower 2-GHz) band to Personal Communications Services (PCS). Any microwave licensee remaining in the band after April 4, 2005 is now relegated to secondary status, meaning the system must not cause interference to PCS systems and is no longer subject to interference protection from PCS systems. If a PCS licensee requires use of the spectrum, the FMS licensee will be required to relinquish its license within six months of notification.

5.5.2 The Upper 2-GHz Band

The FCC has reallocated the 2110-2150/2160-2200 MHz FMS band to Emerging Technologies (ET), including the Advanced Wireless Service (AWS) and Mobile-Satellite Service (MSS). The 2110-2150 and 2160-2180 MHz segments have been reallocated to AWS, and the 2180-2200 MHz segment has been reallocated to MSS.

The FCC has decided that relocations in this spectrum will be subject to a mandatory negotiation period during which the ET licensees must negotiate with the FMS incumbents to relocate to comparable facilities. Once the mandatory negotiations period has ended, an ET licensee may relocate a FMS incumbent involuntarily. The ET licensee must still pay to relocate the incumbent, but there are no negotiations regarding costs.

5.5.2.1 Relocations by AWS Licensees

The first auction for AWS spectrum (2110-2150 MHz) ended in September 2006. Soon after, the winning bidders began notifying incumbent microwave licensees to begin negotiations. Each non-public safety microwave licensee will have two years to negotiate, while public safety will have three years. The relocation rules will sunset approximately 10 years later, at which time microwave licensees will be secondary to AWS licensees in the band.

5.5.2.2 Relocations by MSS Licensees

The involuntary relocation procedures for 2180-2200 MHz have already begun. MSS licensees may notify licensees in this band to relocate at any time with six months notice. However, the MSS licensees have been slow to implement services, and many MSS licensees have argued that they can peacefully coexist with incumbent microwave licensees. Relocation procedures will sunset December 9, 2013, after which time microwave licensees will be secondary to MSS in this band.

5.5.3 Conclusion

Any microwave licensee operating in the 1850-1990 MHz band should be making plans to relocate immediately to other spectrum. These licensees are secondary to PCS and may cause or be subject to harmful interference.

Incumbent microwave licensees operating in the 2110-2150/2160-2200 MHz band should continue to operate in the band until approached by an AWS or MSS licensee to negotiate relocation. All relocation costs will be paid by the ET licensee.

Based upon CTA's research of the FCC ULS database, there appear to be nine active 2-GHz calls signs in Alameda County and two active 2-GHz calls signs in Contra Costa County. CTA can assist the affected EBRCSA members in the relocation process, providing engineering, cost estimation and negotiation assistance.

5.6 The 4.9 GHz Band

5.6.1 Band Plan

In 2003, the FCC established rules for the 4.9 GHz Public Safety Band. The band is divided into 18 channels with bandwidths of 1 or 5 MHz. The purpose of this band is primarily to provide public safety users with spectrum for broadband communications applications. The spectrum can be used for data, voice, video, wireless local area networks, or any number of high-speed digital technologies. It is intended for mobile use, while temporary fixed use is allowed. The FCC envisions this band's use for the implementation of incident scene networks and wireless "hot spots" for high-speed data transfers of things like maps, building layouts, emergency medical service files, and wanted or missing person images.

Recently, changes were made to the rules for the 4.9 GHz band in order to allow the use of the IEEE 802.11 series of standards. It is hoped that this will make available a wider range of products for use in the band and will leverage the economies of scale to lower equipment prices.

5.6.2 Licensing and Coordination

A license will be issued to any public safety entity. The license will allow the entity to operate base, mobile or temporary fixed units throughout its legal jurisdictional area of operation. Applications must be made directly to the FCC; there is no frequency coordination or fees are required. Permanent, fixed, point-to-point services are allowed on a secondary, non-interfering basis, but require separate site licenses.

The spectrum is licensed on a shared basis, i.e., all users are licensed to all channels. Licensees must coordinate with each other to use the band. The FCC gave 700 MHz regional planning committees the option to establish regional plans for the use of the 4.9 GHz spectrum. Since the availability of the band and the development technologies to use it are so recent, the FCC agreed to give the planning committees extended time to prepare plans for the coordinated use of the band.
We encourage EBRCSA to apply for a 4.9 GHz license. There are no deadlines for implementing a system. This band may provide EBRCSA an opportunity to implement an inexpensive high-speed mobile data network.

6.0 Communications Facility Review

CTA conducted a review of the condition of both communications/dispatch centers and radio sites, at selected locations in Contra Costa and Alameda Counties. This section contains a summary of the facilities visited by CTA. A list of the EBRCS radio sites visited is contained in TABLE 6-1, and the dispatch centers visited are listed in TABLES 6-2 and 6-3. TABLE 6-1 also includes the radio sites contained in the Motorola Proposal for the EBRCS. For each facility, CTA summarizes the facility and comments on its ability to re-use the equipment facility in a new communication system.

6.1 Radio Sites organized by Site

The following sections describe the radio sites visited by CTA. The summary includes site conditions, equipment available and upgrades that will be necessary for a new radio system. TABLE 6-1 provides a listing of these sites.

6.1.1 Kregor Radio Site Conditions

The Kregor site has two shelters, two towers, and a shared generator for both shelters. The two existing towers have a medium load on them, but will need a structural analysis to determine if each is capable of handling new antennas. The existing fence and shelter can be used. The site will need manual CO_2 fire extinguishers and a UPS system. The grounding for the tower and shelter are satisfactory. The primary power and existing microwave equipment can be reused.

6.1.2 Shadybrook Radio Site Conditions

The Shadybrook site has one shelter, and utilizes six, 10-foot poles on a concrete platform as antenna supports. The antenna supports are heavily loaded and may not be able to carry more antennas. The existing gate and fence around the shelter can be used. The site will need manually operated CO_2 fire extinguishers, a generator and fuel tank, UPS, new microwave, upgraded primary power, and a fence and gate around the antenna supports. The new generator and fuel tank will need a new foundation and grounding system. The primary power is currently limited to 50 amps. The grounding for the shelter is satisfactory.

6.1.3 Marsh Creek Radio Site Conditions

The Marsh Creek site has one shelter and a 100 foot tower. The equipment room, in the shelter, is 14 x 9 feet. It currently has only 1 cabinet in the shelter. The tower is lightly loaded, but should have a structural analysis to determine if it is capable of handling new antennas. The site will need manually operated CO2 fire extinguishers, upgraded primary power, HVAC, generator and fuel tank, fence and gate, UPS, new microwave equipment, new grounding system for the shelter and tower, and a waveguide bridge from the shelter to the tower. The new generator and fuel tank will also need a foundation and grounding system.

6.1.4 Highland Radio Site Conditions

The Highland site has three shelters, four towers and two generators. The main shelter houses the County radio equipment. The second shelter houses the County microwave equipment. The third shelter houses CHP equipment. The 60-foot, guyed tower is heavily loaded with microwave antennas, and will require a structural analysis to determine if it is capable of handling new antennas. The west tower had a medium load, but should also have structural analysis to determine if it is capable of handling new antennas. The east tower is lightly loaded. The main shelter does not have room for more equipment. It also

has signs of rodents inside the shelter. The main shelter needs grounding improvements inside and outside. The second shelter does not have room for new equipment. CTA did not have access to the third shelter. We were informed that the County is planning to remove the 130-foot, guyed tower, and install a new self-supporting tower and shelter. The new shelter and tower will need a new foundation and grounding system. The primary power can be used.

6.1.5 Old Fire Station 53 Radio Site Conditions

The Old Fire Station 53 site is an unused fire station. It has 60 x 40 foot building and a small tower. The existing tower is lightly loaded, but should have a structural analysis to determine if it is capable of handling new antennas. The equipment is located in a large room in the south east corner of the building. The site does not currently have any microwave equipment. The building and tower will need new grounding system inside and outside. The site will need manually operated CO_2 fire extinguishers, HVAC upgrade, generator and fuel tank, UPS, and microwave equipment.

6.1.6 Contra Costa County Sheriffs (Glacier) Radio Site Conditions

The Glacier site is located next to the Contra Costa Sheriff's Communications/Dispatch Center. It has two shelters and a self supporting tower. The tower has a medium load and will need a structural analysis to determine if it is capable of handling new antennas. The existing fence and shelter can be used. The first shelter houses the County's radio and microwave equipment. CTA did not have access to the second shelter. The site will need manually operated CO_2 fire extinguishers, UPS, generator and fuel tank. The new generator and fuel tank will need a new foundation and grounding system. New P25, Phase 1 equipment is installed but not operational.

6.1.7 Cummings Peak Radio Site Conditions

The Cummings Peak site has one shelter, two towers, and a generator. The shelter has room for 3 more racks. The north tower is heavily loaded and will need a structural analysis to determine if it is capable of handling new antennas. The south antenna is lightly loaded, but also should have a structural analysis to determine if it is capable of handling new antennas. The site does have room for another shelter if needed. The site will need grounding improvements inside and outside the shelter, a new generator and fuel tank, upgraded HVAC and upgraded primary power. The microwave system can be used.

6.1.8 Sydney Radio Site Conditions

The Sydney site has one shelter and a small monopole tower. It is located next to an old wooden water tank in a residential neighborhood. The tower is heavily loaded and will need a structural analysis to determine if it is capable of handling new antennas. The shelter has inside measurements of approximately 7 x 13 feet. In this space there are 5 racks of equipment and there is room for possibly two more racks. The site will need manually operated CO_2 fire extinguishers, grounding improvements inside and outside the shelter, a microwave system, fence and gate, a generator and tank, UPS and upgraded HVAC. The new generator and fuel tank will need a foundation and grounding system. The primary power can be used.

6.1.9 Bald Radio Site Conditions

The Bald site has a shelter, a tower, and a generator. The shelter has three equipment vaults and houses the generator. The tower is heavily loaded, and will need a structural analysis to determine if it is capable of handling new antennas. The existing shelter, primary power, microwave system, generator, fence and gate can be used. The site will need manually operated CO_2 fire extinguishers, and UPS.

6.1.10 Rocky Ridge Radio Site Conditions

The Rocky Ridge site is owned by American Tower. It has two shelters and a tower. The north shelter contains Contra Costa County's equipment, along with other equipment. The 200-foot, guyed tower is heavily loaded and will need a structural analysis to determine if it is capable of handling new antennas. The County is planning to remove the dividing walls that separate the old generator from the equipment room. The new generator is located outside the shelter. This will provided more space for new equipment. The fence and gate are in poor shape and will need to be repaired or replaced. The shelter, generator, microwave system, and primary power can be used. The grounding system will need to be upgraded, inside and outside the shelter, and for the tower. The site will need manually operated CO_2 fire extinguishers, and a UPS.

6.1.11 Turquoise Radio Site Conditions

The Turquoise site has a shelter, monopole tower, UPS, and generator. The tower has a heavy load and should have structural analysis to determine if it is capable of handling new antennas. The shelter, generator, primary power, fence and gate can be used. The microwave system should be upgraded. Upgrades to the site's security may be necessary, as indicated by the amount of graffiti on the shelter and generator.

6.1.12 Pearl Reservoir Radio Site Conditions

The Pearl Reservoir site has a two-vault shelter, tower and generator. CTA did not have access to the site or inside the shelter. The tower has a medium load, but should have structural analysis to determine if it is capable of handling new antennas.

6.1.13 El Cerrito Radio Site Conditions

The El Cerrito site is attached to the El Cerrito Police Department office. It has a shelter, monopole tower, UPS, and generator. The tower has a medium load, but should have structural analysis to determine if it is capable of handling new antennas. The site is protected by a block wall and steel door. The shelter, generator, and primary power can be used. The microwave system should be upgraded.

6.1.14 Nichol Knob Radio Site Conditions

The Nichol Knob site has an underground vault, monopole tower, and generator. The vault requires a ladder to access it. The tower is heavily loaded, and should have structural analysis to determine if it is capable of handling new antennas. The equipment room has two portable air conditioning units and a UPS for Richmond's equipment only. The equipment room has four rows of racks and very little space for more racks. The primary power and the Contra Costa County microwave system can be used. The grounding system for the site needs improvement. The site will need manually operated CO_2 fire extinguishers. CTA did not have access to the generator or fuel tank.

6.1.15 San Ramon Valley Fire Radio Site Conditions

The San Ramon site is co-located with the San Ramon Valley Fire Communications/Dispatch center. The equipment room is housed in Fire Station 31's building. The site consists of the Fire Station building, tower, generator, and UPS. The tower is heavily loaded, and will need a structural analysis to determine if it is capable of handling new antennas. The site will need upgraded grounding inside the equipment room. The primary power, UPS, microwave system, generator, equipment room, fence and gate, can be used.

6.1.16 Contra Costa County Consolidated Fire Radio Site Conditions

The County Fire site located at the Contra Costa County Consolidated Fire Communications/Dispatch Center. It consists of a shelter and tower, and uses the same generator as the dispatch center. The tower has a medium load on it, but should have

structural analysis to determine if it is capable of handling new antennas. The shelter, microwave system, generator, fence and gate, can be used. The grounding for the site is satisfactory.

6.1.17 Pleasant Hill Police Radio Site Conditions

The Pleasant Hill site is located in the Pleasant Hill Police station. The site consists of the station building, monopole tower, UPS, generator and fuel tank. The equipment room is small and has no room for additional equipment racks. Pleasant Hill is planning to relocate their server equipment; this would free up the equipment room behind the LMR equipment room. The tower is lightly loaded, but should have structural analysis to determine if it is capable of handling new antennas. The primary power, generator, and UPS can be used. The grounding system is satisfactory.

6.1.18 Los Vaqueros Radio Site Conditions

The Los Vaqueros site consists only of a large shelter. The site does not have a tower, generator, UPS, or HVAC. The site will need manually operated CO_2 fire extinguishers, upgraded primary power, HVAC, generator and fuel tank, fence and gate, UPS, microwave system, tower, and new grounding system for the shelter. The new generator, fuel tank, and tower will need a foundation and grounding system.

6.1.19 Peter's Apollo Radio Site Conditions

The Apollo site is currently undeveloped. It will require a shelter, tower, generator and fuel tank. The new generator, fuel tank, tower and shelter will need a new foundation and grounding system.

6.1.20 Sunol Ridge Radio Site Conditions

The existing Sunol tower will need a structural analysis to determine if it is capable of handling new antennas. A new grounding system will need to be installed for the tower. The existing fencing and shelter can be used. The shelter will need a new grounding system both indoors and outdoors. The site will need manual CO_2 fire extinguishers, upgraded air conditioning, updated UPS, new generator and a tank. The new generator and fuel tank needs a foundation and grounding system. The primary power can be used. The analog microwave system is dated and needs to be replaced. New P25, Phase 1 equipment is installed but not operational.

6.1.21 San Leandro Hills Radio Site Conditions

The existing San Leandro tower will need a structural analysis to determine if it is capable of handling new antennas. A new grounding system will need to be installed for the tower. The existing fencing and shelter can be used. The shelter will need a new grounding system both indoors and outdoors. The site will need manual CO_2 fire extinguishers, upgraded air conditioning, and updated UPS. The primary power can be used. The transfer switch is not completely installed. The analog microwave system is dated and needs to be replaced. New P25, Phase 1 equipment is installed but not operational.

6.2 Communications/Dispatch Centers

The following sections describe the communications/dispatch centers visited by CTA. In these sections we summarize the conditions, equipment available and upgrades that will be necessary for the follow on radio system. TABLE 6-2 provides a dispatch center assessment matrix of the dispatch centers visited in each County.

6.2.1 Antioch Police Department Dispatch Center

The dispatch center for Antioch Police Department is 30' x 26', with task lighting for each position. The dispatchers use six monitors: three for CAD, one for security cameras, one

for radio, and one for telephone/911. The center uses security video monitors and a Dictaphone Logging recorder. They dispatch for these agencies: Antioch Police, Brentwood Police, and the Antioch Animal Services. The overall appearance of the dispatch center is neat and clean. The grounding system in the equipment room needs to be updated.

6.2.2 Contra Costa County Sheriff Dispatch Center

The dispatch center for Contra Costa County Sheriff is 30' x 60', with good lighting. The dispatchers use five monitors: two for CAD, one for radio, one for telephone/911, and one for mapping. They use Motorola CentraCom Gold Elite consoles and a Mercom Audiolog logging recorder. They dispatch for these agencies: Contra Costa County Sheriff, Danville Police, Lafayette Police, Moraga Police, Pittsburg Police, Oakley Police, Orinda Police, Ro Vista Police, San Ramon Police, County Animal Control and the Los Medanos College Police. The overall appearance of the dispatch center is neat and clean. The equipment room needs an updated grounding system.

6.2.3 Concord Police Department Dispatch Center

The dispatch center for Concord Police Department is 20' x 30', with fair lighting. The dispatchers use five monitors: two for CAD, one for GIS, one for radio, and one for telephone/911. They use Motorola CentraCom Gold Elite consoles. They dispatch for Concord and Clayton Police. The overall appearance of the dispatch center is neat and clean. The equipment room needs an updated grounding system.

6.2.4 Contra Costa County Consolidated Fire Department Dispatch Center

The dispatch center for Contra Costa County Consolidated Fire is 40' x 30', with poor lighting. The dispatchers use five monitors: three for CAD, one for radio, and one for telephone/911. They use Motorola CentraCom Gold Elite consoles and a Nice logging recorder. They dispatch for these agencies: Contra Costa County Fire Protection District, Rodeo-Hercules Fire Protection District, Crockett-Carquinez Fire Protection District, Moraga-Orinda Fire Protection District, Pinole City Fire Department, and East Contra Costa County Fire Protection District. The overall appearance of the dispatch center is neat and clean. The equipment room needs minor updating to the grounding system.

6.2.5 Pinole Police Department Dispatch Center

The dispatch center for Pinole Police Department is 16' x 22', with fair lighting. The dispatchers use five monitors: two for CAD, one for radio, one for telephone/911, and one for security video monitoring. They use Tyco Maestro consoles and a Dictaphone logging recorder. They dispatch for Pinole and Hercules Police. The overall appearance of the dispatch center is neat and clean. The equipment room needs an updated grounding system.

6.2.6 Pleasant Hill Police Department Dispatch Center

The dispatch center for Pleasant Hill Police Department is 25' x 30', with good lighting. The dispatch center acts as visitor reception for the police department. There is a possible security issue with the dispatch center open to the lobby. The lobby has a security door and intercom for access by visitors. The dispatchers use three monitors: one CAD, one for radio, and one for telephone/911. They use Motorola CentraCom Gold Elite consoles and a Nice logging recorder. The Pleasant Hill Police is dispatched from the Pleasant Hill Dispatch Center. The overall appearance of the dispatch center is neat and clean.

6.2.7 Richmond Police and Fire Department Dispatch Center

The dispatch center for Richmond Police and Fire Department is 40’ x 45’, with good lighting. The dispatchers use five monitors: three for CAD, one for radio, and one for telephone/911. They use Tyco Maestro consoles and a Pyxis Maxpro logging recorder. They dispatch to these agencies: Richmond Police and Fire, El Cerrito Police and Fire, Kensington Police, San Pablo Police and the Contra Costa Community College District Police. The overall appearance of the dispatch center is neat and clean. The equipment room needs an updated grounding system.

6.2.8 San Ramon Valley Fire Department Dispatch Center

The dispatch center for San Ramon Valley Fire Department is 25’ x 30’, with good lighting. The dispatchers use five monitors: three for CAD, one for radio, and one for telephone/911. They use Motorola CentraCom consoles and a Nice logging recorder. All agencies supported by the SRVFPD radio system are dispatched by the San Ramon Valley Fire dispatch center. The overall appearance of the dispatch center is neat and clean. The equipment room needs an updated grounding system.

6.2.9 Walnut Creek Police Department Dispatch Center

The dispatch center for Walnut Creek Police Department is 19’ x 25’, with good lighting. The dispatchers use five monitors: three for CAD, one for radio, and one for telephone/911. They use a Dictaphone logging recorder. They dispatch for Walnut Creek Police. The overall appearance of the dispatch center is neat and clean. The equipment room needs an updated grounding system.

6.2.10 Alameda County Fire

The dispatch center for Alameda County Fire is 30’ x 30’, with good lighting. The dispatchers use six monitors: three for CAD, one for fire alarm, one for radio, and one for telephone/911. They use Motorola CentraCom Gold Elite Consoles. The dispatch center uses Netclock and security video monitors. They dispatch to these agencies: Alameda County Fire, City of Alameda Fire, City of Union Fire, City of Fremont Fire, and Camp Park Combat. The overall appearance of the dispatch center and equipment room is neat and clean. The grounding system is fair.

6.2.11 Alameda County Sheriff Dispatch Center

The dispatch center for Alameda County Sheriff is 32’ x 26’, with good lighting. The dispatchers use five monitors: three for CAD, one for radio, and one for telephone/911. They use Motorola CentraCom Gold Elite Consoles. The dispatch center uses security video monitors. They dispatch for: Alameda County Sheriff, City of Dublin, AC Transit, Peralta College, Oakland Airport, Oakland Ports Castro Valley, San Lorenzo, and Camp Park Federal Police. The overall appearance of the dispatch center is neat and clean. The equipment room needs an updated grounding system.

6.2.12 Alameda Police Department Dispatch Center

The dispatch center for Alameda Police Department is 24’ x 17’, with good lighting. The dispatchers use five monitors: two for CAD, one for radio, one for mapping, and one for telephone/911. They use Motorola CentraCom Gold Elite Consoles. The dispatch center uses Netclock and security video monitors. They dispatch the Police Department and Public Works. The overall appearance of the dispatch center is neat and clean. The equipment room needs an updated grounding system.

6.2.13 Pleasanton Police Department Dispatch Center

The dispatch center for Pleasanton Police Department is 28’ x 20’, with good lighting. The dispatchers use five monitors: two for CAD, one for radio, one for mapping, and one for telephone/911. They use Motorola CentraCom Series 2 Consoles. The dispatch center

uses security video monitors. They dispatch for the Police Department, Animal Services, and Public Works. The overall appearance of the dispatch center is neat and clean. The equipment room needs an updated grounding system.

6.2.14 San Leandro Police Department Dispatch Center

The dispatch center for San Leandro Police Department is 25’ x 18’, with good lighting. The dispatchers use five monitors: two for CAD, one for radio, one for CAD and mapping, and one for telephone/911. They use Motorola CentraCom Gold Elite Consoles. The dispatch center uses security video monitors. They dispatch for the Police Department. The overall appearance of the dispatch center is neat and clean. The equipment room needs an updated grounding system.

6.2.15 East Bay Regional Park District Dispatch Center

The dispatch center for East Bay Regional Park District is 17’ x 36’, with good lighting. The dispatchers use four monitors: two for CAD, one for radio, and one for phone/911. They use Motorola CentraCom Gold Elite Consoles. The dispatch center uses security video monitors. They dispatch to these agencies: Park Police Department, Park Fire Department, and Park Rangers. The overall appearance of the dispatch center is neat and clean. The equipment room needs an updated grounding system and HVAC.

6.2.16 Fremont Police Department Dispatch Center

The dispatch center for Fremont Police Department is 50’ x 27’, with good lighting. The dispatchers use six monitors: one for CAD, one for radio, one for GIS/AVL, one for A Record S, one for ETS tracking, and one for telephone/911. They use Motorola CentraCom Gold Elite Consoles. The dispatch center uses security video monitors. They dispatch to the Police Department, Animal Services, and two regional Task Forces. The overall appearance of the dispatch center is neat and clean. The equipment room needs an updated grounding system.

6.2.17 Hayward Police Department Dispatch Center

The dispatch center for Hayward Police Department is 30’ x 15’, with good lighting. The dispatchers use four monitors: two for CAD, one for radio, and one for telephone/911. They use Positron AVTAC Consoles. The dispatch center uses security video monitors. They dispatch to these agencies: Police Department, Fire Department, and Community of Fairview Fire. The overall appearance of the dispatch center is neat and clean.

6.2.18 Newark Police Department Dispatch Center

The dispatch center for Newark Police Department is 12’ x 16’, with good lighting. The dispatchers use four monitors: one for CAD, one for CAD and mapping, one for radio, and one for telephone/911. They use Motorola CentraCom Gold Elite Consoles. The dispatch center uses security video monitors. They dispatch for the Police Department. The overall appearance of the dispatch center is neat and clean.

6.2.19 Union City Police Department Dispatch Center

The dispatch center for Union City Police Department is 18’ x 20’, with good lighting. The dispatchers use four monitors: one for Pinning Calls, one for Command Line Call In, one for mapping, and one for records management. They use Motorola CentraCom Gold Elite Consoles. The dispatch center uses security video monitors. They dispatch for the Police Department and Public Works. The overall appearance of the dispatch center is neat and clean. The equipment room needs an updated grounding system.

Table 6-1
Alameda and Contra Costa County Radio Sites

SITE NAME	SURVEYED	PROPOSED EBRCS SITE	LATITUDE	LONGITUDE	ELEVATION (ft.)	TOWER	ANTENNA TYPE	ERP (dBm)	SITE TYPE
40 Glacier	YES	YES	37-59-24.9 N	122-05-17.7 W	164	100			VHF
Bald Peak	YES	YES	37-53-00.7 N	122-12-18.4 W	1911	80			VHF
Cummings Peak	YES	YES	38-01-44.5 N	122-11-51.3 W	891	140			VHF
El Cerrito	YES	YES	37-54-58.7 N	122-18-40.1 W	95	60			800MHz
Highland Peak	YES	YES	37-48-52.7 N	121-48-30.0 W	2563	130			VHF
Kregor Peak	YES	YES	37-56-35.2 N	121-53-27.5 W	1888	140			VHF
Marsh Creek	YES	YES	37-53-41.7 N	121-51-48.5 W	731	100			VHF
Nichol Knob	YES	YES	37-55-13.1 N	122-22-55.6 W	350	50			800MHz/VHF
Old Fire Station 53	YES	YES	37-53-38.5 N	121-47-38.7 W	343	50			VHF
Pearl Reservoir	YES	YES	37-57-27.5 N	122-18-44.3 W	653	60			800MHz
Peter's Apollo	YES	YES	37-47-13.9 N	121-59-33.7 W	948				
Rocky Ridge	YES	YES	37-48-57.1 N	122-03-44.8 W	2010	200			VHF
San Leandro Hills	YES	YES	37-43-25.98 N	122-07-10.32 W	796	40			800MHz
Shadybrook	YES	YES	38-00-11.7 N	121-56-56.2 W	751	10			VHF
Sunol Ridge	YES	YES	37-37-11.4 N	121-55-21.6 W	2180	160			800MHz
Sydney Drive	YES	YES	37-52-02.2 N	122-03-07.3 W	747	30			VHF
Turquois	YES	YES	37-59-35.6 N	122-16-10.6 W	564	50			800MHz
Alameda P&T	NO	YES	37-46-35 N	122-15-09 W	7				
Altamont	NO	YES	37-42-45 N	121-39-43 W	1520	50			
Brittany	NO	YES	37-42-45.5 N	121-57-14.4 W	767				
Coyote Hills	NO	YES	37-32-26 N	122-04-53 W	207	70			
Crane Ridge	NO	YES	37-36-22 N	121-37-11 W	2899	60			
Doolan	NO	YES	37-42-38.5 N	121-49-04.8 W	698				
Fremont PD	NO	YES	37-33-01 N	121-58-06 W	52	70			
Garin WT	NO	YES	37-37-54 N	122-01-53 W	662	70			
Glen Dyer Jail	NO	YES	37-48-01 N	122-16-37 W	28	120			
Lawrence Berkeley Lab	NO	YES	37-52-32.1 N	122-14-45.6 W	824				
Skyline Reservoir	NO	YES	37-49-13.1 N	122-11-06 W	1472				
Walpert Ridge	NO	YES	37-39-20 N	122-00-05 W	1411	70			
Warm Springs	NO	YES	37-29-05.4 N	121-55-33 W	72	70			
CCC Consolidated Fire	YES	NO	37-55-36.5 N	122-04-44.1 W	138	100			VHF/UHF/800MHz
Los Vaqueros	YES	NO	37-49-00.5 N	121-46-42.8 W	2054				VHF
Pleasant Hill PD	YES	NO	37-57-43.1	122-04-08.7 W	37	100			UHF
San Ramon Valley Fire	YES	NO	37-48-34.1 N	121-59-33.5 W	392	50			VHF

Table 6-2
Alameda County
Dispatch Center Assessment Matrix

Dispatch Center Characteristic	Alameda County Fire	Alameda County Sheriff	City of Alameda PD	City of Pleasanton	City of San Leandro PD	East Bay Region Park District	Fremont PD	Hayward PD	Newark PD	Union City PD
Dispatch Center Size	F	F	F	F	F	F	G	F	F	F
Equipment Area Size	G	F	F	F	F	F	G	F	F	F
Expansion Capacity	F	F	F	F	F	F	G	F	F	F
Radio Console System	F	F	F	F	F	F	F	F	F	F
CAD System	F	F	F	F	F	F	F	F	F	F
9-1-1 Telephone System	F	F	F	F	F	F	F	F	F	F
PBX/Admin Telephones	F	F	F	F	F	F	F	F	F	F
Furniture	F	F	F	F	F	F	G	F	F	F
Lighting	F	F	F	F	F	F	G	F	F	F
HVAC	G	F	F	F	F	P	G	F	F	F
Reliability	G	F	F	F	F	F	G	F	F	F
Generator	F	F	F	F	F	F	F	F	F	F
UPS	F	F	F	F	F	F	F	F	F	F
Back-Up Provisions	F	F	F	F	F	F	F	F	F	F
Maintainability	F	F	F	F	F	F	F	F	F	F
Parking	G	G	G	G	G	G	G	G	G	G
Internal Facilities	G	F	G	G	F	F	G	F	F	F
Security	G	G	G	G	G	G	G	G	G	G
Dispatch Center Condition	F	F	F	F	F	F	G	F	F	F
Equipment Area Condition	F	F	F	F	F	P	F	F	F	F

G - Good: Needs no improvements, meets CTA's recommendation

F - Fair: Useable, but falls short of CTA's recommendation

P - Poor: Needs significant improvement

N - None: Not Present

U - Unknown

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Table 6-3
Contra Costa County
Dispatch Center Assessment Matrix

Dispatch Center Characteristic	Antioch PD	Contra Costa County Sheriff	Concord PD	Consolidated Fire	Pinole PD	Pleasant Hill PD	Richmond PD/FD	San Ramon Fire	Walnut Creek PD
Dispatch Center Size	F	G	F	G	P	F	G	G	P
Equipment Area Size	F	F	P	F	P	P	F	F	G
Expansion Capacity	P	P	P	F	P	P	P	F	F
Radio Console System	F	F	F	F	F	F	F	F	F
CAD System	F	F	F	F	F	F	F	F	F
9-1-1 Telephone System	F	F	F	F	F	F	F	F	F
PBX/Admin Telephones	N	G	F	F	F	F	F	F	F
Furniture	G	F	F	F	F	F	F	F	F
Lighting	P	F	P	P	P	F	F	F	F
HVAC	F	F	G	G	G	G	G	G	G
Reliability	F	F	F	G	F	G	F	F	G
Generator	F	F	U	G	F	G	G	F	G
UPS	F	F	F	F	F	F	G	F	G
Back-Up Provisions	F	F	F	F	F	F	F	F	F
Maintainability	F	F	P	F	F	F	F	F	G
Parking	F	F	G	G	F	G	G	G	P
Internal Facilities	F	F	F	F	F	F	F	F	F
Security	G	G	G	G	G	F	G	G	G
Dispatch Center Condition	F	F	F	G	F	F	G	G	F
Equipment Area Condition	F	F	F	F	P	F	F	F	G

G - Good: Needs no improvements, meets CTA's recommendation

F - Fair: Useable, but falls short of CTA's recommendation

P - Poor: Needs significant improvement

N - None: Not Present

U - Unknown

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7.0 Conclusions and Recommendations

Based on our research, analysis and discussions with Alameda and Contra Costa Counties, CTA Communications finds that EBRCSA is well-positioned to move forward with its radio and interoperability objectives. Both the overall strategy and the implementation steps taken to date by EBRCSA support these objectives. We further endorse the implementation of the P25, trunked, simulcast system. At the same time, we have identified significant opportunities for improving functionality, rounding out implementation and reducing costs. The section below presents nine specific recommended action steps, and describes the basis for these recommendations. We wish to thank the participants in this study from EBRCSA, Alameda County and Contra Costa County, whose cooperation and support enabled us to generate these conclusions and recommendations.

7.1 EBRCSA Project Phase 1 Objectives

During Phase 1, Needs Analysis, CTA was asked to assess the communications needs of agencies in Alameda and Contra Costa Counties. We completed this task through the use of onsite group agency meetings, an online survey and a thorough review of existing documentation. As part of this documentation review CTA performed a comprehensive review of the plans and options for the build-out of the East Bay Regional Communications System (EBRCS), including extensive meetings with the EBRCS planning team and the Motorola engineering team.

The ultimate goal of Phase 1 is to ensure that the technical and operational solutions implemented will actually meet the current and future communications needs of its users. This section of the Needs Analysis report presents CTA's recommendations and conclusions resulting from Phase 1 activities.

7.2 Initial Considerations

During our review of the proposed and partially implemented EBRCS standards based, 800 / 700 MHz, P25 digital, shared regional radio communications system, CTA noted several critical considerations that must be taken into account when weighing the needs of the various users to develop final technical and operational solutions.

7.2.1 Condition of Existing Radio systems

Many of the radio systems CTA reviewed are aging. Most require some type of action in the near future if they are to be able to continue to meet the needs of the emergency responders they support.

Among the more critical conditions we noted are listed below:

- VHF Low Band Conventional Systems--Most existing equipment is obsolete.
- VHF High Band Conventional Systems--FCC requires narrowbanding by 2013
- UHF Conventional Systems--FCC requires narrowbanding by 2013
- UHF T-Band Conventional Systems--FCC requires narrowbanding by 2013
- 800 MHz Trunked (SmartNet) Systems—At the end of their useful life
- 800 MHz Trunked (EDACS) Systems—Aging and near their end of useful life
- All 800 MHz Systems—Undergoing FCC rebanding

In short, for most of these systems, some type of action is either underway or needed now. In some cases, both infrastructure and subscriber equipment must be replaced if they are to provide reliable communications to support emergency responders.

Architecture
In addition, the existing architectures in many of the older systems do not meet the demands of the users. As population, and thus the number of emergency responders, continues to increase, an additional burden will be placed on the limited capacity on many of the existing systems. This problem is further complicated by the lack of new available frequencies through the two-county EBRCSA area. Finally, current architectures do not support the increasing need for in-building portable coverage as new requirements exceed the design specifications of the original systems.

Regulatory Considerations
Several regulatory decisions by the FCC and other governing bodies must also be factored into EBRCSA's radio system plans. All systems in the VHF and UHF bands must be narrowband (one voice channel per 12.5 kHz of bandwidth) no later than January 1, 2013. In some cases, existing analog VHF and UHF systems will experience decreased coverage as a result of narrowbanding.

The 700-MHz band will be available after February 17, 2009, provided that the Region 6 (Northern California) 700-MHz Public Safety Planning Committee submits and the FCC approves a regional plan for the licensing and use of the channels. The 700-MHz narrowbanding (one voice channel per 6.25 kHz of bandwidth) deadline is January 1, 2017.

A summary of the FCC mandates is as follows:

- VHF High Band: One voice channel per 12.5 kHz by 2013
- UHF: One voice channel per 12.5 kHz by 2013
- UHF T-Band: One voice channel per 12.5 kHz by 2013
- 700 MHz: One voice channel per 6.25 kHz by 2017

7.2.2 Advantages of P25

As users throughout Alameda and Contra Costa Counties consider the best technical and operational solutions to meet their current and future communications needs, they need to fully understand of the advantages of the P25 standard.

The Association of Public-Safety Communications Officials International (APCO), in conjunction with the Telecommunications Industry Association (TIA) and others, initiated APCO Project 25 (P25) to promote a single non-proprietary set of standards for digital radio communications. The purpose of the standards was two-fold:

- to improve interoperability between law enforcement agencies; and
- to provide greater competition and cost savings in the procurement of radio equipment.

TIA is responsible for overseeing and coordinating the ongoing development of the P25 standards. The P25 Standard is supported by a number of organizations listed below, which indicate widespread acceptance and a willingness for agencies throughout the nation to move toward P25:

- APCO
- Department of Homeland Security
- International Association of Chiefs of Police
- International Association of Fire Chiefs
- Department of Defense
- Department of Interior

The first phase of P25 implementation focused on providing a common air interface (CAI). The CAI defined a standard to provide one voice channel in a 12.5-kHz channel at

a bit rate of 9.6 kbps using compatible four-level FM (C4FM). The CAI supports conventional and trunked operation.

P25 also supports 9.6 kbps data with defined IP packets that are integrated with voice and control. P25 supports voice, data and control encryption and also supports over-the-air rekeying (OTAR).

Another advantage of P25 is the backward compatibility, which enables P25 radios to communicate in analog mode to analog radios, and either digital or analog mode with Project 25 radios.

Impact of P25 Phase 2
P25 Phase 2 has several goals. One goal is to define technology standards that will provide one voice channel per 6.25 kHz of spectrum, doubling the spectral efficiency of Phase 1. The P25 committee is currently focusing its efforts on a TDMA standard based on a two-slot 12.5-kHz channel. This means that it will be much easier to meet the capacity needs of EBRCS. The standard requires that any Phase 2 equipment must be backward-compatible to communicate in Project 25 Phase 1 mode.

Phase 2 P25 also provides for over-the-air programming (OTAP) and over-the-air rekeying (OTAR) offered by Phase 1.

P25 is becoming the technology of the future. Vendors have begun to accept contracts for Phase 2 equipment and at least three vendors now offer P25 multiband radios. Single-band P25 radios are available from many vendors.

There are two basic methods to ensure interoperability between geographically adjacent agencies or counties that are using P25 compatible systems. The first method involves establishing talk-groups between the counties that ensure each agency is using the same system when appropriate. This may not be the most desirable method because dispatcher monitoring can be lost if the radio user has switched to a talk-group on a different system. To resolve this issue, Phase 2 will also define IP-based interconnection ("inter-subsystem interface" or ISSI) standards for P25 radio systems from different manufacturers. This will allow seamless roaming and wide-area calling across multiple radio systems. The ISSI is an interface standard, not an actual device. System interface devices that are ISSI compliant are being developed and will be available on P25 systems in the near future. ISSI enables higher level interoperability opportunities which should be considered carefully.

7.2.3 Grant Funding Opportunities

Although P25 is not the only technology being funded by the Department of Homeland Security, they prefer to support projects that look to the future and take advantage of the spectrum efficiency that P25 clearly offers. Proprietary, so-called "stovepipe" systems, which focus on older technology, are not likely to receive federal funding support in the future.

7.2.4 System Maintenance Requirements

CTA noted that many agencies and users are concerned about poor maintenance and repair of their systems, which is beginning to seriously compromise communications reliability. This was not a criticism of agencies responsible for maintenance, as much as recognition that those agencies may not have sufficient resources to meet the demands of aging equipment and increasing numbers of radios. Where maintenance is outsourced, outage response times do not always meet users' operational needs.

Maintenance requirements will continue to increase in the future. Agencies that currently provide maintenance will need to carefully consider whether they can continue to do so cost-effectively, or whether a more centralized approach, if properly staffed, could be more effective, reliable and responsive.

7.2.5 Interoperability Needs and Requirements

Many users are unable to communicate with adjacent agencies and jurisdictions. In some cases, this is due to different frequency bands, while in other cases; there is a lack of training on how to use the existing interoperability capabilities.

As each agency looks toward improving interoperability, they must agree on a common set of standards that are used to achieve interoperability. One advantage of a shared system is that users will be able to roam throughout both counties and still be able to communicate with their own dispatch centers. In addition, agencies will be able to communicate with each other through the use of interoperability talk groups. Although other interoperability solutions exist, a well-planned shared system clearly provides the greatest degree of interoperability with the least complexity.

7.3 Additional User Considerations

The Current Communications Problems section of this report provides an overview of the problems that users reported with their existing radio systems. The top reported problems across all *conventional* radio systems in both counties were poor regional interoperability, limited RF coverage, inadequate indoor portable coverage, and restricted interoperability within each county. The top reported problems across all *trunked* systems were poor regional interoperability, limited RF coverage, sporadic system reliability, and untimely equipment maintenance. These problems must be addressed as agencies in both counties move toward improving emergency communications.

The System Attributes and Needs section of this report provides an overview of the characteristics needed in a new communications system. The top reported requirements for all users were power backup, reliability, survivability, improved coverage and training. These factors must be considered as the agencies in each county move forward.

7.4 Initial Recommendations

Based on the data provided by the various user agencies, CTA makes the following recommendations.

1. **EBRCSA should continue to implement the Motorola P25, trunked, simulcast radio infrastructure, subject to the additional recommendations in this report.** This technology approach is the most appropriate way to address current and future requirements, and leverages EBRCSA's current investment in P25 technology. Additionally, given the amount of Motorola P25 infrastructure that has been purchased to date, the most cost effective approach is to use Motorola fixed network equipment to build out the remaining infrastructure. Since the contract between EBRCSA and Motorola will expire in the next year, an opportunity exists to renegotiate the contract to reduce the overall cost of the system. CTA can work with EBRCSA in the negotiations to reduce the cost of the system based on our experience and the recommendations in this report.

2. **EBRCSA should engage an independent engineering firm to provide value engineering services including evaluation of the current design and creating an associated cost estimate based on the needs documented in this report**. Value engineering services are designed to help keep a project in scope, on schedule and on budget.

   A key element of these services for EBRCSA should be the creation of a cost estimate for the new system based upon the current investment in P25 equipment, a thorough review of the current system design and the needs identified in this report. This effort will provide the foundation for establishing a budget for the new system. It also develops information that positions EBRCSA to negotiate the best possible prices from P25 vendors now and in the future.

Another important service that should be included is coverage analysis, since many users expressed concern over the current level of coverage. The coverage predictions for the current design from the vendor are conservative and there is limited ability to add new sites. EBRCSA needs excellent coverage from the new system in order to be successful. An independent review of vendor produced coverage predictions can identify potential issues and assist in their resolution, resulting in optimum coverage from the system.

The results of such services will help insure that taxpayers in Alameda and Contra Costa Counties receive the most cost-effective communications to support their public safety and public service agencies. CTA is well positioned to provide these services based upon its current work with EBRCSA and prior experience in Contra Costa County.

3. **EBRCSA should adopt the P25 Inter Sub-System Interface (ISSI) standard should be the technical basis for adding any new county systems to the network.** The addition of new member agencies is a fundamental element of EBRCSA's future planning. With an ISSI standards-based system, these new member agencies can pursue implementation of a P25 system based upon their unique requirements while enjoying the benefits of membership in EBRCSA. ISSI should also be the technical basis for interconnecting with other regional systems such as BayRICS.

4. **EBRCSA should begin planning for regional day-to-day management of the new system immediately.** EBRCSA has made significant progress in the area of overall governance. Day-to-day management tasks include database management, user and group radio permissions, authorizations to make system changes, coordination with maintenance, repair and modification activities, and mediating operational issues that may occur on a routine basis. Two keys to success in such an environment are clearly defining the responsibilities of each managing agencies, and the establishment of lines of communications between the agencies.

   Regional systems may be managed by a multiple agencies, each responsible for its own area. The Interoperability Assessment and Gap Analysis report for the Bay Area SUASI[1] recommended this model, and CTA concurs, provided that planning and coordination is completed before a system begins supporting users. Various alternative management models for defining the roles and responsibilities of each member agency should be the first step in this planning. Once a model has been formally adopted and implemented, it should be regularly reviewed when new members join EBRCSA.

5. **EBRCSA should begin planning to address the day-to-day maintenance of the new system immediately.** Maintenance represents an opportunity for the EBRCS to demonstrate a significant improvement over the current environment. A regional system should provide increased leverage with the equipment manufacturers to improve their support of EBRCSA's maintenance plans.

   Maintenance personnel are the primary interface between end users and EBRCSA. Robust and reliable maintenance procedures must be put into place to make the system successful. Maintenance in this context includes day-to-day repairs and reconfigurations based on direction from system management. Both shared infrastructure and member equipment components must be considered in the overall plan. Centralized (in-house or outsourced maintenance) and distributed models may be considered for either or both of these components.

[1] Bay Area SUASI, Interoperability Communications Project, Interoperability Assessment and Gap Analysis Report, December 7, 2007, Section 6.3.4.5 page 46.

CTA understands that the current maintenance plan for the EBRCS is based on maintenance being provided by Alameda County GSA and the Contra Costa Information Technology Department. CTA recommends that formal agreements be established between these agencies so that consistently excellent service is provided to the member agencies. It is our understanding that preliminary work on such agreements is already underway. We also recommend that these formal agreements be re-evaluated when new agencies join EBRCSA.

6. **EBRCSA should begin development of Standard Operating Procedures (SOP) and training plans in the near future.** SOPs are essential in assuring that the operation of the radio system is well defined, falls within the system capabilities, and effectively meets user needs. A tremendous amount of effort is typically put into developing the technology, but without SOPs, the technology often is underutilized. Training helps overcome the customary uncertainty when an individual is faced with using new and unfamiliar systems and equipment. Both SOPs and training are vital to a successful radio system deployment.

7. **EBRCSA should create a users group that includes a representative from every user agency.** This group would meet semi-annually with the purpose of providing input and advice to the EBRCSA on any matter related to the operations of the shared radio system. During the initial implementation process, more frequent opportunities to provide user input should be solicited.

8. **EBRCSA should pursue FCC licensing of new 700 MHz frequencies when the spectrum becomes available.** A significant number of new frequencies will be required to support the projected 15,000 users that will be served by the new system.

   The 700 MHz band presents a significant opportunity to acquire new frequencies to support the communications needs of public safety agencies in the East Bay area. The Final Draft of the Region 6, 700 MHz Plan allocates 57 frequency pairs for public safety agencies in Alameda County, and 40 frequency pairs for agencies in Contra Costa County.

   In order to insure the frequencies remain available to member agencies in the two counties in the unlikely event where the EBRCSA is dissolved, it is recommended that the EBRCSA enter into agreements with member agencies to provide for the future transfer of the frequencies.

9. **EBRCSA should work with CTA to redefine the scope of Phases II, III, and IV of the existing contract to better address the recommendations of this report.** As with any large project, requirements and understandings related to the EBRCS project have changed over time as the project team gathers new information. Examples of such changes include the implementation of P25 equipment at a number of sites and CTA's enhanced understanding of the communications needs within Alameda and Contra Costa Counties acquired in our work over the past six months. Modification of the scope of the existing contract offers the opportunity to align the contract with the evolving needs of EBRCSA based on the clarification gained during the completion of Phase I activities.

Appendix A

Group Agency Meeting Records

East Bay Regional Communications System Authority
Needs Analysis and Analysis of Proposed System Design
Final Group Agency Meeting Record

Organization/Agency	Fremont Police Department (FPD)
File Name:	ALCO-1 Fremont PD.doc
Date of Meeting:	Tuesday, September 16, 2008
Location of Meeting:	Alameda County (Newark Fire Station One)
Meeting Attendees:	David Lanier, Radio Project Manager, FPD
	Shannon Duckworth, Communications Supervisor, FPD
	John Flynn, Traffic Officer, FPD
	Rob Lanci, Investigations, FPD
	Chris Alberti, Patrol/SWAT, FPD
	John Dauzat, Sergeant, Animal Services, FPD
	Gus Arroyo, FPD Communications Manager, FPD
	Marilyn Crane, IT Services Director, City of Fremont (POC)
CTA Attendees:	Jim Collum, Senior Communications Engineer
	Krasna Svoboda, Public Safety Consultant
	Ken Ballard

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. Multiple units within the FPD were represented in this meeting. FPD is a full-function law enforcement agency with vehicle patrol, motorcycle patrol, investigations, special units, etc.

2. FPD provides frequent backup law enforcement services to the U.S. Fish and Wildlife agency, which has only one field officer on duty to cover a large area (Don Edwards Wildlife Refuge).

Present Situation

1. Primary use of radio systems is for communications between individual field employees and the Communications/Dispatch Center. Secondary use is for communications among field employees. The system is in constant and regular use.

2. Members of the shared Alameda County 800 MHz trunked radio system.

3. Radios are programmed with talk groups in three "bands;" the "A" band includes the primary and secondary dispatched channels, tactical channel(s) for unit-to-unit communications, SWAT channel, Animal Services channel, and a "Miscellaneous" channel. Both dispatched channels are monitored by the Communications Center. The secondary channel is primarily used for want/record checks. The City Jail personnel use the "Miscellaneous" channel for primary communications within the jail facility.

4. FPD subscriber units were programmed at the time the system was implemented and have remained largely untouched since then. They have not been programmed with talk groups that include nearby law enforcement, fire or other agencies.

5. Patrol and Animal Services vehicles are equipped with laptops/MDTs using Verizon data service. These devices include an automatic vehicle location (AVL) capability.

6. The radio system is used to operate facility gates in addition to a card-key entry system.

Present Problems

1. System failures are too frequent, and the agency finds it challenging to know the best way to handle such outages. Alameda County GSA is responsible for system repairs and providing direction to users on procedures to be used in case of system failures or malfunctions. Some of those

procedures require coordination with the Alameda County Sheriff's Office. and this results in unclear and sometimes conflicting instructions and information. The police department is unaware of any preventive maintenance routinely performed by GSA.

2. FPD has little or no interoperability, even with users of the County shared system, and relatively little unit-to-unit communications within the department. This appears to be a programming or "fleet mapping" matter, rather than a system deficiency. The department perceives the cost of reprogramming by GSA as a barrier to taking action to correct this situation , and are strategizing how to incorporate reprogramming with the re-banding planned for 2009. Communications are primarily handled through the dispatchers.

3. Interoperability is entirely lacking with agencies not on the County shared system, such as nearby Hayward, CHP, BART and Valley Transit Authority, East Bay Regional Park District police, and U.S. Fish and Wildlife law enforcement officers. This especially causes difficulties when East Bay Regional Park District police provides air support to FPD. Investigators and special task force agents with the PD who regularly operate outside the jurisdiction—for example, in Oakland, Contra Costa, Santa Clara and San Mateo counties—are typically unable to communicate by radio, and resort to cellular services.

4. Coverage is fairly good in most areas of the City, but there are dead spots with no voice coverage in several specific locations, including the Jail and portions of the FPD building. Interference problems, including static and diminished volume levels, are increasing.

5. The department also expressed serious concerns about the lack of backup power capability at the Coyote Hills communications tower

6. The department is NIMS trained and has some SOPs for radio use, but may be unaware of the Alameda TIC Plan. There is no solid back-up plan for a system failure.

Future Requirements

1. FPD needs a system that works. Reliability is the primary concern for the FPD.

2. Interoperability is needed with nearby law enforcement, fire, and other agencies.

3. The City of Fremont stated that users of the shared radio system should receive "accurate and timely information" about maintenance being performed and changes being made. It should be clear who is in charge of the system, and financial and performance audit information should be made available.

4. The department is working on a plan for an electronic "boundary" system, which would provide additional location information to supplement the AVL system currently in place.

5. Special units are interested in both selective use of encryption and subscriber units with a "cell phone" form factor.

6. Motorcycle patrol radios need a different subscriber unit display technology that will not fade with outdoor use. Radios should also not draw on vehicle battery reserves when the unit is not operating.

7. Additional tactical talkgroups for command, SWAT and hostage negotiators.

8. A recorded and secure tactical talkgroup.

9. Portable based GPS tracking.

   Dispatch capability to create direct patches to diverse systems and talkgroups so that officers in dangerous situations don't have to switch channels.

10. Scanning with priority talk capability.

11. Talkaround channels programmed into all radios for radio to radio communications in the event of system failure.

The draft of this record was sent on October 3, 2008 to:
David Lanier, Radio Project Manager, FPD
Shannon Duckworth, Communications Supervisor, FPD
John Flynn, Traffic Officer, FPD
Rob Lanci, Investigations, FPD
Chris Alberti, Patrol/SWAT, FPD
John Dauzat, Sergeant, Animal Services, FPD
Gus Arroyo, FPD Communications Manager, FPD
Marilyn Crane, IT Services Director, City of Fremont (POC)

Sgt. Chris Alberti and David Lanier's comments were received from David Lanier on October 10 and October 22, 2008 and incorporated.

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East Bay Regional Communications System Authority
Needs Analysis and Analysis of Proposed System Design
Final Group Agency Meeting Record

Organization/Agency	Alameda County Probation Office
File Name:	ALCO-2 County Probation.doc
Date of Meeting:	Tuesday, September 16, 2008
Location of Meeting:	Alameda County (Newark Fire Station One)
Meeting Attendees:	Daniel Mar, Food Service Manager, Probation (POC)
	Ron Johnson, Special Projects, Probation
	Don Jayamanne, Alameda County GSA
CTA Attendees:	Jim Collum, Senior Communications Engineer
	Krasna Svoboda, Public Safety Consultant

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. The department supervises adults on probation and provides services to juvenile offenders through its 7 x 24 Juvenile Hall operation and camp. These responsibilities involve extensive transport of children between locations inside and outside the County for housing, court appearances, and other kinds of care.

2. The radio system also supports OES responsibility for earthquake preparedness.

3. Mr. Mar manages radio equipment repair and replacement, training, and testing, in addition to his other responsibilities.

Present Situation

1. Probation is a use of the 800 MHz shared Alameda County radio system. The radio system is in heavy day-to-day use, primarily by adult probation officers, in the juvenile facilities and juvenile offender transportation. It is the primary communications system for in-facility use. Officers use cellular services as a secondary communications service when the radio system is not available.

2. The department currently has 225 portable (handheld) units and about 40 mobile (vehicle) units. These quantities include 50 new radios that are P25 compliant. The mobile units are used for transport between the juvenile facilities. Note the department is adding a second camp location and a program for girls in the near future, and this will increase transport requirements.

3. Radios are programmed following the County convention of A, B, and C bands. Juvenile Hall and detention camp channels are in heaviest use in the A band. B band includes the dispatched channels.

4. Radios are the primary means of day to day communication for most of the department's employees. Cell phones are used as a backup when the radio system is not available.

5. Interoperability with the Sheriff's Office for back up during emergencies is via the County mutual aid channel, which must be requested by the dispatcher before being used.

6. Field officers have laptops in their vehicles, using commercial wireless data service providers.

7. Good operating procedures and training are in place for the most commonly used channels and situations. Emergency procedures and training are a priority due to the juveniles in the department's care. 6 radios are programmed with the capability to communicate with OES in emergencies.

Present Problems

1. Emergency alarm “red button” capability does not work effectively for officers in the juvenile facilities; audible alarms are required.

2. Radio interoperability with other agencies and jurisdictions is not available; this is most important for officers transporting children back and forth within the County, to the nearby counties in the nine-county bay area and as far as Nevada and Los Angeles. Probation is currently leasing radios for emergencies in Oakland. No workable procedure exists for officers to communicate with the Sheriff’s Office on a day-to-day basis.

3. Mobile data over the radio system is of interest for the future. The ability to run record checks is of particular interest.

Future Requirements

1. Reliable system with excellent portable (handheld) coverage in all facilities as well as during transport.

2. Day-to-day interoperability with 9-county region including Alameda and Oakland. Both technology and procedures are required.

3. Some preference for mobile data as part of the radio system, rather than via commercial carrier.

4. Audible alarms in all facilities, activated from the portable radios, and a procedure for responding to alarms.

The draft of this record was sent to Daniel Mar, Ron Johnson, and Don Jayamanne on October 3, 2008.

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East Bay Regional Communications System Authority
Needs Analysis and Analysis of Proposed System Design
Final Group Agency Meeting Record

Organization/Agency	Union City Police Department (UCPD)
File Name:	ALCO-4 Union City PD
Date of Meeting:	Tuesday, September 16, 2008
Location of Meeting:	Alameda County (Newark Fire Station One)
Meeting Attendees:	Carl Felker, Sr. Systems Analyst, UCPD (POC)
	Isabel Lopez, Dispatcher, UCPD
	John Elissiry, Sergeant, UCPD
	Jim Bizieff, Lieutenant, UCPD
	Don Jayamanne, Alameda County GSA
CTA Attendees:	Jim Collum, Senior Communications Engineer
	Krasna Svoboda, Public Safety Consultant
	Ken Ballard

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. The UCPD is a modern metro police organization that performs all law enforcement functions, either itself or as part of task forces with nearby law enforcement agencies.

2. The department employs about 82 sworn officers and has three positions in its Communications/Dispatch Center.

Present Situation

1. UCPD is part of the County 800 MHz radio system. It operates with one primary dispatched channel and three tactical channels. Three simulcast sites serve the area. In addition, the department retained their old UHF T-band system with one dispatched channel when they joined the County. They use this system as a backup when the 800 MHz system is off the air, as well as for non-sworn employees and for special events. Since both radios are still installed in most vehicles, including a shared channel with Hayward dispatch, some interoperability with Hayward is possible.

2. Officers can hear Fremont and reach Fremont and Newark Dispatchers, which also use the County 800 MHz system. Fremont officers do not have UCPD channels programmed in their radios. Hayward uses a different radio system.

3. The department is in the process of implementing an AVL system, which will be integrated with CAD. Only vehicles will be equipped with AVL.

4. County mutual aid channels are available but there are no protocols for using these channels on a routine basis. Most interoperability is via dispatch-to-dispatch telephone calls.

5. Mobile data is via commercial 3G service. All vehicles are equipped with terminals.

Present Problems

1. Frequent system failures that include fail-soft mode and complete system failures (no radio communications).

2. Patching in the consoles does not work.

3. Lack of common talk groups with Union City PD, Newark PD, Hayward PD, and other law enforcement agencies. The cost of GSA reprogramming is a significant barrier to making needed

changes; radios today are essentially configured as they were when first installed over 10 years ago. (Note: talk groups could be corrected during 800 rebanding, when the radios will be reprogrammed.)

4. Lack of in-building coverage is a significant problem. Coverage is spotty city-wide, and is worsening. The Coyote Hills area has poor to no coverage. There is interference and noisy ("snap, crackle, and pop"), which may be associated with timing problems for their older simulcast technology. These sites are not properly maintained. Nextel interference may also be present, according to GSA. NOTE: the T-band radios have some coverage in spots where the 800 MHz units do not.

5. Man-down alarms are not working.

Future Requirements

1. Interoperability with surrounding locations is needed immediately, especially with Hayward.

2. The system "needs to work." There is frustration with the apparent lack of attention to the problems with the simulcast system. One participant commented, "If the County wants to continue to have a system, it needs to fix this."

3. Portable (handheld) and in-building coverage are needed, including portable-to-portable communications with Hayward officers.

4. GPS location information should be available for handheld radios, and should be automatically sent during emergencies.

5. Mobile data over the radio system with encryption for detectives, SWAT, and tactical teams. "We'd rather give the public access to our communications records *after* the fact than have them listening to an ongoing event," was a comment made by one participant.

6. Future population growth in the City is predicted to be significant—from about 20,000 to 74,000 within 20 years or less. The need for a second dispatched channel is starting to be felt.

7. Many of the department's subscriber units are old and do not include 700 MHz capability.

The draft of this record was sent on October 3, 2008 to:

Carl Felker, Sr. Systems Analyst, UCPD (POC)
Isabel Lopez, Dispatcher, UCPD
John Elissiry, Sergeant, UCPD
Jim Bizieff, Lieutenant, UCPD
Don Jayamanne, Alameda County GSA

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East Bay Regional Communications System Authority
Needs Analysis and Analysis of Proposed System Design
Final Group Agency Meeting Record

Organization/Agency	Newark Police Department (NPD)
File Name:	ALCO-5 Newark PD.doc
Date of Meeting:	Tuesday, September 16, 2008
Location of Meeting:	Alameda County (Newark Fire Station One)
Meeting Attendees:	Matthew Breen, Communications Supervisor, Newark PD/FD (POC) Ron LaSalle, Information Services, NPD Nick Mavrakis, Patrol Officer, SWAT, NPD Jonathan Arguello, Police Sergeant, SWAT, NPD Tom Milner, Lieutenant, NPD
CTA Attendees:	Jim Collum, Senior Communications Engineer Krasna Svoboda, Public Safety Consultant

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. NPD is a modern metro police organization that performs all law enforcement functions, either itself or as part of task forces with nearby law enforcement agencies.

Present Situation

1. NPD is part of the County 800 MHz radio system. It operates with one primary and one secondary dispatch channels. The second channel offers better coverage in the western Newark, Fremont, and the Santa Rita Jail. NFD uses the primary channel for emergencies. NPD jumps to a different talk group for emergencies.

2. The Communications/Dispatch Center serves both the Newark PD and the Newark FD, and is operated and budgeted as part of the PD.

3. Interoperability is accomplished for the most part via either dispatcher-operated patch (with variable success) or portable radio swap among agencies at incident sites.

4. All or most police department vehicles have mobile data terminals using commercial 3G service.

5. Previous radio system was a UHF T-Band system that used 4 towers to cover Newark and surrounding area. The system was retired when parts were no longer available and the system could not be maintained.

6. Newark is scheduled to re-program its radios in November per Alameda GSA's schedule for 800 MHZ Rebanding.

Present Problems

1. Interoperability is a major and chronic issue. NPD joined the County system later than nearby Fremont and Union City, and has both cities' talkgroups programmed on their radios. Unfortunately Fremont and Union City do not have Newark's talkgroups in their radios resulting in no interoperability among the area's cities.

2. Users experience frequent interference and static, and often "just can't key up." There is a lack of in-building coverage at the major mall in the City.

3. Emergency alarming does not override ongoing conversations.

Future Requirements

1. One participant summarized future requirements as, “Reliability, reliability, reliability and reliability. And coverage in the southern part of our area.”

2. Interoperability with all public safety agencies.

3. Preference for mobile data to be carried on the radio system. Encryption is desired but is not a priority.

4. GPS location information should be available on portables as well as on mobile units and should also be sent to Communications/Dispatch automatically when the “man down” or emergency alarm button is operated.

The draft of this record was sent on October 3, 2008 to:

Matthew Breen, Communications Supervisor, Newark PD/FD (POC)
Ron LaSalle, Information Services, NPD
Nick Mavrakis, Patrol Officer, SWAT, NPD
Jonathan Arguello, Police Sergeant, SWAT, NPD
Tom Milner, Lieutenant, NPD

Corrected draft from Ron LaSalle was returned to CTA Communications on October 6, 2008.

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East Bay Regional Communications System Authority
Needs Analysis and Analysis of Proposed System Design
Final Group Agency Meeting Record

Organization/Agency	Fire West: Newark FD, Fremont FD, Union City FD, and City of Alameda FD
File Name:	ALCO-6 West Fire.doc
Date of Meeting:	Tuesday, September 16, 2008
Location of Meeting:	Alameda County (Newark Fire Station One)
Meeting Attendees:	Paul O'Brien, Newark Fire Department NFD) (POC) Gerry Fogel, Operations Staff Captain, Fremont Fire Department (FFD) Ronnie Oatis, Battalion Chief, Union City Fire Department (UCFD) Andy Smith, Battalion Chief, Union City Fire Department Mike Fisher, Alameda (City) Fire Department (AFD)
CTA Attendees:	Jim Collum, Senior Communications Engineer Krasna Svoboda, Public Safety Consultant

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. The Newark, Fremont, Union City, and Alameda City Fire Departments provide fire and rescue services within their jurisdictions that are typical of all urban fire agencies. All four departments are also associated with the Alameda County Fire Department.

2. Ambulance services are operated privately in most of Alameda County.

Present Situation

1. All four departments use Alameda County's 800 MHz radio system.

2. Fremont, Union City, and Alameda are dispatched from the same County fire dispatch center. The Alameda County Regional Emergency Communications Center (ACRECC) is located in Livermore CA at Lawrence Livermore Labs. Newark FD is dispatched from the Newark PD Communications/Dispatch Center.

3. VHF frequencies are used for interoperability throughout the County. Cal Fire's White 1, 2 and 3 VHF frequencies are the most commonly used. An IA Fire talk group is available on the County's 800 MHz system but is not frequently used. There are also 4 tactical talk groups on every 800 radio for North, South, East and County Wide communications. These talk groups are not used as much as in the past due to the consolidation of the ACRECC with UC, FFD, ALCO, and ALA City. The East zone (14) is used with ALCo on LP FIRE on all highway incidents.

4. Mobile data in all vehicles is provided by a commercial 3G carrier. AVL is provided for ACRECC agencies from all mobile data terminals and is support by the CAD system at ACRECC that went live in March 2008. Newark does not use AVL.

5. A passport accountability system is in place.

6. Alameda FD and Fremont FD have good radio coverage in their areas outdoors. Coverage in Newark and Union City recently improved somewhat when some maintenance was performed on the County simulcast system serving that area. They both continue to have issues but just not as severe.

Present Problems

1. These fire departments are interoperable with each other, but not with other municipal fire agencies on UHF or Ma/COM systems.. In these cases, which are frequent, interoperability is typically

accomplished via dispatcher-to-dispatcher telephone calls or portable radio swapping at incident sites.

2. Coverage in buildings is a problem in Alameda City and other areas where it is urgently needed.

3. Equipment is old and unreliable. GSA takes care of problems generally but never seems to have enough qualified technicians. Radio subscriber unit repairs are slow and customer service needs improvement; some agencies have turned to local radio shops for this service in order to obtain faster response and lower prices. Issues are also being reported with the local radio shops.

4. A fire fighter's emergency signal is routed to his/her home dispatch center. This causes delays when the fire fighter is providing support outside their jurisdiction.

5. Emergency "red button" on the portable radios cannot be operated while wearing gloves.

Future Requirements

1. Reliable, consistently maintained system that provides in-building coverage throughout the County.

2. Standard equipment configurations (programming) throughout the County.

3. Interoperability with Cal Fire and other agencies that provide mutual aid. Ideally, this would be provided in one dual band radio.

4. An emergency button that can be "felt" when using a fire glove.

5. Would prefer mobile data provided by the radio system, assuming that this would have a lower cost and provide better coverage.

6. Need the ability to page specific radio subscriber units so that firefighters would not need to carry pagers. Portable units should have an audible alert signal for incoming transmissions. This is already an option on the present system, just not utilized by agencies.

7. GPS information from portable radios would be helpful; this information should be sent automatically when an emergency alert is activated.

8. A county-wide agreement on a communications plan before going live on the P25 radio system.

The draft of this record was sent on October 3, 2008 to:

Paul O'Brien, Newark Fire Department (NFD) (POC)
Gerry Fogel, Operations Staff Captain, Fremont Fire Department (FFD)
Ronnie Oatis, Battalion Chief, Union City Fire Department (UCFD)
Andy Smith, Battalion Chief, Union City Fire Department
Mike Fisher, Alameda (City) Fire Department (AFD)

Corrected draft from Paul Obrien was returned to CTA Communications on Oct 6th 2008.

East Bay Regional Communications System Authority
Needs Analysis and Analysis of Proposed System Design
Final Group Agency Meeting Record

Organization/Agency	San Leandro Police Department (SLPD)
File Name:	ALCO-7 San Leandro PD.doc
Date of Meeting:	Wednesday, September 17, 2008
Location of Meeting:	Alameda County (County Emergency Operations Center)
Meeting Attendees:	Lt. Steve Pricco, Lieutenant, SLPD (POC)
	Theresa Loconte, Dispatcher, SLPD
	Randall Hudson, Traffic Sergeant, SLPD
CTA Attendees:	Jim Collum, Senior Communications Engineer
	Krasna Svoboda, Public Safety Consultant

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. The SLPD is a modern metro police organization that performs all law enforcement functions, either itself or as part of task forces with nearby law enforcement agencies.

Present Situation

1. SLPD is part of the County 800 MHz radio system. It operates with one primary dispatched channel and uses only a few of the channels programmed into its radios.

2. The department has its own standalone Communications/Dispatch Center, which always has at least two positions staffed: one call-taker and one primary channel dispatcher. A secondary dispatched channel extends coverage to the east. A T-Link connects SLPD Dispatch to Alameda County Dispatch. Patching capability to Oakland existed in the past until Oakland changed their radio system.

3. The system is working no better and no worse than when it was installed; there may be fewer dead spots.

4. Interoperability with Alameda City FD is available; with other agencies, interoperability is accomplished primarily by dispatcher-placed telephone calls. This includes interoperability with BART and AC Transit, and with the City of Oakland. The Oakland helicopter provides air service and has been given a SLPD radio to use when needed.

5. Mobile data is installed in all vehicles using a commercial carrier service. The system provides AVL information for vehicles.

6. The Vice team uses an encrypted channel. Vice, Narcotics and Investigations frequently work outside of the City limits and must coordinate communications with the jurisdiction they are working in. The most common scenario involves providing an officer with a radio on the home system to support to SLPD.

Present Problems

1. Coverage is poor in the Police building and Jail, along the waterfront and marina, in Trojan Flats, and in and around the Bayfield Mall.

2. The system is in failsoft mode frequently—perhaps twice a month on the average. Some of the failures appear to be heat related. SLPD and Alameda City are on the same failsoft channel and revert to using City name and call to distinguish SLPD calls.

3. Interference is common, particularly during rainy periods. Intelligibility is thus often an issue even when coverage is present.

4. Portable subscriber units are up to 15 years old and in urgent need of replacement. This is true for some mobile units, although these have been replaced more regularly over the years. GSA repair service is slow and units frequently have to be sent in more than once for the same problems. Bluetooth microphones purchased for the motorcycle patrol are not working well.

Future Requirements

1. Coverage and reliability issues must be resolved.

2. Interoperability is important.

3. The previous system included an emergency tone and announcement feature that was particularly helpful and should be included in a new system. An audible signal ("beep") is desired every 5 seconds when the talk group is involved in an emergency to alert all users of emergency status on the talk group.

The draft of this record was sent on October 3, 2008 to:

Lt. Steve Pricco, Lieutenant, SLPD (POC)
Theresa Loconte, Dispatcher, SLPD
Randall Hudson, Traffic Sergeant, SLPD

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East Bay Regional Communications System Authority
Needs Analysis and Analysis of Proposed System Design
Final Group Agency Meeting Record

Organization/Agency	Livermore and Pleasanton Police Departments (LPD and PPD)
File Name:	ALCO-8 Liver Pleas PDs.doc
Date of Meeting:	Wednesday, September 17, 2008
Location of Meeting:	Alameda County (County Emergency Operations Center)
Meeting Attendees:	Rhonda Bishop, Facilities and Equipment Manager, LPD (POC)
	Alda Nash, Dispatch Supervisor, PPD
CTA Attendees:	Jim Collum, Senior Communications Engineer
	Krasna Svoboda, Public Safety Consultant

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. The Livermore and Pleasanton PDs are modern metro police organizations that perform all law enforcement functions, either individually or as part of task forces with nearby law enforcement agencies.

2. The City of Pleasanton is close to being built out; Livermore has grown more slowly and includes some undeveloped areas. The two PDs work closely together.

Present Situation

1. The two police departments share a common 5-channel, 800 MHz trunked radio system. The repeaters and controller are located at the Doolan tower site. As subscriber units are replaced, models with 700/800 MHz and P25 capability are purchased. However, much of the system is old and in need of replacement.

2. Each department operates its own 4-position Communications/Dispatch Center; the Livermore center also dispatches for the combined Livermore-Pleasanton Fire Department.

3. Each department uses a primary dispatched channel, two alternate channels, and a backup channel. Alternate channels are used for tactical and unit-to-unit communications. The department also has access to a County 800 MHz channel for communications with their dispatch center when out of normal radio range. The dispatch centers monitor a separate Public Works channel at night.

4. Vehicles are equipped with laptops or mobile data terminals, which have service from two commercial 3G carriers.

Present Problems

1. There are some dead spots where coverage is not good. The Springtown area north of Livermore is the worst part of the coverage area.

2. Much of the system is past its design life. It provides the features they need, but both departments are acutely aware of the risk that the system will fail. One interviewee commented that, “With an 18-year-old system, if I wake up each day and the system is still working, it’s a blessing.”

3. Interoperability between two departments is good, but radio interoperability is lacking with most other jurisdictions. Cell phones and radio swapping are used instead.

Future Requirements

1. “Bulletproof” reliability is the major requirement for both departments.

2. A need for interoperability with the County and with other adjacent jurisdictions is the other main reason why the two departments were willing to join EBRCSA. The departments provide mutual aid to as far as Oakland, and assist County and State agencies throughout the eastern half of the County.

3. Encryption is not a high priority, but if it can defeat scanner functionality, then they would like it used across the board. Currently they use cell phones when privacy is needed.

The draft of this record was sent to Rhonda Bishop and Alda Nash on October 3, 2008.

Corrected draft was returned to CTA Communications on 10/9/08.

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East Bay Regional Communications System Authority
Needs Analysis and Analysis of Proposed System Design
Final Group Agency Meeting Record

Organization/Agency	City of Alameda Police Department (APD)
File Name:	ALCO-9 Alameda City PD.doc
Date of Meeting:	Wednesday, September 17, 2008
Location of Meeting:	Alameda County (County Emergency Operations Center)
Meeting Attendees:	Paul Rolleri, Sergeant, APD
	Lisa McNiff, Communications Manager, APD (POC)
	Nichole Gorman, Dispatcher, APD
	Gregory Ella, Detective, APD
CTA Attendees:	Jim Collum, Senior Communications Engineer
	Krasna Svoboda, Public Safety Consultant

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. The APD is a modern metro police organization that performs all law enforcement functions, either itself or as part of task forces with nearby law enforcement agencies.

Present Situation

1. APD joined the Alameda County 800 MHz radio system in about 2000. They have been generally satisfied with the performance of the infrastructure and subscriber units.

2. The department operates its own 5-position Communications/Dispatch Center. This center separated from Alameda Fire in 2002. It uses a primary dispatched channel for most communications. A secondary dispatched channel is used during incidents and for unit-to-unit communications. Channels are programmed for investigations, special duty, vice/narcotics, SWAT and hostage, and public works.

3. Dispatch can monitor the San Leandro PD, the Alameda City FD, and the Alameda Sheriff's Office.

4. Mobile data terminals in most vehicles use commercial carrier services. An AVL system that would work through the data network is being tested currently, but will not be purchased at this time due to lack of funding.

Present Problems

1. Coverage and interference problems occur along the western tip of the area, in the former Navy base location (now available for development), on the shoreline drive and along the beaches, and in some of the area schools. A single large tree is also blocking the microwave line of sight at APD's main building. It was reported that there are frequent occasions when they cannot either hear or talk or both.

2. The department often needs interoperability with Oakland, right across the border. Currently, they use dispatch-to-dispatch telephone calls or cell phones to communicate; special units use radio swaps. The helicopter serving CHP, Oakland and the east bay area has an APD channel on their radios.

3. APD uses 9-codes for day-to-day communications. This causes interoperability issues with Oakland and San Leandro since they use their own codes. During incidents all agencies try to follow NIMS and use plain English on the radio.

4. Investigations vehicles and task forces frequently travel out of the City to other jurisdictions, where they do not have interoperability.

5. Officers have report issues with battery life on their portables.

Future Requirements

1. Coverage and battery life are the two main future requirements for APD.

2. Interoperability is the significant requirement. Police chiefs will need to develop agreements regarding interoperability so that the departments can develop SOPs.

3. For detectives, special units, and SWAT, encryption and portable radios that appear to be cell phones would greatly enhance officer safety. In the words of one interviewee, these would be like “a ticket to the Willie Wonka Chocolate Factory.”

4. AVL seems like a convenience rather than a necessity, but this is thought to be because they have not had an opportunity to use it before.

5. Code 33- constant emergency alert on “channel” is a requirement. Code 33 is an audible signal (“beep”) every 5 seconds when the talk group is involved in an emergency to alert all users of emergency status on the talk group.

The draft of this record was sent on October 3, 2008 to:

Paul Rolleri, Sergeant, APD
Lisa McNiff, Communications Manager, APD (POC)
Nichole Gorman, Dispatcher, APD
Gregory Ella, Detective, APD

Corrected draft from Nichole Gorman was returned to CTA Communications on October 7, 2008.

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East Bay Regional Communications System Authority
Needs Analysis and Analysis of Proposed System Design
Final Group Agency Meeting Record

Organization/Agency	Emeryville FD, Livermore-Pleasanton FD, Camp Parks FD, Alameda County FD (ALCO)
File Name:	ALCO-10 East Fire.doc
Date of Meeting:	Thursday, September 18, 2008
Location of Meeting:	Alameda County (County Emergency Operations Center)
Meeting Attendees:	David Smith, Captain, Camp Parks Fire Department (CPFD) Steven Marks, Captain, Emeryville Fire Department (EFD) John T. Walsh, Battalion Chief, Alameda County Fire Department (ALCO)) David Reading, Captain, Camp Parks Fire Department Bill Cody, Fire Chief, Livermore-Pleasanton Fire Department (LPFD) (POC)
CTA Attendees:	Jim Collum, Senior Communications Engineer Krasna Svoboda, Public Safety Consultant

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. Emeryville FD is a separate department serving that community. Livermore-Pleasanton FD is a combined organization serving both cities. Camp Parks is a U.S. Army installation and its fire department serves a large area in the SE quadrant of the County. Alameda County Fire provides primary service in all other unincorporated areas of the County, most of which are east of the hills.

2. Although Alameda, Berkeley, Albany and Piedmont have combined Fire and EMS responsibilities, most of the other fire agencies in the County only provide rescue services. Ambulance services are contracted to a private provider dispatched remotely.

Present Situation

1. Multiple radio systems are in use for the agencies in this group. Livermore-Pleasanton is served by the joint trunked Livermore-Pleasanton 800 MHz system. Camp Parks and County Fire are on the County 800 MHz trunked system. Emeryville is part of Oakland's separate trunked 800 MHz system. However, Emeryville's rescue vehicles carry Alameda County radios.

2. Livermore-Pleasanton is dispatched from Livermore PD. Camp parks and County Fire are dispatched from the Alameda County Regional Emergency Communications Center (ACRECC) at Lawrence Livermore Labs. Emeryville FD is dispatched by Oakland.

3. Mobile data terminals in most vehicles operate on commercial carrier services.

Present Problems

1. Interoperability is complicated. Emeryville vehicles carry at least three radios: Oakland 800 MHz, Berkeley, and a VHF unit for communications with the State. Although there is a dispatcher-activated patch between Alameda County and Oakland, it is usually more expedient to switch to VHF for these communications. County Fire vehicles carry 800 MHz, VHF (Cal Fire) and a few UHF radios (Altamont region), and some carry special radios for Oakland airport interoperability.

2. County Fire reports serious coverage shortfalls in the new construction areas in East Dublin, the Castro Valley area near Fairview, East Flynn Road, Tesla Road, and generally in buildings. Coverage from the County system is generally good in the Camp Parks area with the exception of one secure building. Since additional secure buildings are being planned, this is a concern.

3. Fire units are often in San Ramon or other areas in Contra Costa near the border between the two counties; interoperability and coverage are both concerns that impede operations.

4. Improved communications capability is needed among the Communications/Dispatch Centers that support the various fire departments. Currently there are no CAD links among the fire dispatchers, and even the console patches that exist, such as between County Fire and Oakland, are not in use.

Future Requirements

1. Reliability is the foremost priority, but beyond that, an interoperable system with good coverage across the area is required. It is essential that this include closer alignment with Oakland and Contra Costa County.

2. Dual band 800/VHF portables would greatly enhance fire ground operations and reduce the need to carry two radios or do without radio communications.

3. Camp Parks FD has a requirement for encryption capability.

4. Mobile data carried on a new radio system with adequate coverage and capacity is preferable to the continued use of commercial carriers.

5. Intrinsically-safe radios are needed, particularly for use in areas such as the BART tunnels.

The draft of this record was sent on October 3, 2008 to:

David Smith, Captain, Camp Parks Fire Department (CPFD)
Steven Marks, Captain, Emeryville Fire Department (EFD)
John T. Walsh, Battalion Chief, Alameda County Fire Department (ALCO))
David Reading, Captain, Camp Parks Fire Department
Bill Cody, Fire Chief, Livermore-Pleasanton Fire Department (LPFD) (POC)

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East Bay Regional Communications System Authority
Needs Analysis and Analysis of Proposed System Design
Final Group Agency Meeting Record

Organization/Agency	Albany FD
File Name:	ALCO-11 Albany Fire.doc
Date of Meeting:	Thursday, September 18, 2008
Location of Meeting:	Alameda County Emergency Operations Center
Meeting Attendees:	Jeff Keary, Lieutenant, Albany Fire Department (AFD) (POC)
CTA Attendees:	Jim Collum, Senior Communications Engineer
	Krasna Svoboda, Public Safety Consultant

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. Albany is a one square mile City that operates relatively independently for most purposes. It operates its own Police and Fire Departments.

2. The Fire Department has one station and consists of 6 officers, 6 Engineers, and 6 Firefighters divided into A, B, and C shifts. All members respond to emergencies according to department Standard Operating Procedures with a minimum daily staffing of one transporting ALS ambulance and two type 1 engine companies, both being ALS capable. Patient transports via ambulance go to various East Bay hospitals defined by County protocols. There are no hospitals in Albany.

Present Situation

1. The department has been licensed to transmit on one VHF radio frequency for over 30 years. Although this system has performed well, the department is currently in the process of replacing older equipment with new higher capability equipment.

2. Radio programming is currently limited to VHF frequencies which consist of mutually agreed upon VHF channels by all area departments. In addition to these channels are some tactical VHF channels used by neighboring mutual aid jurisdictions.

3. A cache of Bendix King radios are maintained for the purpose of out of County strike team assignments.

4. A single Communications/Dispatch Center operated by the Police Department provides dispatching for police and fire departments.

5. Each engine company is currently equipped with a mobile data terminal (notebook) provided by Alameda County Congestion Management Authority and use commercial carrier service. They are not being used to their potential at this time.

Present Problems

1. Portable RF coverage is generally good across the city, however dead spots exist within and around some buildings in town, notably the high rise buildings on the west side of Albany Hill.

2. Staffing of trained dispatchers is, at times, shorthanded which may require less experienced dispatchers to occasionally fill in. On a regular basis there is only one dispatcher on duty to handle all police and fire dispatching responsibilities. This can and occasionally does create delays in response to radio traffic requests from field units, especially when an emergency occurs requiring both police and fire participation, or when multiple emergencies are in progress in the City.

Future Requirements

1. The department recently received a Federal grant to replace communications equipment enabling radio capability to meet future Federal requirements.

2. Improved radio interoperability with mutual aid jurisdictions would be of benefit today and will likely be needed more in the future.

3. Ultimately, the department would like to deploy its own mobile data system.

Note:

Emeryville FD attended the Fire East group meeting and their information is detailed in that record.

The draft of this record was sent to Lieutenant Keary on October 3, 2008.

Corrected draft was returned to CTA Communications on October 8, 2008.

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East Bay Regional Communications System Authority
Needs Analysis and Analysis of Proposed System Design
Final Meeting Record

Organization/Agency	Alameda County Sheriff's Office
File Name:	ALCO-12 Sheriff's Office.doc
Date of Meeting:	Thursday, September 18, 2008
Location of Meeting:	Alameda County (County Emergency Operations Center)
Meeting Attendees:	John Calegari, Deputy, Alameda County Sheriff's Office (ACSO)
	Phillip Weinstein, Sergeant, ACSO
	Pace Stokes, Sergeant, ACSO
	Michael Vales, Deputy, ACSO
CTA Attendees:	Jim Collum, Senior Communications Engineer
	Krasna Svoboda, Public Safety Consultant

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. The Sheriff's Office is responsible for law enforcement outside the incorporated areas with their own police departments, and provides assistance to all law enforcement efforts that take place within the County. It also has a growing number of contracts under which it provides law enforcement services to incorporated areas such as Dublin, which do not have their own police departments. Contracts are in place with Oakland, the Port of Oakland (including the Airport), and the Oakland-Alameda County Coliseum during games and special events.

2. There are five Patrol Sections that cover the County; the largest of these covers the eastern two-thirds of the area, while the remaining four operate up and down the western side.

3. Participants in this interview were from Patrol (the eastern area), Social Services (responsible for 8 institutions), and Community Colleges (responsible for 3 campuses) sections; the views expressed were for those sections and may be different for the civil, transportation, airport, AC Transit, and other units.

Present Situation

1. ACSO uses the County trunked 800 MHz radio system, and is dispatched from a single Communications/Dispatch Center located in San Leandro. There are two primary dispatched channels; one is used primarily for Patrol and the other for the remaining sections. The dispatch center has 4 positions.

2. The primary method for unit-to-unit communications is via cell phone, either personal or County-provided. Interoperability is also accomplished via dispatcher-to-dispatcher telephone. Some vehicles carry Oakland PD radios. Two satellite telephones were acquired for the deep canyons across the county, but these are not effective and are seldom used.

3. All marked vehicles are equipped with mobile data terminals. Service is provided by commercial carriers and includes AVL information.

4. Coverage is generally good in developed areas, although there are remote parts of the County with little coverage.

Present Problems

1. Interoperability is complicated by the number of different and incompatible systems in the County. This is of particular concern where contract law enforcement services are provided. The communities and the department are seamlessly integrated but the radio infrastructures do not work together.

2. Drug growers have been caught with stolen radios used to monitor the County radio system.

3. The AVL system is not working effectively; vehicles do not show up reliably at the dispatch center, due to incorrect and inconsistent installations.

4. About half the Social Services facilities and many buildings on the college campuses have no coverage and officers rely on their cell phones for primary communications. The radio system is not designed to provide in-building coverage.

Future Requirements

1. Interoperability is the major requirement for a new system.

2. Coverage should be improved throughout the County, including all County facilities, the Berkeley area and the AC Transit corridors. In-building coverage is required.

3. Capacity will become an issue as more agencies join the system. ACSO is in discussions regarding a contract for security with Lawrence Livermore Labs, which would result in a 10-15% growth in officers. Lawrence Livermore has its own radio site, which it is open to sharing with the County. A third dispatched channel is also under discussion.

4. Smaller, lighter microphones, better audio quality and 8 + hour battery life are needed on portable units.

5. Participants see the value of encryption but are unaware of any defined requirements at this time.

The draft of this record was sent on October 3, 2008 to:

John Calegari, Deputy, Alameda County Sheriff's Office (ACSO)
Phillip Weinstein, Sergeant, ACSO
Pace Stokes, Sergeant, ACSO
Michael Vales, Deputy, ACSO

Corrected draft from Phillip Weinstein was returned to CTA Communications on October 6, 2008.

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East Bay Regional Communications System Authority
Needs Analysis and Analysis of Proposed System Design
Final Group Agency Meeting Record

Organization/Agency	Hayward Police Department
File Name:	ALCO-13 Hayward PD.doc
Date of Meeting:	Thursday, September 18, 2008
Location of Meeting:	Alameda County (County Emergency Operations Center)
Meeting Attendees:	Mark Mosier, Lieutenant, Hayward Police Department (HPD)
	Corey Quinn, Sergeant, HPD
	Bernie Cunha, Manager, HPD
	Bryan Matthews, Sergeant, HPD
	Desi Calzada, Communications Manager, HPD (POC)
CTA Attendees:	Jim Collum, Senior Communications Engineer
	Krasna Svoboda, Public Safety Consultant

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. HPD is a modern metro police organization that performs all law enforcement functions, either itself or as part of task forces with nearby law enforcement agencies.

2. The community of Hayward is densely-populated and has a high crime rate compared to the surrounding areas. In addition, multiple freeways and commuter train services bring large numbers of additional people into the City daily.

3. Participants in this interview were from the traffic, investigations, SWAT, and jail/transportation units in the department.

Present Situation

1. The City owns and operates a standalone, conventional police radio system, including two simulcast T-band channels for police , one simulcast UHF Fire channel, and one repeated, non-simulcast T-band channel. They also have a separate UHF P-25 compliant repeater. The system is self-maintained.

2. The four repeater sites are very well located and maintained, and they provide a high level of coverage and reliability. Sites are connected by 3 DS-3 channels configured in a loop with hot standby. Users interviewed believe the coverage exceeds 92% in-building portable talk-in.

3. Interoperability with Alameda County and East Bay Parks is at SAFECOMM level 3—console patches.

4. Investigations do not use laptop computers in their vehicles.

Present Problems

1. The investigations unit, which is out of the jurisdiction 30% of the time or more, does not have effective interoperability with other areas such as Oakland, Santa Clara County.

2. The transportation unit uses non-sworn staff to move inmates within the City and to the Santa Rita Jail in Pleasanton. Coverage is good from the existing system, but there is no interoperability along the way.

Future Requirements

1. Users of this well-performing system are concerned about joining a shared system unless they can be assured of its capacity and reliability. They want to be sure there are service level agreements in place, redundancy built into the system, and adequate spare parts to quickly respond to any type of failures.

2. Requirements for the investigations unit, in addition to interoperability and roaming across the region, include a “red button” type alarm system that is monitored at dispatch, GPS information on both portables and mobiles, encryption, a high-level of portable in-building coverage, and small, lightweight portables that look similar to cell phones.

3. Interoperability is critical to all units. Workloads are generally heavier compared to other surrounding areas due to the higher crime rate, greater numbers of transients, gang activities, etc. Multiagency operations are very frequent, so there is a special concerned about interoperability, for example, with the County Sheriff’s Office, San Leandro PD, Oakland PD, Newark PD, Fremont PD, and other agencies. Requirements for the traffic unit include laptops or mobile data terminals in vehicles and portable “PDA” sized units as well.

4. The SWAT team requires a dedicated and encrypted channel for their use. They also need interoperability with SWAT teams in other jurisdictions from Oakland and Berkeley to Fremont, and even as far as San Francisco.

5. Ruthless pre-emption for Public Safety radio traffic vs. Public Service radio traffic.

The draft of this record was sent on October 3, 2008 to:

Mark Mosier, Lieutenant, Hayward Police Department (HPD)
Corey Quinn, Sergeant, HPD
Bernie Cunha, Manager, HPD
Bryan Matthews, Sergeant, HPD
Desi Calzada, Communications Manager, HPD (POC)

Corrected draft from Desiderio Calzada was returned to CTA Communications on October 6, 2008.

East Bay Regional Communications System Authority
Needs Analysis and Analysis of Proposed System Design
Final Group Agency Meeting Record

Organization/Agency	Contra Costa County Animal Services
File Name:	Contra Costa County Animal Services Final Meeting Record.doc
Date of Meeting:	September 16, 2008
Location of Meeting:	Contra Costa County Technical Services Building
Meeting Attendees:	Clinton Vidal, Contra Costa County Animal Services Lieutenant
	Dan Barrett, Contra Costa County Animal Services Deputy Director
CTA Attendees:	Rob Burdeaux, Telecommunications Engineer
	Walter Currier, Telecommunications Engineer

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. The Animal Services Department for Contra Costa County has 26 people and 30-40 vehicles with radios. Additional vehicles are also used during events. The Animal Services Department covers the entire County.

Present Situation

1. They operate off a commercially provided private industry Red Cloud trunked UHF system. The system is shared by Building Inspectors, Animal Services, EMS – Hazmat Health Service with each on their own talk group.

2. The system has repeater sites throughout the County with the main site on Mt. Diablo. There are 5 channels that are used for Main dispatch, tactical and administration.

3. They have had the system for one year and are generally pleased with the service.

4. Animal Services have their own dispatch from 8am – 9pm Tuesday – Friday and reduced hours on Saturday. During off hours and all day on Sunday and Monday, the Sheriff's Office dispatches for Animal Services.

5. The supervisor's vehicle has additional radios for interoperability with the Sheriff and they use a scanner to monitor additional channels. In addition, they have interoperability with other UHF users and the supervisor has an 800 MHz radio for use in West Contra Costa County.

Present Problems

1. Some of the channels have co-channel interference or bleed over.

2. Poor coverage in West County and Along Marsh Creek Road.

3. Frequently they have to wait 1-2 seconds for a free channel. The system will also go into searching mode and often the only way to clear the system is to turn the radio off and back on.

Future Requirements

1. They need immediate access to the system, with no waiting for a channel.

2. Encryption is a must for most operations.

3. The system should be easy to use.

4. The ability to use GPS to locate portable and mobile units would be nice to have.

The draft of this record was sent to Clinton Vidal and Dan Barrett on October 1, 2008.

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East Bay Regional Communications System
Needs Analysis
Final Group Agency Meeting Record

Organization/Agency	Antioch Police Department
File Name:	Antioch PD Final Group Agency Meeting Record.doc
Date of Meeting:	18 Sept 2008
Location Meeting:	Contra Costa County Technical Services Building
Meeting Attendees:	Tammany Brooks, Sergeant
	Scott Willerford, Lieutenant
CTA Attendees:	Rob Burdeaux, Communications Engineer
	Walter Currier, Communications Engineer

The following points were conveyed to CTA during this Group Agency Meeting:

Organization and Responsibilities

1. The Antioch Police Department is located in eastern Contra Costa County and has about 125 sworn officers and approximately 80 vehicles. They have about 400 portables including all agencies that use the system.

Present Situation

1. They operate their own VHF radio system and dispatch for themselves and Brentwood PD. They have two repeated channels, one non-repeated tactical channel, and one public works channel. Their system is maintained by the County, including the sites on Walton Lane Tower and Country Hills. They utilize Motorola HT750's and 1000's.

2. They can talk to the Sheriff's Officers and Brentwood PD.

3. They use Data 911 to provide mobile data. They are in the process of moving to a commercial provider.

Present Problems

1. Dead spot on Vasco Rd and near the city limits

2. Channels are crowded, at any given time they have approximately 40 users on the same channel.

3. Brentwood PD units have poor mobile coverage.

4. Poor mobile data coverage.

Future Requirements

1. They need to be able to talk to BART, EBR Parks, Pittsburg, Oakley, Clayton, Concord and Livermore in Alameda County.

2. Would like to be able to utilize more channels.

East Bay Regional Communications System Authority
Needs Analysis
Final Group Agency Meeting Record

Organization/Agency	Brentwood Police Department
File Name:	Brentwood PD Final Meeting Record.doc
Date of Meeting:	18 Sept 2008
Location of Meeting:	Contra Costa County Technical Services Building
Meeting Attendees:	George Aguirre, Officer
	Mark Misquez, Sergeant
CTA Attendees:	Rob Burdeaux, Communications Engineer
	Walter Currier, Communications Engineer

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. The Brentwood Police Department is located in eastern Contra Costa County and has about 60 sworn officers and approximately 30 vehicles.

Present Situation

1. They operate and are dispatched by Antioch's VHF radio system. They have two non-repeated channels that they also utilize. Their radios are maintained by a private vendor and a majority are narrowband capable. .

2. They can talk to the Sheriff's and Antioch.

3. They utilize a low speed mobile data computer (Data 911). Currently exploring options with cell providers for a near future upgrade.

Present Problems

1. Channels are crowded.

2. Many dead spots, including at the police station (A 150 foot tower has just recently been erected near the police station).

3. Poor coverage in Brentwood.

4. Existing mobile data maintenance through Data Radio is slow to respond.

Future Requirements

1. They need to be able to talk to BART, SAC VISTA, EBR Parks and Alameda County.

2. Would like to be able to utilize more channels.

3. Would like to be able to establish scan groups.

4. Want GPS integrated portables and mobiles.

5. Want radio identifiers displayed when keying the microphone.

6. Need an operable emergency button.

7. Would like encryption capable tactical channels.

8. They would like a functionality and ease of use in the new radio similar to that of the HT750 model.
9. They need secure channels with encryption.

The draft of this record was sent to Officer Aguirre and Sergeant Misquez on October 1, 2008.

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East Bay Regional Communications System Authority
Needs Analysis
Final Group Agency Meeting Record

Organization/Agency	Contra Costa County District Attorney Investigators
File Name:	CCC DA Investigators Final Meeting Record.doc
Date of Meeting:	16 Sept 2008
Location of Meeting:	Contra Costa County Technical Services Building
Meeting Attendees:	Jay Clark, Contra Costa County DA Investigations
CTA Attendees:	Rob Burdeaux, Communications Engineer
	Walter Currier, Communications Engineer

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. The Contra Costa County DA has approximately 20 investigators that utilize the CCC Sheriff's radio system throughout the entire County. When in Richmond, they will carry the 800MHz radios.

Present Situation

1. They utilize their NEXTELs a lot due to the talk groups feature. They do not have any mobiles or mobile data computers.

2. They are usually not a first responder.

Present Problems

1. Since they are county-wide, they need interop with all County and sometimes adjoining counties. Hard to carry radios for everyone that they will need to talk to.

2. The current radios are usually not adequate and they rely on someone nearby to relay communications traffic.

Future Requirements

1. They need a radio that they can talk to all County agencies.

2. They would like encryption.

3. If they were to get MDC, then they would need to be able to take them out of the cars at night while they are parked at home.

The draft of this record was sent to Jay Clark on October 1, 2008.

East Bay Regional Communications System Authority
Needs Analysis
Final Group Agency Meeting Record

Organization/Agency	Contra Costa County Sheriff's Office
File Name:	CCC Sheriff Office Final Meeting Record.doc
Date of Meeting:	16 Sept 2008
Location of Meeting:	Contra Costa County Technical Services Building
Meeting Attendees:	Dan Gouilz, Sergeant
	Danny Bivian, Deputy
	Paul Beard, Sergeant
	James Butler, Detective
	Elmer Glasser, Deputy
CTA Attendees:	Rob Burdeaux, Communications Engineer
	Walter Currier, Communications Engineer

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. The CCC Sheriff's office has their own radio system and is self dispatched out of Martinez, CA. They are comprised of approximately 850 sworn officers. They operate throughout the County in three separate divisions, East, West and Central.

Present Situation

1. They operate on the VHF system that is divided into three operational sections.
2. Have to change channels during pursuits crossing operational radio boundaries.
3. Several vehicles use scanners to monitor CHP radio traffic.

Present Problems

1. Many holes in the coverage in the central part of the County and Martinez.
2. Dispatch channels are crowded and the tactical channels are not monitored by dispatch.
3. Since each portion of the County uses a different channel, it is difficult to monitor current operational channel and adjacent channels with other traffic.
4. Channel 2 has interference from adjacent counties.
5. Delayed communications (3-5 mins) when relaying information through dispatch.
6. Unable to talk to fire agencies.
7. Bleed over from other jurisdictions on channels.
8. Radios are not programmed with all the channels they need for interoperability.
9. Not portable based coverage.

Future Requirements

1. Need to be able to utilize one radio and talk to any jurisdiction or agency within Contra Costa County (Fire, Richmond, Concord, etc). This would likely be through the use of interoperability talkgroups.

2. Need direct interoperability with Alameda, Oakland, Livermore and Pleasanton, and with San Ramon Valley Fire District.
3. Need to be able to rapidly talk to CHP.
4. Need for each sector to talk directly to every PD in their area without going through dispatch.
5. Need portable coverage.
6. Dispatch needs to be able to ID who is keying the radio.
7. Radios within all sheriff vehicles need to be consistent.
8. Need encryption for surveillance operations.
9. Would like entire Sheriff's Office to be able to hear one talkgroup.
10. Ability to identify which radio has an open mic.
11. Need a scan capability to be able scan for radio traffic on other channels.

The draft of this record was sent to Sergeant Gouilz, Deputy Bivian, Sergeant Beard, Detective Butler, and Deputy Glasser on October 1, 2008.

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East Bay Regional Communications System Authority
Needs Analysis
Final Group Agency Meeting Record

Organization/Agency	Clayton Police Department
File Name:	Clayton PD FINAL Meeting Record.doc
Date of Meeting:	17 Sept 2008
Location of Meeting:	Contra Costa County Technical Services Building
Meeting Attendees:	Sgt Scott Dansie, City of Clayton Police Department
CTA Attendees:	Rob Burdeaux, Communications Engineer
	Walter Currier, Communications Engineer

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. The Clayton PD has 11 sworn officers and 10 vehicles. Clayton contracts with Concord for Dispatch, PSAP and Radio support.

Present Situation

1. The PD primarily uses UHF conventional and shares tactical and operational channels with Concord PD. The vehicles are also equipped with VHF mobiles for interoperability with the CC Sheriff's Office and other surrounding jurisdictions.

2. The PD uses Nextel cellular heavily to provide secure communications and the ability to talk within the department. This functionality is beneficial because they do not have a dedicated radio channel for Clayton PD.

3. Recently purchased new Motorola HT 1250 portable radios (within last 2 years) and all portables are narrowband compliant. The mobiles in the vehicles are a mix of models and some of them are not narrowband capable.

4. Mobile data is supported through Motorola MW 800 on a commercial Sprint/Nextel network. About 8 of the 10 vehicles are equipped with mobile data.

Present Problems

1. Clayton PD does not have a dedicated channel and must share with Concord. This presents a problem when they need to conduct Clayton specific operations.

2. They cannot talk to maintenance services over the radio.

3. Several dead spots exist with the Nextel coverage. Different dead spots exist with the UHF system, specifically along the Marsh River Canyon.

4. Cannot talk to the Sheriff's Office when outside the vehicle. They have VHF mobiles, but they do not have VHF portables.

5. They need to talk to CHP and they cannot. Interoperability with CHP would be helpful when responding to accidents along Marsh Creek Rd.

6. They cannot talk to State Parks and often have the need to talk to personnel from Mount Diablo State Park.

Future Requirements

1. They would like the ability to talk from an individual radio to another individual radio.
2. The use of talk groups would be helpful.

The draft of this record was sent to Sergeant Dansie on October 1, 2008.

Corrected draft was returned to CTA Communications on 10/3/2008.

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East Bay Regional Communications System Authority
Needs Analysis and Analysis of Proposed System Design
Final Meeting Record

Organization/Agency	Contra Costa Sheriff's Office Investigations
File Name:	Contra Costa Sherrif Investigations Final Meeting Record.doc
Date of Meeting:	September 17, 2008
Location of Meeting:	Contra Costa County Technical Services Building
Meeting Attendees:	Mike Jackson, Contra Costa Sheriff's Office Sergeant
	J. Rivera, Contra Costa Sheriff's Office Detective
CTA Attendees:	Rob Burdeaux, Telecommunications Engineer
	Walter Currier, Telecommunications Engineer

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. Contra Costa Sheriff's Investigations cover all of Contra Costa County. The Investigations department has 35 sworn officers.

Present Situation

1. They operate on the Contra Costa Sheriff's Office system and share channels with the portion of the County that they are operating in. They have additional tactical channels, but these channels do not provide the same coverage and dispatch cannot monitor the channel. No significant coverage problems.

2. They use NEXTELs 70%-80% of the time due to surveillance / encryption needs.

Present Problems

1. Channel crowding, especially when vehicle operations are conducted, which happens twice a month. During these times patrol officers are using the channels to coordinate vehicle operations and the channel is unavailable.

2. Poor NEXTEL coverage exists in several areas throughout the County.

3. They have no interoperability with CHP or any of the Police Departments that are using UHF.

Future Requirements

1. They need encryption capabilities.

2. They need interoperability with CHP.

3. The ability for dispatch to identify who is keying the mic.

4. They need interoperability with all Police Departments throughout the County.

The draft of this record was sent to Sergeant Jackson and Detective Rivera on October 1, 2008.

East Bay Regional Communications System Authority
Needs Analysis
Final Group Agency Meeting Record

Organization/Agency: Contra Costa Technical Meeting
File Name: Contra Costa Technical Meeting FINAL.doc
Date of Meeting: 15 Sept 2008
Location of Meeting: Contra Costa County
Meeting Attendees:

Name	Agency	Email
Chris Suter	Contra Costa Fire	csute@cccfpd.org
Ed Woo	DOIT	ewoo@doit.cccounty.us
Brian Addington	Pittsburg PD	baddington@ci.pittsburg.ca.us
Scott Willerford	Antioch PD	swillerford@ci.antioch.ca.us
Tim Stuart	Concord PD	tims@cpd.ci.concord.ca.us
Kevin Janes	El Cerrito Fire	kjanes@ci.el-cerrito.ca.us
Kory Kerwin	Contra Costa Fire	kkerw@cccfpd.org
Bob Williams	Moraga/Orinda Fire	bwilliams@mofd.org
Matt Boyer	DOIT	mboye@doit.cccounty.us
Lynette Journeay	EBRPD	ljourneay@ebparks.org
Steve Hart	SRUFPD	shart@srvfire.ca.gov
Tom Whittington	DOIT	tom.whittington@doit.cccounty.us
Wade Gomes	Brentwood PD	wgomes@ci.brentwood.ca.us
Donna Harper	Pleasant Hill PD	dharper@ci.pleasant-hill.ca.us
Gary Hesson	BART PD	ghesson@bart.gov

CTA Attendees: Rob Burdeaux, Communications Engineer
Walter Currier, Communications Engineer

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. This meeting focused on the technical details of the current and future communication system for Contra Costa County. CTA met with the following agencies, Contra Costa Fire, Department of Information Technology (DoIT), Pittsburg PD, Antioch PD, Concord PD, El Cerrito Fire, Moraga/Orinda Fire, East Bay Regional Park District (EBRPD), San Ramon Valley Fire Protection District (SRVFPD), Brentwood PD, Pleasant Hill PD and Bart PD. In addition those who attended the meeting provided information concerning Walnut Creek and Martinez.

Present Situation

1. General Comments – The County uses a 2 tone sequential paging system that uses dispatch channels. All radios in the County were reprogrammed 2-3 years ago to ensure that common frequencies were named the same in each agency. The County has a VHF/UHF crossband repeater on Sydney Drive that connects the Sheriff Tac with the County Common channel for interoperability.

2. Contra Costa Fire – They dispatch for seven fire districts. The communication system is a VHF conventional system with 3 repeated channels and 5 – 7 sites that are voted. They have 12 voting receivers on each dispatch channel. They have an additional simplex control station channel that is repeated as a simulcast channel. In addition they have 5 simplex VHF fireground tactical channels and one command channel that operates off a single repeater at Mt Diablo. There is a wireline controlled station that uses statewide Fire White 1 for use in the tunnel with base stations that are voted and connected to 3 high level sites used for mutual aid in the tunnel on Hwy 24. Contra Costa Fire also has 3 mobile command posts with a total of 11 ACU 1000's. Tactical Incident Based Radios are located in Marsh Creek Canyon, Bear Valley, Ramones Valley, and Crockett. The system is a wireline controlled 8 channel with remote channel changing capable. They reported good interoperability with federal agencies with ability to patch channels for UHF and shared VHF channels for other VHF users. There are two low band VHF freqs at 33 and 46 MHz that are used occasionally for EOC coordination. CLEMARS is available for interoperability, but rarely used. Good interoperability currently with federal and other regional fire agencies. Relatively happy with current coverage. System serviced by DoITT.

3. San Ramon Valley Fire Protection District – They have a 4 site simulcast VHF system and one stand alone repeater on Mt. Diablo. In addition they have 4 UHF tactical channels with a repeater on Mt. Diablo which are narrowbanded. Three of the sites are a single channel and they have an additional 2 simplex channels. Pyramid extenders are used. System serviced by DoITT.

4. El Cerrito / Richmond Fire – They have an 800 MHz trunked system with 8 channels. The microwave used to the support the system is a star point hub configuration. They use the County VHF system as a backup. All vehicles are dual equipped with 800 MHz and VHF narrowband. They have a few P25 subscriber units and Richmond Fire and PD are in the process of purchasing P25 radios. System serviced by Daily Wells.

5. Pittsburg PD – They use the Contra Costa Sheriff's VHF system and are dispatched by the Sheriff's Office. Have their own UHF channel for use as well when system is busy.

6. Antioch PD – They have 6 consoles in the dispatch center. They share 2 VHF channels with Brentwood PD. They have a 3rd tactical channel. Operate off of two low site transmitters, 6 receivers. None of the radios are P25 capable. Contra Costa County is contracted to maintain their system. The repeater sites are narrowband capable, but not the radios.

7. East Bay Parks – The system covers 4 counties with a low band VHF system. They have 3 frequencies or transmitters at each site with each site connected via a DS1 digital microwave backbone. The first channel is referred to as Dispatch and has 13 receivers, 10 transmitters, not steered. The second channel is referred to as Park District / Fire and is similar to the dispatch channel. The third channel is referred to as Police Tactical is has 8 transmitters and 6 receivers. None of the channels are narrowband or P25. Utilize a Harris DS1 microwave ring to connect the sites. They have a command vehicle with an ACU 1000. In addition they have highband radios in the police vehicles and they use pyramid VHF repeaters.

8. Pleasant Hill PD – They have a dispatch center. The system is a UHF 2 channel repeated system. They have an additional repeated tactical channel. All three repeaters are narrowband capable and about 7 years old. The equipment is maintained by Motorola.

9. Brentwood PD – In addition to use of Antioch system, Brentwood PD has 2 stand alone VHF repeaters that are used for special events and training currently on top of PD roof. In addition the City has built a new 125 foot tower. The repeaters are scheduled to be moved to the new tower.

10. BART – BART uses an 800 MHz MA-COM EDACS 10 channel system. The system covers 4 counties and has 7 low level sites and 70 underground amplifier sites. All tunnels are wired for continuous communications. They have an additional repeated simulcast channel on 4 high level sites. The system supports 3000 radios and 40 talkgroups. They use the national mutual aid channels for interoperability. They have 50 portables that are P25.

11. Concord PD – They use a UHF 3 channel voted system that has 3 sites. Motorola maintains the system. They have 500 subscribers and the system is narrowband capable. The MTS 2000 subscriber units are nearing end of life. They utilize CLEMAR receivers and cross band repeaters to interoperate. Dispatch has Gold elite consoles.

12. Walnut Creek – They use a UHF 2 channel system that is maintained by Day Wireless.

13. Martinez PD – The UHF simulcast system is 5-6 years old and has 4 sites.

14. EMS – The EMS agencies use a 4 channel T-Band system with 2 County wide simulcast voted channels with 4 transmitter sites. The system has 6 transmitters per site. There are an additional 2 stand alone repeaters. The equipment was replaced around 2000 and is maintained by the County. Kenwood radios.

15. Contra Costa Sheriff – They have three VHF channels that are distributed similar to the Contra Costa Fire system. The first channel, P1 covers the west county and has 12 receivers. The second channel, P2, covers the central portion of the county and has 12 receivers. The third channel, P3, has 2 transmitters and 8 receivers and covers the eastern portion of the County. A fourth tactical channel has 4 transmitters that operate in simplex mode. P1, P2, and P3 are narrowband capable and the forth tactical channel is not. The Sheriff also uses a 2 channel 800 MHz system for data that is mainly used for low data rate (300 BAUD – 1200 BAUD) uses. There are 5 transmit sites that support the mobile data. The Sheriff also uses commercial wireless cards for broadband data rates. The jail has 3 facilities that have repeated 800 MHz local systems for use in the jail only. The jails are located at 12000 Marshal Creek, 555 Giant Highway, and 1000 Ward Street. Rio Vista PD is dispatched by the Contra Costa Sheriff, but it is located in Solano County. They have one wire-lined transmitter/receiver that goes into the tunnel for communication during tunnel accidents. They own 3 mobile command posts and 11 ACU1000's.

16. Moraga / Orinda Fire – Dispatched by Contra Costa Fire on Con West. Two voted receivers and a single channel for interop with Alta Mesa.

17. Moraga PD – Dispatched by County.

18. Trunked Fisher System – The County uses a UHF repeated private industry system that is maintained by Red Cloud. The system is mainly used by building inspectors, animal control, and EMS hazmat. The system is not reliable and is used until the County system comes online.

19. California Highway Patrol – Operate on a low band system for mobiles and VHF portables with pyramid repeaters.

20. State Parks – 800 MHz conventional systems.

<u>Present Problems</u>

1. The Richmond Fire system is fragile and lacks redundant paths. The microwave system for Richmond Fire is poorly designed and does not have the necessary loops.

2. Antioch and Brentwood PD report poor coverage in Brentwood at that Police Department.

3. The main channel in Antioch and Brentwood PD is very busy. Hard to get the dispatchers.

4. Pleasant Hill PD reported many coverage dead spots toward Martinez in the valleys.

5. BART reported many dead spots for portable coverage at some stations.

6. Concord PD reported poor coverage on Lime Ridge and poor in-building coverage. Coverage is also poor near Clayton and at base of Mt. Diablo.

7. Martinez PD reported poor coverage at 100 Ward Street at the Jail and at 2500 Alahambra in the hospital.
8. Moraga PD and Fire reported poor coverage in canyons and poor portable coverage.
9. Poor in-building coverage throughout the County.
10. The north east part of the County has poor coverage, especially north of the of the power lines.
11. There is a problem with thieves stealing copper from the sites.
12. A patch takes entirely too long to be effective for interoperability needs. Many times, just not possible due to hardware.
13. Interference on CCC Tac4 from San Francisco.

Future Requirements

1. The County would eventually like to have a multi-county interoperable radio system.
2. Ability to patrol the entire County without changing channels.
3. The coverage must be better than existing coverage.
4. The Fire department and the Sheriff both need portable coverage throughout the entire County, not just in the urban areas.
5. There is a concern over the vocoder in the digital systems and the effectiveness of digital systems in the fireground environment. A simplex solution is needed.
6. In-building coverage on the hip is needed.
7. Training and SOP's will be a critical component of the new system.
8. Encryption is needed.
9. Mutual aid must be easy, support cross-county pursuit, service day-to-day interoperability needs, and be user friendly.
10. An interoperability solution is needed for CHP.
11. They need to have local maintenance support with response time less than 1 hour to dispatch and 2 hours to the sites.
12. The system must be more reliable and more redundant than current system.
13. The monitoring system must be proactive.
14. The system must be easy to use.
15. The subscriber units must be rugged and waterproof, "One step below mil specs".
16. The system should use multiband radios where appropriate.
17. Local users must control the programming of the subscriber units via a technical working group.
18. The system must support OTAP and cloaning.

19. The system must be capable of zeroing out a lost or stolen radio Over the Air.
20. The system must support a telephone interconnect via satellite link in the dispatch centers in the event that the telephone company connection is lost.
21. The system should incorporate GPS at the portable level.
22. Any data must be capable of broadband speeds.

The draft of this record was sent to Chris Suter, Ed Woo, Brian Addington, Scott Willerford, Tim Stuart, Kevin Janes, Kory Kerwin, Bob Williams, Matt Boyer, Lynette Journeay, Steve Hart, Tom Whittington, Wade Gomes, Donna Harper, and Gary Hesson on October 2, 2008.

Corrected draft was returned to CTA Communications on October 7, 2008.

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East Bay Regional Communications System Authority
Needs Analysis and Analysis of Proposed System Design
Final Group Agency Meeting Record

Organization/Agency	County Connection
File Name:	County Connection Final Meeting Record.doc
Date of Meeting:	September 16, 2008
Location of Meeting:	Contra Costa County Technical Services Building
Meeting Attendees:	Edwin Joe, County Connection Supervisor Training
	Sharon Porter, County Connection Manger of Safety
CTA Attendees:	Rob Burdeaux, Telecommunications Engineer
	Walter Currier, Telecommunications Engineer

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. The County Connection operates the bus services for Contra Costa County. County Connection has 130 buses and 3 service trucks. The dispatch center is located in Concord, CA and operates 24/7.

Present Situation

1. They operate off a commercially provided radio system. They primarily use the radio to alert drivers of detours, schedule changes and other incidents that require contact with bus operators.

2. They have an emergency satellite unit in each bus that connects them to dispatch. It is tested 2 times per month.

3. They use a Navigator Data System to locate and track the buses. Each bus is also equipped with a silent alarm.

4. Cell phones are used to contact dispatch when the radios are not working. During the night shifts they issue and use NEXTELs for safety.

5. They have on-board video that is recorded on the bus.

6. Day Star is the maintenance provider for the radio and data system.

Present Problems

1. Communication between dispatch and the buses is sporadic and several coverage problem areas exist.

2. There is no capability for bus to bus communication.

Future Requirements

1. Communication from bus to bus, bus to supervisor is a must.

2. Dispatch needs to be able to make group calls.

3. They need the ability to talk from supervisor vehicles to dispatch.

4. They need to support video recording on the bus and access it remotely.

5. They work closely with the Sheriff and municipal police departments and they need to be able to communicate in order to participate in emergency service.

The draft of this record was sent to Edwin Joe and Sharon Porter on October 1, 2008.

Copy of the meeting record sent to Dan Barrett, County Connection Deputy Director, dbarr@asd.cccounty.us

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East Bay Regional Communications System Authority
Needs Analysis
Final Group Agency Meeting Record

Organization/Agency	Crockett -Carquinez Fire Department
File Name:	Crockett-Carquinez Fire Final Meeting Record.doc
Date of Meeting:	16 Sept 2008
Location of Meeting:	Contra Costa County Technical Services Building
Meeting Attendees:	Jerry Littleton, Crockett Fire Chief
CTA Attendees:	Rob Burdeaux, Communications Engineer
	Walter Currier, Communications Engineer

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. Crockett Fire department is a volunteer fire agency which operates off of the Contra Costa VHF Fire system. Crockett Fire has 3 stations, two in Crocket and 1 in Port Costa.

Present Situation

1. They operate off of the Contra Costa Fire VHF system. They maintain UHF portables and mobiles in their trucks for interoperability, mainly with Vallejo in Solano County. Some of the vehicles are equipped with VHF low band (46.38 MHz).

2. They use CH4 to interoperate with Contra Costa fire companies. They utilize voice and alpha-numeric pagers for dispatching.

3. Contra Costa fire dispatch does a good job of getting the fire agencies off to a tactical channel to run the incidents. They can talk to most everyone that they need to communicate with.

4. Most of the vehicles are equipped with scanners, which are used to monitor the police channels. Direct interoperability with police is only available through dispatch. Although Cal Coord is set up for interoperability, most law enforcement agencies do not use this channel.

Present Problems

1. There are some coverage issues in the canyons and along Crockett Blvd.

2. Poor interoperability with the police.

3. At times there is channel crowding on the 3 dispatch channels. The Tactical channels also get crowded during incidents.

Future Requirements

1. They would like to have one radio with multiple talk groups.

2. Better portable coverage.

3. Limit the number of users on one channel / talk group.

The draft of this record was sent to Chief Littleton on October 2, 2008.

East Bay Regional Communications System Authority
Needs Analysis
Final Group Agency Meeting Record

Organization/Agency	Danville Police Department
File Name:	Danville PD Final Meeting Record.doc
Date of Meeting:	17 Sept 2008
Location of Meeting:	Contra Costa County Technical Services Building
Meeting Attendees:	Michael Carson, Police Officer
	Ben Alldritt, Police Officer
CTA Attendees:	Rob Burdeaux, Communications Engineer
	Walter Currier, Communications Engineer

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. The Danville PD is located in south-central Contra Costa County along Interstate 680. They have approximately 29 sworn officers, 15 patrol units and 2 additional vehicles with mobile radios. Day Wireless performs maintenance for them.

Present Situation

1. They are dispatched and contracted by the Sheriff's office and operate on Channel 2 of the SO's VHF system. They officers are all issued their portable. The coverage is described as average.

2. They utilize scanners in their vehicles to hear what is going on with the fire departments.

3. They utilize mobile data computers to run license checks, but are unable to get the pictures.

Present Problems

1. CH2 is not extremely clear. Hear occasional bleed over from Yuba County.

2. Have to relay through dispatch to communicate with CHP, Fire and all UHF users.

3. They have occasional channel crowding.

4. Their ear pieces sometime interfere with transmissions.

5. Excessive wind and background noise on the motorcycle mics even when used indoors.

6. There is inconsistent programming and use of the tactical channels.

Future Requirements

1. Clearer, less crowded channels.

2. Better interop with local and State police departments.

The draft of this record was sent to Officer Carson and Officer Alldritt on October 2, 2008.

Corrected draft was returned to CTA Communications on October 3, 2008.

East Bay Regional Communications System Authority
Needs Analysis and Analysis of Proposed System Design
Final Group Agency Meeting Record

Organization/Agency	Contra Costa Sheriff's Office- East County Investigations
File Name:	East CCC Sherrif Investigations Final Meeting Record.doc
Date of Meeting:	September 18, 2008
Location of Meeting:	Contra Costa County Technical Services Building
Meeting Attendees:	Mike Burton, Contra Costa Sheriff's Office Lieutenant
	Oscar Aranda, Contra Costa Sheriff's Office Detective
	Ted Anderson, Contra Costa Sheriff's Office Sergeant
CTA Attendees:	Rob Burdeaux, Telecommunications Engineer
	Walter Currier, Telecommunications Engineer

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. Contra Costa Sheriff's Investigations cover all of Contra Costa County. The Investigations department has 35 sworn officers. This eastern portion of the County is headquartered in Oakley, CA.

2. They dispatch for Pittsburg PD, and they talk with them on a regular basis. They also dispatch for Rio Vista PD in Solano County.

Present Situation

1. They operate on Channel 3 of the Contra Costa Sheriff's Office system and share channels with the portion of the County that they are operating in.

2. Frequently utilize Nextels.

Present Problems

1. Channel crowding, especially when vehicle suppression enforcement team (VSET) operations are conducted, which happens twice a month.

2. Poor coverage exists in Marsh Creek, Bethel Island and several other areas throughout the eastern part of the County.

3. The tactical channels (TAC 1-4) do not have county-wide coverage and are not monitored by dispatch.

4. They have no interoperability with CHP.

5. SWAT currently uses Nextel due to lack of encryption on the Sheriff's channels.

Future Requirements

1. They need encryption capabilities.

2. They need more channels, to be used for incident based, multi-agency responses and general administration traffic.

3. They need interoperability with Richmond, Brentwood, Antioch, Rio Vista, CHP, CA State Bureau of Narcotics Enforcement agencies, Parole and Probations and fire agencies.

4. They need foot pedal or steering wheel activated microphones so that officers in a pursuit are not required to take their hands off of the wheel to talk.

5. GPS in the portables.

6. Supervisor mapping capabilities on the MDC's.

7. An emergency button that works, with emergency override priority.

8. Want a small microphone for the chest that doesn't require the officer to drop or turn his head to talk into it.

9. Identifier that indicates who has keyed the mic.

10. Navigation and tactical information for school zones and other areas available from mapping software in MDC ("Shelter in Place" feature).

11. Remote keying of the mobile radio from a foot pedal or from steering wheel for use in vehicle pursuits.

The draft of this record was sent to Lieutenant Burton, Detective Aranda, and Sergeant Anderson on October 2, 2008.

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East Bay Regional Communications System Authority
Needs Analysis and Analysis of Proposed System Design
Final Group Agency Meeting Record

Organization/Agency	El Cerrito Police Department
File Name:	El Cerrito Police Department FINAL Meeting Record.doc
Date of Meeting:	September 16, 2008
Location of Meeting:	Contra Costa County Technical Services Building
Meeting Attendees:	Sid Hubbs, El Cerrito Police Department Officer
	Paul Keith, El Cerrito Police Department Sergeant
	Mike Regan, El Cerrito Police Department Commander
CTA Attendees:	Rob Burdeaux, Telecommunications Engineer
	Walter Currier, Telecommunications Engineer

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. El Cerrito PD is located in the southwestern corner of Contra Costa County just south of the City of Richmond. They currently have about 42 sworn officers and 24 vehicles.

Present Situation

1. They operate off Channel 3 of the Richmond 800MHz system and share the channel with Contra Costa College, Kensington, and San Pablo PD. Channel 4 is used as a secondary channel, and is also shared by the same agencies. They are dispatched by the City of Richmond. There are 36 talkgroups available for use, but not training or procedures have been developed for the use of the radio.

2. The 800 MHz system helps maintain interoperability with all agencies on the 800 MHz system in the western portion of the County. The 800 MHz NPSTC channels are available in the radios, but no training has been provided on their use.

3. Surveillance uses a tactical channel that is not encrypted.

Present Problems

1. Maintenance of the Richmond radio system is reactive not proactive and appears to be a management by crisis. Most of this is likely due to the understaffed maintenance department.

2. Cannot communicate with the Contra Costa Sheriff.

3. No VHF assets are in dispatch and dispatch can only communicate with other agencies that are not on the 800 MHz system by using the telephone.

4. Several dead spots exist in the area.

5. There are 8 TAC talkgroups in the current system with no procedures on the management and use of the talkgroups.

6. The response procedures for maintenance are poor. Equipment response time is poor and the time to replace and repair parts is unacceptable. In many cases they wait for a batch to be sent and they are return missing components, or with original components swapped out for older non-working equipment.

7. They occasionally receive busy tones when accessing the current radio system.

Future Requirements

1. Need interoperability with Albany, BART, Sheriff's Office and the City of Oakland.
2. Need to correct the existing dead spots.
3. Need to provide a system that is easy to use.
4. Each agency needs their own tactical channel.
5. There is a desperate need for fleet mapping of the existing system.
6. Need to have dedicated incident based channels.
7. Need encrypted channels for surveillance.
8. Users need to be trained on use of the radio functions.

The draft of this record was sent to Officer Hubbs, Sergeant Keith, and Commander Regan on October 2, 2008.

Corrected draft was returned to CTA Communications on October 2, 2008.

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East Bay Regional Communications System Authority
Needs Analysis and Analysis of Proposed System Design
Final Group Agency Meeting Record

Organization/Agency	Hercules Police Department
File Name:	Hercules Police Department Final Meeting Record.doc
Date of Meeting:	September 16, 2008
Location of Meeting:	Contra Costa County Technical Services Building
Meeting Attendees:	Mark Stevenson, Hercules Police Department Sergeant
CTA Attendees:	Rob Burdeaux, Telecommunications Engineer
	Walter Currier, Telecommunications Engineer

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. Hercules PD is located in the northwestern corner of Contra Costa County and currently utilizes about 50 radios within the department.

Present Situation

1. They operate off of the Richmond 800MHz system and are dispatched by Pinole PD.

2. Sometimes have to operate entire agency off of their Nextel radios, however during this time dispatch cannot monitor Nextel traffic.

3. Interoperability is poor in their area.

Present Problems

1. No communications during prison transports.

2. System repeaters not well maintained leading to frequent down times. On several occasions a repeater has lost house power and switched over to generators. The generators run until they are out of fuel and the warnings are not acknowledged and the system is down until the generators can be refueled and the house power restored.

3. Batteries on their 800MHz portables are very poor. Sometime go through three a day.

4. Shoulder Microphones go bad frequently.

5. No coverage at the County Jail.

Future Requirements

1. Would like GPS at the portables for officer safety.

2. Would like coverage to get better and correct dead spots.

3. Better portable radios with batteries that last and portable charger for the vehicles.

The draft of this record was sent to Mark Stevenson on October 2, 2008.

East Bay Regional Communications System Authority
Needs Analysis
Final Group Agency Meeting Record

Organization/Agency	Kensington Police Department
File Name:	Kensington PD Final Meeting Record.doc
Date of Meeting:	16 Sept 2008
Location of Meeting:	Contra Costa County Technical Services Building
Meeting Attendees:	Ricky Hull, Sergeant
CTA Attendees:	Rob Burdeaux, Communications Engineer
	Walter Currier, Communications Engineer

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. The Kensington PD is located in western Contra Costa County along the Alameda County border north of Berkeley and has 10 sworn officers and 7 vehicles with radios.

Present Situation

1. They are dispatched by Richmond and utilize the Richmond 800MHz system and share a talk group with El Cerrito PD and San Pablo PD.

2. They have good portable coverage today.

3. Use mobile data heavily.

4. Utilize Nextel phones to talk to Sheriff. The current mindset is that Nextels are more reliable than the radio system.

5. All interoperability with FD is usually coordinated through dispatch.

6. The Nextels are used for paging.

Present Problems

1. System reliability. The system is often down and is unreliable.

2. Have to relay through dispatch to communicate with CHP. Dispatch must call CHP dispatch via telephone and they are often put on hold.

3. The talk group is often crowded and they have come to rely on Nextels for communication.

Future Requirements

1. They need the new system to be reliable.

2. Would like direct interoperability with the fire since they respond to all fire incidents.

3. They do not see a need for encryption in the new system.

The draft of this record was sent to Sergeant Hull on October 2, 2008.

East Bay Regional Communications System Authority
Needs Analysis
Final Group Agency Meeting Record

Organization/Agency	Martinez Police Department
File Name:	Martinez PD Final Meeting Record.doc
Date of Meeting:	17 Sept 2008
Location of Meeting:	Contra Costa County Technical Services Building
Meeting Attendees:	J. Stretch, Martinez Police Officer
	M. Morley, Martinez Police Assistant
CTA Attendees:	Rob Burdeaux, Communications Engineer
	Walter Currier, Communications Engineer

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. The Martinez PD is located in central Contra Costa County and is the County seat. They have 32 vehicles, including motors, and swat vehicles and 50 sworn officers.

Present Situation

1. They are self dispatched and operate a UHF radio system. They can interoperate with Pleasant Hill and Walnut Creek. They have sites located in Wildcroft, Alahambra Valley at Stonehurst, Golden Hills Park and a primary site on Harbor View Drive. They are narrowband compliant.

2. They utilize a mobile data system with Verizon cards and rely on them heavily.

3. At times officers have had to utilize Nextel phones to call in a pursuit to dispatch.

4. They use Mobile Data through a commercial provider.

Present Problems

1. Their coverage is very problematic due to the extremely hilly terrain. Poor coverage toward Pleasant Hill, Wilow Pass to McHaven Rd. System basically only works inside the City limits.

2. Have to relay through dispatch to communicate with CHP.

3. No interoperability with the Sheriff or the users of the Richmond system whom they see frequently. They have not ability to talk with VHF or 800 MHz users, either in the vehicles or in dispatch (other than the telephone from dispatch to dispatch).

Future Requirements

1. They need better coverage.

2. Would like direct interoperability with the fire, Sheriff, and other adjacent agencies including the Fire Department.

3. They would like the emergency buttons on the radios activated.

The draft of this record was sent to Officer Stretch and Assistant Morley with the Martinez Police Department on October 2, 2008.

East Bay Regional Communications System Authority
Needs Analysis and Analysis of Proposed System Design
Final Group Agency Meeting Record

Organization/Agency	Moraga / Orinda Fire Department
File Name:	Moraga / Orinda Fire Department Final Meeting Record.doc
Date of Meeting:	September 17, 2008
Location of Meeting:	Contra Costa County Technical Services Building
Meeting Attendees:	Ed Borden, Moraga Fire Department Battalion Chief
CTA Attendees:	Rob Burdeaux, Telecommunications Engineer
	Walter Currier, Telecommunications Engineer

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. Moraga and Orinda Fire District is located in western Contra Costa County. They currently have 60 sworn personnel (about 20 on shift at a time) and 25 vehicles that are equipped with mobiles. They have 5 fire stations and 5 fire companies.

Present Situation

1. They operate on the VHF Contra Costa County fire system and are dispatched by Contra Costa Fire. They have some command vehicles that are equipped with UHF and 800 MHz mobiles for interoperability. They use Kenwood mobiles and Motorola portables. Portable coverage is pretty good. They also carry BART radios.

2. They use a "town frequency" for interoperability with police in Orinda and Moraga. This is already narrowbanded.

3. Occasionally they are able to contact CHP, face to face on an incident, and coordinate talking to them using Cal Coord.

4. They currently use mobile data.

Present Problems

1. Poor coverage exists up in the canyon areas.

2. They have no dispatch to dispatch communications other than using the POTS to dial another dispatch center

Future Requirements

1. They need to maintain VHF radios for interoperability needs.

2. The budget and cost of purchasing and maintaining a new radio system are of great concern.

3. The topography in and around Moraga and Orinda make radio communications a challenge.

4. GPS tracking on both mobiles and portables would be nice to have.

5. Dual band radios would eliminate the need to carry two radios, since they must continue to maintain VHF and the County will likely move to 700 / 800 MHz.

6. They have a need to interoperate with BART.

The draft of this record was sent to Chief Borden on October 2, 2008.

East Bay Regional Communications System Authority
Needs Analysis and Analysis of Proposed System Design
Final Group Agency Meeting Record

Organization/Agency	Moraga Police Department
File Name:	Moraga Police Department Final Meeting Record.doc
Date of Meeting:	September 17, 2008
Location of Meeting:	Contra Costa County Technical Services Building
Meeting Attendees:	Jeff Price, Moraga Police Department Sergeant
	Larry Rou, Moraga Police Department Officer
CTA Attendees:	Rob Burdeaux, Telecommunications Engineer
	Walter Currier, Telecommunications Engineer

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. Moraga PD is located in western Contra Costa County just south of the City of Orinda. They currently have 13 sworn officers and 9 vehicles.

Present Situation

1. They are dispatched through the Contra Costa Sheriff's Office and share a channel with Orinda, Lafayette and North Richmond PD. They primarily use of Channel 1 on the Sheriff's VHF system.

2. They have an additional "town channel" that they use for interoperability with the Moraga Fire Department.

3. They do not have a daily need to talk with Pleasant Hill / Martinez or Walnut Creek, but occasionally there is a need and they have to use dispatch to relay.

4. They rely on NEXTELs for backup and for getting help when channel 1 is busy or congested.

5. For mobile data they use the Sheriff's mobile data system and most vehicles are equipped with MDC's. They use this heavily.

Present Problems

1. Poor coverage exists in Canyon.

2. The channel is congested at times, especially during vehicle task force days.

Future Requirements

1. Budget and money for purchase of a new system and for maintenance is a big concern.

2. They need interoperability with CHP.

3. They need channels / talk groups that support multi-jurisdictional interoperability.

4. Encryption would be nice to have.

The draft of this record was sent to Sergeant Price and Officer Rou on October 2, 2008.

East Bay Regional Communications System Authority
Needs Analysis
Final Group Agency Meeting Record

Organization/Agency	Orinda Police Department
File Name:	Orinda PD FINAL Meeting Record.doc
Date of Meeting:	17 Sept 2008
Location of Meeting:	Contra Costa County Technical Services Building
Meeting Attendees:	Nate McCormack Orinda PD
CTA Attendees:	Rob Burdeaux, Communications Engineer
	Walter Currier, Communications Engineer

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. The Orinda PD has 14 sworn officers and 10 vehicles. Orinda contracts with Contra Costa County Sheriff's Office for Dispatch, PSAP and Radio support. Orinda shares a channel (Channel 1 on Sheriff System) with Lafayette and Moraga and the Sheriff's Office in the western portion of the County.

2. The department consists of mainly patrol officers and 2 detectives.

Present Situation

1. The PD primarily uses channel 1 on the Sheriff's VHF simulcast system. Occasionally they will use one of the additional tactical channels; either channel 4 or channel 8. They have no UHF or 800 MHz radios.

2. The PD uses Nextel cellular to provide secure communications and the ability to talk within the department. This functionality is beneficial because they do not have a dedicated radio channel for Orinda PD and the Sheriff's channel is often busy with other traffic.

3. Mobile data is supported through the Sheriff's Office system, but they do not have mapping capability.

Present Problems

1. They cannot talk to Berkley, Alameda County Sheriff's Office, Oakland or the California Highway Patrol over the radio.

2. Several dead spots exist with the Nextel coverage. Different dead spots exist with the UHF system, specifically along Hwy 24 between Camino Pablo and Gateway. An additional 250 homes are being built in the Gateway area which will likely introduce additional coverage problems. Poor Coverage also exists in northern Orinda, north of Bear Creek and near the intersection of Moraga Way and Ivy. In these areas coverage is sporadic for mobiles and not at all for portables.

3. The emergency button on the radios, both mobiles and portables, is disabled.

4. Dispatch does not have the ability to track where a vehicle is.

5. Channel 1 is too crowded and there is frequent bleed over. Problems seem to get even worse in the fog.

Future Requirements

1. They would like the ability to talk from an individual radio to another individual radio.

2. The use of talk groups would be helpful.

3. The display in dispatch of a unit identifier for the calling radio would be helpful.
4. Enabled emergency button.
5. Wants a county-wide channel capability for emergencies.
6. Ability to turn on a GPS function to track portables and mobiles.
7. Integrated mapping over the MDC.

The draft of this record was sent to Nate McCormack on October 2, 2008.

Corrected draft was returned to CTA Communications on 10/9/2008.

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East Bay Regional Communications System Authority
Needs Analysis
Final Group Agency Meeting Record

Organization/Agency	Pinole Fire Department
File Name:	Pinole FD FINAL Meeting Record.doc
Date of Meeting:	16 Sept 2008
Location of Meeting:	Contra Costa County Technical Services Building
Meeting Attendees:	Brian Lowry, City of Pinole Fire Department
CTA Attendees:	Rob Burdeaux, Communications Engineer
	Walter Currier, Communications Engineer

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. The Pinole Fire Department is a municipal fire department located in northwest Contra Costa County. They have 2 stations and about 7 vehicles with radios and 20 portables.

Present Situation

1. They interoperate with the Richmond 800 MHz system, but operate on the VHF County fire radio system and are dispatched from Contra Costa Fire on ConWest. Their trucks have 800MHz portables inside for interoperability with Richmond Fire and Pinole PD They are provided excellent maintenance service by DoITT.

2. Off duty personnel can be recalled with Motorola Minitor III pagers.

3. They utilize the Cooke paging system and are happy with its coverage.

4. Chief Officers have the County Nextel system.

5. They talk to other Pinole departments, Hercules, Rodeo and AMR (private ambulance company), and Richmond fire on a daily basis.

6. Sometimes need to talk to the Pinole Police and Public Works, CCC Hazmat and EMS helicopters.

7. They will need to maintain VHF radios because of the State and Federal fire agencies.

8. They currently are dispatched by Contra Costa West; any State Responsibility Area (SRA) response is coordinated on Cal Fire channels. For mutual aid they use the State highband frequencies. The tactical channel is designated by Con Fire Station.

Present Problems

1. They have no ability to communicate with VHF low band (CHP) users.

2. Con Fire Dispatch cannot hear non-repeated tactical channels.

Future Requirements

1. Training is an important part of any new radio system.

2. New radios must be durable and water resistant.

3. They would like a Pinole multi-agency talkgroup for incidents as part of an East Bay incident management structure.

4. Need a command net talkgroup that supports the Incident Command Structure (ICS) The ICS Commander must also be able to monitor two radio nets simultaneously.
5. Need an emergency button feature.
6. Need an emergency traffic capture feature that allows a radio that depress the emergency button to get immediate priority on the channel.
7. Need the radio to be safe in a wildland fire shelter.
8. Need integrated GPS in the portable radios in order to locate downed firemen.
9. Would like paging through the portables if possible.
10. Want to have a portable with clear and large alpha-numeric readouts.
11. Want the verbal announcement feature where the radio tells you when you change the channel inadvertently and a unique audible sound that notifies the user they are on the home channel.
12. Want portables to have large knobs so that operation with gloves will be easier.
13. Equip all engines with 800 MHz mobile radios.
14. Coverage that will support in building fireground for concrete buildings.
15. Integration with the MDC system used by the rest of the County.

The draft of this record was sent to Brian Lowry on October 2, 2008.

Corrected draft was returned to CTA Communications on 10/7/08.

East Bay Regional Communications System
Needs Analysis
Final Interview Record

Organization/Agency	Pinole Police Department and Dispatch
File Name:	Pinole PD Final Interview Record.doc
Date of Meeting:	16 Sept 2008
Location of Meeting:	Contra Costa County Technical Services Building
Meeting Attendees:	Paul Clancy, City of Pinole Police Department
	Chris Fodor, City of Pinole Police Department
	Sarah Ashlock, Dispatcher City of Pinole PD
CTA Attendees:	Rob Burdeaux, Communications Engineer
	Walter Currier, Communications Engineer

The following points were conveyed to CTA during this interview:

Organization and Responsibilities

1. The Pinole PD is located in northwest Contra Costa County and has 35 sworn officers and 15 vehicles with radios. They have a total of about 75-85 portables. They self dispatch and utilize the Richmond 800MHz system.

Present Situation

1. The PD shares channel 5 and 6 with the Hercules PD.
2. They have good portable coverage today.
3. Rely heavily on mobile data which is on the Sheriff's system. Low bandwidth.
4. Utilize cell phones for person to person comms.
5. Maintain a bank of VHF portables in the event they need to work with the Sheriff's Office.

Present Problems

1. There are coverage issues near the Hilltop shopping mall and the apartments on Sunnyview.
2. Radio system was down for three days at one point. All operations had to be conducted via cell phones. Loss of one transmitter causes entire site/system to go down due to a lack of redundant microwave links.
3. Interoperability with local agencies is hard during major incidents.
4. The maintenance on the radio system is poor at times. Response time varies.
5. Channel crowding not an issue.
6. Dispatchers have to utilize the telephone to communicate with other dispatches.
7. Dispatch cannot patch together other frequencies.
8. Loose communications with officers on pursuits when they exit the normal coverage area.
9. Cell Phones have poor coverage in parts of the city.
10. During a major incident at the School with multiple agencies responding from the county they had to communicate with other agencies using dispatch as a relay.

11. Since the current radio system is proprietary, only MA/COM radios will work.

Future Requirements

1. They would like multi-agency talkgroups for incidents.
2. Need to be able to talk to all players at an incident via the radio without having to relay through dispatch. In addition, they would like dispatch to be able to assign incident based talkgroups.
3. Need to be able to connect talkgroups on the fly.
4. Want expanded coverage areas.

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East Bay Regional Communications System Authority
Needs Analysis
Final Group Agency Meeting Record

Organization/Agency	Pleasant Hill Police Department
File Name:	Pleasant Hill PD Final Meeting Record.doc
Date of Meeting:	17 Sept 2008
Location of Meeting:	Contra Costa County Technical Services Building
Meeting Attendees:	Donna Harper, Information Systems Coordinator
	Dan Connelly, Lieutenant
CTA Attendees:	Rob Burdeaux, Communications Engineer
	Walter Currier, Communications Engineer

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. The Pleasant Hill PD is located in central Contra Costa County. They have about 45 vehicles and 45 sworn officers.

Present Situation

1. They are self dispatched and operate a UHF radio system. They can interoperate with Martinez, Walnut Creek and Concord, but with no other agencies.

2. They operate on the Sheriff's mobile data system with Sprint cards. They use them frequently and are satisfied with them. In addition to the Sprint cards they have a backup modem for mobile data. The system can be accessed county-wide.

3. They frequently work with the Sheriff's Office and provide cover on operations.

Present Problems

1. Hit and miss portable coverage in Alahambra and Camelback areas. Coverage problem along Alhambra Valley Rd.

2. Have to relay through dispatch to communicate with CHP and Sheriff.

3. Poor in-building coverage.

4. No Interoperability in vehicles or in dispatch with VHF and 800MHz.

Future Requirements

1. They need more coverage.

2. Need in-building coverage.

3. Need microphones that don't pick up the background noise and wind as much.

4. They would like to have the emergency button activated on the radios.

5. They would like to be able to disable a lost or stolen radio.

6. Would like to be able to talk directly and quickly to the Sheriff and other adjacent agencies.

7. Would like over the air programming and rekeying.

8. Want GPS in the portables and especially in the mobiles.
9. They would like to display the name of the officer keying the mic.
10. They need interoperability with Fire agencies.
11. Want issued portables.

The draft of this record was sent to Donna Harper and Lieutenant Connelly on October 2, 2008.

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East Bay Regional Communications System Authority
Needs Analysis and Analysis of Proposed System Design
Final Group Agency Meeting Record

Organization/Agency	Richmond Fire and El Cerrito Fire
File Name:	Richmond and El Cerrito Police Department FINAL Meeting Record.doc
Date of Meeting:	September 16, 2008
Location of Meeting:	Contra Costa County Technical Services Building
Meeting Attendees:	Sal Bonilla Jr., Richmond Fire Engineer
	Marcus Raynon, Richmond Fire Battalion Chief
	Michael Banks, Richmond Fire Chief
	Rico Rincon, Richmond Fire Engineer
	Chris Riccardi, Richmond Fire Fighter
	Luis Padilla, Richmond Fire Captain
	Kevin James, El Cerrito Fire Captain
CTA Attendees:	Rob Burdeaux, Telecommunications Engineer
	Walter Currier, Telecommunications Engineer

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. Richmond Fire consists of 7 stations and approximately 90 sworn officers. They respond to about 11,000 alarms per year. They operate off of the Richmond 800 MHz EDACS radio system. They have their own dispatch system and also dispatch for 7 other agencies.

2. El Cerrito Fire is dispatched out of Richmond Dispatch. They operate off the Richmond 800MHz system with sites located on Turquoise, Pearl, Nichols, and City Hall. Sal Bonilla Jr. is the Technical Point of Contact for the Richmond Fire EDACS radio system.

Present Situation

1. All vehicles are dual equipped with 800 MHz portables, mobiles and VHF portables and mobiles. In order to respond to adjacent agency needs, dual radios are used.

2. Fire fighters will often monitor the police channel in the staging area using a VHF scanner or 800 MHz scanner and then anticipate moving from staging area in order to improve response time.

3. In house training is conducted by the two fire departments, but no formal training on the 800 MHz system exists. There is a communications group that meets once a month in Richmond.

4. Dispatch will assign the tactical channel for the responding units to a fire. This channel will be VHF in areas the use VHF and 800 MHz in areas that have 800 MHz.

5. On the fire scene they use VHF highband radios for both TAC and CALL channels and they use the VHF portables.

6. Good portable coverage.

7. In areas of the County where dead spots do exist, they use dispatch to relay radio traffic.

Present Problems

1. Lack of available channels to support the needed talk groups. Occasionally there is a wait for channel availability.

2. Station tones are occasionally missed because of the dispatcher's wait for a channel grant.

3. The UPS Batteries are not properly maintained and there have been problems with warning lights not being acknowledged and when the system switched over to generator power, the generators ran out of fuel.

4. The maintenance of the system is poor and often long down times (sometimes days) are experienced to fix minor issues that occur at a site. Due to the spoke and hub microwave design, one down site can affect the entire system.

5. The system will support 800 MHz NPSTC channels, but they are not programmed in the radios or at the repeater sites.

6. The system has Contra County West common channels, but they are not used due to poor training and operational standards with the law enforcement agencies in West County.

7. Training does not support the use of plain text in the PD's and 10 codes make communication a challenge. As a result, fire does not talk to police that often.

8. Due to the use of telephone lines there is a 2 minute lag time between any two dispatch centers.

9. The screw on the mic often comes loose and is lost.

10. The batteries wear out quickly, sometimes within 20 minutes.

11. Sites are periodically taken offline for "maintenance", sometimes without notice.

12. There is no redundancy in the system and the loss of one site affects the entire system.

13. The system is fragile and there is no plan for short term substitutions other than using County VHF system.

Future Requirements

1. They need to have operational procedures put in place that clearly explain what to do when alarms sound in dispatch.

2. They want a redundant radio system.

3. They would like to have dual band radios.

4. They need better speaker mics that won't easily break.

5. Larger knobs would help facilitate operating the radio with gloves.

6. The portables need to be smaller and lighter.

7. In vehicle chargers are a must and should be part of the initial purchase.

8. Better batteries that last for an entire shift.

9. GPS support for both portables and mobiles.

10. Larger displays.

11. Audio that announces the channel as it is selected.

12. ICALL and ITAC need to be designed into the new system.

13. When a site fails, the system should alert users that a portion of the system is down. At a minimum dispatch should send out a message.

14. Training must be incorporated into the initial purchase and an ongoing training plan must be put in place.

15. The radio needs to be simple to use.

16. They want to have the channels recorded.

The draft of this record was sent on October 2, 2008 to:

Sal Bonilla Jr., Richmond Fire Engineer
Marcus Raynon, Richmond Fire Battalion Chief
Michael Banks, Richmond Fire Chief
Rico Rincon, Richmond Fire Engineer
Chris Riccardi, Richmond Fire Fighter
Luis Padilla, Richmond Fire Captain
Kevin James, El Cerrito Fire Captain

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East Bay Regional Communications System Authority
Needs Analysis and Analysis of Proposed System Design
Final Group Agency Meeting Record

Organization/Agency	Richmond Police Department
File Name:	Richmond Police Department Final Meeting Record.doc
Date of Meeting:	September 16, 2008
Location of Meeting:	Contra Costa County Technical Services Building
Meeting Attendees:	Michael Wang, Richmond Police Department Sergeant
	Ernest R. Loucas, Richmond Police Department Officer
	David Funk, Richmond Police Department Officer
CTA Attendees:	Rob Burdeaux, Telecommunications Engineer
	Walter Currier, Telecommunications Engineer

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. Richmond PD is located in the northwestern corner of Contra Costa County. They currently have about 160 sworn officers and 50 vehicles.

Present Situation

1. They operate on the Richmond 800MHz and are dispatched by the City of Richmond.
2. The portables are issued to an individual, which helps lengthen the battery life.
3. They use a primary talkgroup, a secondary talkgroup and a tactical talk group, TAC 7.
4. They are upgrading all MDC's in all vehicles and are moving to a New World System solution over 800 MHZ.
5. They are planning to move to a commercial provider for mobile data. The use of MDC's is an integral part of daily operations.

Present Problems

1. There are too many buttons on the existing radios and the use of the buttons is too confusing.
2. The knobs are hard to use, especially during tense situations.
3. There is a need for smart charges which will help the current shortened battery life of the portables.
4. There is no existing training in place for the current radio system.
5. The current mics are not waterproof and are easily affected by rain.
6. There are many dead spots in the City of Richmond
7. Radios sent off for maintenance often come back with old parts on them with initial problem not corrected.
8. Dispatch channel is very crowded.

Future Requirements

1. Support a comprehensive training program for the new system.
2. Need to have encryption for SWAT and operations. Currently they loan encryption capable radios from DEA and DOJ for secure operations due to high scanner use by local criminals.
3. The capability to broadcast from the mic when the earpiece falls out.
4. A system that is easy to use.
5. Support the recognition of the 10-3 alert tone during an emergency.
6. Include cost for outside vendor supported maintenance.
7. A robust alarm system that is clearly documented.
8. The system must be able to grow to meet user needs.
9. Need more channels.

The draft of this record was sent to Sergeant Wang, Officer Loucas, and Officer Funk of the Richmond Police Department on October 2, 2008.

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East Bay Regional Communications System Authority
Needs Analysis
Final Group Agency Meeting Record

Organization/Agency	Rodeo Hercules Fire Dept
File Name:	Rodeo Hercules Fire Final Meeting Record.doc
Date of Meeting:	16 Sept 2008
Location of Meeting:	Contra Costa County Technical Services Building
Meeting Attendees:	Alan Biggi, Rodeo Hercules Battalion Chief
	Gary Boyles, Rodeo Hercules Chief
CTA Attendees:	Rob Burdeaux, Communications Engineer
	Walter Currier, Communications Engineer

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. The Rodeo-Hercules Fire Protection District is located on the shores of San Pablo Bay, 30 minutes north of San Francisco. The District provides fire protection, and emergency medical aid to the unincorporated area of Rodeo and the City of Hercules.

Present Situation

1. They contract with the County for dispatch and radio system service. They are happy with this relationship.

2. They dispatch to Mobile data, voice pagers and alpha-numeric pagers.

3. They maintain 800 MHz portable radios for interop in the trucks when responding into Richmond.

4. They use their mobile data computers often and desire to keep this capability.

Present Problems

1. The hospital in San Pablo has no coverage inside.

2. Batteries in the 800MHz radios are very poor. 20-30 minute use is the norm.

3. Dispatch unable to monitor the tactical channels.

4. The current batteries have a short battery life, 30 minutes in some cases.

5. Occasionally there is a need to talk with PD, but this capability is not available without dispatch intervention in most cases.

Future Requirements

1. They need more durable and water proof portables.

2. They need more talkgroups and want dispatch to have the ability to create talkgroups on the fly.

3. They need to maintain interoperability with rest of fire agencies in the state on VHF.

4. They need an indication on their radios of an emergency situation, so that if they weren't on the talkgroup and happen to change to a channel that is experiencing one, they won't talk over the emergency.

5. There is a need for training on truncked radio systems in order to help educate the users on trunked radio use and to remove the apprehension of trunked radios.

The draft of this record was sent to Chief Biggi and Chief Boyles on October 2, 2008.

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East Bay Regional Communications System Authority
Needs Analysis and Analysis of Proposed System Design
Final Group Agency Meeting Record

Organization/Agency	San Pablo Police Department
File Name:	San Pablo Police Department Final Meeting Record.doc
Date of Meeting:	September 16, 2008
Location of Meeting:	Contra Costa County Technical Services Building
Meeting Attendees:	Desi Bran, San Pablo Police Department Officer
	David Krastof, San Pablo Police Department Sergeant
	Robert Richer, San Pablo Police Department Officer
CTA Attendees:	Rob Burdeaux, Telecommunications Engineer
	Walter Currier, Telecommunications Engineer

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. San Pablo PD is located in the northwestern corner of Contra Costa County just north of the City of Richmond. They currently have about 57 sworn officers and 37 vehicles, 25 of which have MDC's.

Present Situation

1. They operate off Channel 4 of the Richmond 800MHz system and share the channel with Contra Costa College, Kensington, and El Cerrito PD. They are dispatched by the City of Richmond. The primary use of Channel 4 is for patrol officers and dispatch. They maintain a bank of radios for interoperability with outside agencies. Good interoperability, when it works.

2. Sometimes have to operate entire agency off of their Nextel radios, however during this time dispatch cannot monitor Nextel traffic.

3. Investigations and Surveillance use Nextel, mainly due to crowding, encryption and ease of use.

4. Scanners are used to monitor what other agencies are doing.

Present Problems

1. Most officers do not have adequate radio training and are not familiar enough with the radio to be able to change channels.

2. Poor coverage at the hospital and inside the Police Department building.

3. Only communication with Fire agencies and CHP is via dispatch.

4. System repeaters not well maintained leading to frequent down times. On several occasions a repeater has lost house power and switched over to generators. The generators run until they are out of fuel and the warnings are not acknowledged and the system is down until the generators can be refueled and the house power restored.

5. Batteries on their 800MHz portables are very poor and they do not have chargers in the vehicle.

6. Channel is so busy that they do not report all traffic stops, which presents and officer safety issue.

Future Requirements

1. Would like to be able to communicate with users in other frequency bands, VHF and UHF.

2. Need additional channels available for incidents and surveillance.
3. They need additional bandwidth for data.
4. Would like to access video with the mobile data computers.
5. Would like better coverage.
6. Need to have their own talk group for San Pablo PD.

The draft of this record was sent to Officer Bran, Sergeant Krastof, and Officer Richer of the San Pablo Police Department on October 2, 2008.

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East Bay Regional Communications System
Needs Analysis
Final Group Agency Meeting Record

Organization/Agency	San Ramon Police Department
File Name:	San Ramon PD Final Interview Record.doc
Date of Meeting:	17 Sept 2008
Location of Meeting:	Contra Costa County Technical Services Building
Meeting Attendees:	Mike Boehrer, Sergeant
	Mike Green, Detective
CTA Attendees:	Rob Burdeaux, Communications Engineer
	Walter Currier, Communications Engineer

The following points were conveyed to CTA during this interview:

Organization and Responsibilities

1. The San Ramon PD is located in southern Contra Costa County along Interstate 680 near the County border. They have approximately 56 sworn officers and 40 cars and trucks and 6 motorcycles.

Present Situation

1. They are dispatched and contracted by the Sheriff's office and operate on Channel 2 of the SO's VHF system (along with Martinez, Danville and Sheriff's Office in Central portion of the county). They utilize Motorola radios.

2. They mostly interoperate with Danville.

3. Radio channel is very busy between 6-9 AM and 3-6 PM.

4. They utilize the Sheriff's mobile data computers with Sprint air cards.

Present Problems

1. Hear occasional bleed over from Yuba County and the channels are occasionally full of static.

2. Unable to talk to adjoining city to the south; Dublin. Have to utilize Nextels to communicate with them. One command vehicle is equipped with 800 MHz, but this is not enough.

3. Coverage issues in Dori Valley, and poor in-building coverage.

4. Not enough channels.

5. Tactical channel not monitored by dispatch.

6. No interoperability with CHP, EBRP, and Fire and can only reach agencies not on Channel 2 of Sheriff's system by going through dispatch.

Future Requirements

1. Need more channels for interoperability.

2. Need to be able to be rapidly patched to other agencies systems, especially in support of special events and multi-jurisdictional emergencies .

3. Need dispatch monitored tactical channels.

4. Would like to have video to the vehicles.
5. Would like to be able to communicate with other agencies on their MDC's.
6. Would like encryption for operations.

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East Bay Regional Communications System Authority
Needs Analysis
Final Group Agency Meeting Record

Organization/Agency	San Ramon Valley Fire District
File Name:	San Ramon Valley Fire FINAL Meeting Record.doc
Date of Meeting:	17 Sept 2008
Location of Meeting:	Contra Costa County Technical Services Building
Meeting Attendees:	John Viera, San Ramon Valley Fire District (SRVFD) Battalion Chief
CTA Attendees:	Rob Burdeaux, Communications Engineer
	Walter Currier, Communications Engineer

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

1. The SRVFD has 180 sworn fireman and 10 stations that cover 155 square miles in the south western portion of Contra Costa County.

2. They have their own dispatch center in the Station 31 station in Danville that is also a PSAP.

Present Situation

1. They use a VHF system that has 2 repeated TAC channels (TAC22, TAC23) and a Dispatch Channel (South-located on Mt. Diablo). TAC23 has less coverage than TAC22. They have 4 additional direct channels for on-scene use.

2. They cover from Alamo to the County line and from San Ramon to Dublin in Alameda County and west to the County line to the south side of Mt. Diablo.

3. They have 800 MHZ mobile and portable radios in the station house and vehicles in the southern part of the County for interoperability with agencies in Alameda County.

4. All personnel are equipped with UHF portables for use on the fireground that are repeated through a pyramid vehicle repeater to the VHF dispatch / tactical channels back to dispatch. In responses where 800 MHz is used, the fireground is repeated over 800 MHz.

5. All vehicles are equipped with VHF and UHF mobile radios. In addition, the apparatuses that normally respond into Alameda County have 800 MHz radios.

6. They have 2 repeated channels for tactical use.

Present Problems

1. There is limited coverage in some of the areas that are blocked by hills, ridgelines or valleys.

Future Requirements

1. They are very happy with their current system. Any future system should have equal or better features.

2. Any future system must have at least one command (dispatch) channel and three additional tactical channels that can be monitored by dispatch.

3. If a new digital trunked system were put in county wide they would likely continue to use the 4 direct UHF fireground channels that they currently use.

4. Any future system would not replace the need to maintain VHF portable and mobile for interoperability and emergency response to areas outside Contra Costa County.

The draft of this record was sent to John Viera on October 2, 2008.

M:\Projects\Radio Projects\20175 EBRCSA (Alameda-Contra Costa, CA)\Phase A Needs Analysis\Project Files\Deliverables\Group Agency Meeting Records - FINAL\San Ramon Valley Fire FINAL Meeting Record.doc

East Bay Regional Communications System Authority
Needs Analysis
Final Group Agency Meeting Record

Organization/Agency	Walnut Creek Police Department
File Name:	Walnut Creek PD Final Meeting Record.doc
Date of Meeting:	17 Sept 2008
Location of Meeting:	Contra Costa County Technical Services Building
Meeting Attendees:	Shelly James, Sergeant
	Michael Hurlbut, Officer
CTA Attendees:	Rob Burdeaux, Communications Engineer
	Walter Currier, Communications Engineer

The following points were conveyed to CTA during this meeting:

Organization and Responsibilities

The Walnut Creek PD is located in central Contra Costa County. They have about 65 vehicles, 80 sworn officers, approximately 30 reserve officers, approximately 30 civilian personnel and a number of volunteers. (Approximately 150 portables, most of which are assigned to each person who has a need for a radio).

Present Situation

1. They are self dispatched and operate a UHF radio system that consists of six sites. They can interoperate with Martinez, Pleasant Hill and Concord.

2. They operate on the Sheriff's mobile data system with Sprint cards. They use them a lot and are happy with them.

Present Problems

1. Coverage issues in the hills. No coverage in the jail, parking garage, John Muir hospital, in the Valley East beyond Ygnacio Valley Road or beyond the tunnel.

2. Have to relay through dispatch to communicate with CHP, EMS, Fire and Sheriff.

Future Requirements

1. They need more coverage.

2. Need to be able to talk to the Sheriff, CHP, East Bay Regional Parks and CA State Parks.

3. Would like new system to be able to announce who and where the radio is when the emergency button is pressed.

The draft of this record was sent to Sergeant James and Officer Hurlbut on October 2, 2008.

Corrected draft was returned to CTA Communications on November 3, 2008 by Ricco Lorenzi.

Appendix B

Site Survey Records

Site Name	Site Type
ALAMEDA COUNTY FIRE	RF and MW

Survey Date 9/18/2008 **Surveyors** TRM

Observed Position (NAD83)
Latitude(N) Longitude(W)

POTS: ☐ Yes ☐ No

Telco T1's:

Has Fiber: ☐ Yes ☐ No

Site Access

Parking Adequate: ☑ Yes ☐ No

Fencing / Gate: ☑ Yes ☐ No **Type:** Site nice and clean

Fire Suppression: ☑ Yes ☐ No **Type:**

Smoke Alarm: ☑ Yes ☐ No

Emergency Lighting: ☑ Yes ☐ No

Comments:

Site Description

Compound room for additional shelter: No

Other Tower(s) / Comments: ☐ Yes ☑ No

Building Design Description

Manufacturer:
Model #:
Outside Diminsions:
Prefab./Built on Site: Prefab
Wall Construction: rock
Roof Construction:
Floor Composition: tile
Comments:

Outside Grounding System Description

Generator

Manufacturer:	Caterpillar	**Model #:**	SR4	**Phase:**	3
Capacity:	125	**KVA:**	156		

Transfer Switch Manufacturer:		**Model #:**	
Volts:	277/408	**Amps:**	260

Comments:

Fuel System

Fuel Type:	diesel	**# of Tanks:**	1
Tank Size (gallons):	350	**Comments:**	
In-Ground / Above Ground:	Above under Generator		

TOWER INFORMATION

Tower Height: 150
Manufacturer:
Model #:
ASR Registration:
Verticle Cable Ladder: ☑ Yes ☐ No
Tower Paint: ☑ Good ☐ Poor

Tower Type: self-supporting
# of Legs: 3

Lighting:

Climbing: ☑ Ladder ☐ Cable

Ground System Type:
Ground Sys. Condition: (Comments - Rate) ☐ Great ☑ Good ☐ Average ☐ Poor

Transmission Cable Ground

	Twr. Bottom	Building Entry	Near Antenna	Comments:
MW:				
MW:				
MW:				
Coax:				
Coax:				
Coax:				

Roof Mount Access:

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** **Volts:** 240/120 **Phase:**

Comments:

HVAC

Manufacturer: Marvair **Model #:** ComPac 1

Cooling Tons: **# of Units:** 2

Description: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

Grounding System

System Type: Halo

Description:

Surge Suppression Devices: 1

Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

UPS System

Manufacturer: Best Power **Model #:** Fortress 1425 14 and Ferrups FE Series 1

# of Units: 15 **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

Describe Floor Space:

Transmission Line Entry

Total Ports: 11 **# of Ports Used:** 11

Description / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

Additional Comments:

LAND MOBILE RADIO INFORMATION

Manufacturer: Motorola
Transmit Pwr. (watts):

Model: Quantars
ERP (watts):

Call Sign:
Power Source:

Transmit (MHz)
Receive (MHz):

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: TX/RX System
# of Channels: 10

Multicoupler Manufacturer:
Model:

Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer: Motorola
Transmit Pwr. (watts):

Model: MSF5000
ERP (watts):

Call Sign:
Power Source:

Transmit (MHz)
Receive (MHz):

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:

Multicoupler Manufacturer:
Model:

Twr. Top Amp: ☐ Yes ☐ No
Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer: Motorola
Transmit Pwr. (watts):

Model: Nucleus Paging Base Station
ERP (watts):

Call Sign:
Power Source:

Transmit (MHz)
Receive (MHz):

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:

Multicoupler Manufacturer:
Model:

Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer: Motorola
Transmit Pwr. (watts):

Model: SPECTRA
ERP (watts):

Call Sign:
Power Source:

Transmit (MHz)
Receive (MHz):

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:

Multicoupler Manufacturer:
Model:

Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer: Zetron
Model: 2200
Call Sign:
Transmit (MHz)
TX Antenna Height:

Transmit Pwr. (watts):
ERP (watts):
Power Source:
Receive (MHz):

RX Antenna Height:

Combiner Manufacturer:
Multicoupler Manufacturer:
Twr. Top Amp: ☐ Yes ☑ No

# of Channels:
Model:
Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer: Motorola
Model: ASTRO
Call Sign:
Transmit (MHz)
TX Antenna Height:

Transmit Pwr. (watts):
ERP (watts):
Power Source:
Receive (MHz):

RX Antenna Height:

Combiner Manufacturer:
Multicoupler Manufacturer:
Twr. Top Amp: ☐ Yes ☑ No

# of Channels:
Model:
Manuf:

Radio Condition

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:
Manufacturer: Alcatel
Model #: MDR4000
MW Owner:
Analog: ☐ Yes ☐ No
Digital, DS1 Capacity Digital
Frequency Band: 4 GHz
Main Ant. Height:
Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: Alcatel **Model #:** DMX 3003N

Multiplexer Type: **Capacity:**

Chan. Band Manuf. **Model #:**

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: Harris

Model #: Constellation

MW Owner:

Analog: ☐ Yes ☐ No

Digital, DS1 Capacity

Frequency Band: 6 GHz

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf. **Model #:**

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

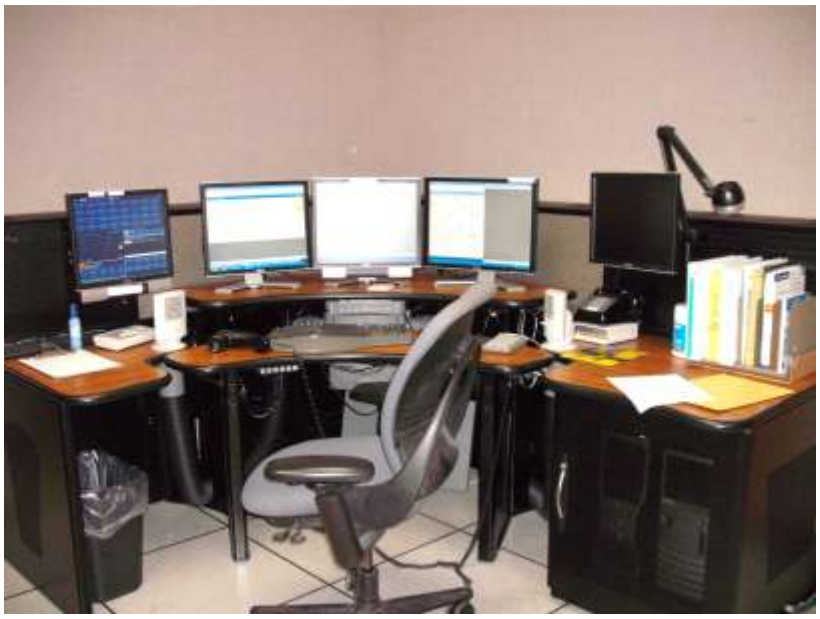
FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor



Site Name	Site Type
ALAMEDA COUNTY SHERIFF	MW

Survey Date	Surveyors	Observed Position (NAD83)	
9/15/2008	TRM	Latitude(N)	Longitude(W)

POTS: ☐ Yes ☑ No

Telco T1's: AT&T

Has Fiber: ☐ Yes ☑ No

Site Access

Parking Adequate:	☑ Yes ☐ No		
Fencing / Gate:	☑ Yes ☐ No	**Type:**	
Fire Suppression:	☐ Yes ☑ No	**Type:**	
Smoke Alarm:	☑ Yes ☐ No		
Emergency Lighting:	☑ Yes ☐ No		

Comments:

Site Description

Compound room for additional shelter:

Other Tower(s) / Comments: ☐ Yes ☑ No

Building Design Description

CONFIDENTIAL

Manufacturer:
Model #:
Outside Diminsions:
Prefab./Built on Site:
Wall Construction: concrete blocks
Roof Construction:
Floor Composition: tile
Comments:

Outside Grounding System Description

none

Generator

Manufacturer: Power Tech **Model #:** PTC-150 **Phase:** 3
Capacity: 150 **KVA:** 188

Transfer Switch Manufacturer: IEM **Model #:**
Volts: 208Y/120 - 60Hz **Amps:** 500
Comments:

Fuel System

Fuel Type: Diesel **# of Tanks:**
Tank Size (gallons): **Comments:**
In-Ground / Above Ground: Above Ground under Generator

TOWER INFORMATION

Tower Height: 80
Manufacturer:
Model #:
ASR Registration:
Verticle Cable Ladder: ☑ Yes ☐ No
Tower Paint: ☑ Good ☐ Poor

Tower Type: self-supporting
# of Legs: 3

Lighting: no

Climbing: ☐ Ladder ☑ Cable

Ground System Type:
Ground Sys. Condition: (Comments - Rate) ☐ Great ☐ Good ☐ Average ☑ Poor

Transmission Cable Ground

	Twr. Bottom	Building Entry	Near Antenna	Comments:
MW:				
MW:				
MW:				
Coax:				
Coax:				
Coax:				

Roof Mount Access:

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** **Volts:** **Phase:**

Comments: Commerical Power from PG&E

HVAC

Manufacturer: **Model #:**

Cooling Tons: **# of Units:**

Description: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

Building Units

Grounding System

System Type:

Description:

Surge Suppression Devices: 1

Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

Some of surge suppression is in the equipment.

UPS System

Manufacturer: Symmetra LX **Model #:**

# of Units: 1 **kVA:** 16 **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Alarm

Manufacturer: Far Scan and Badger **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

Far Scan - digital microwave
Badger analog

Describe Floor Space:

Transmission Line Entry

Total Ports: 2 **# of Ports Used:** 2

Description / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

Additional Comments:

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: Harris/Farinon Division — They have 2 units

Model #: FAS-6000E

MW Owner: Alameda County

Analog: ☑ Yes ☐ No

Digital, DS1 Capacity

Frequency Band:

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: Western Multiplex **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf. **Model #:**

Alarm Sys. Manuf.: Badger **Model #:** 481

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

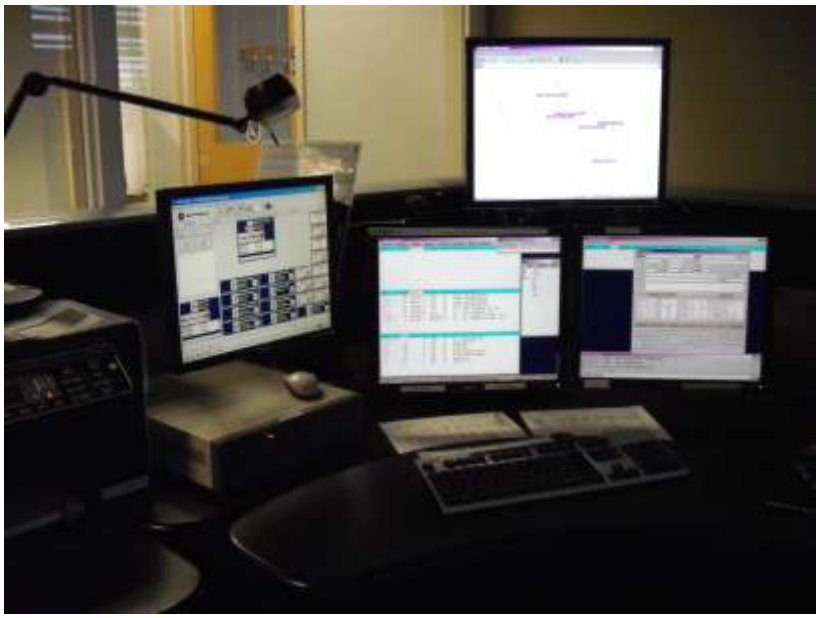
FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor



Site Name	Site Type
CITY OF ALAMEDA PD DISPATCH	**RF and MW**

Survey Date	Surveyors	Observed Position (NAD83)	
9/17/2008	TRM	Latitude(N)	Longitude(W)

POTS: ☐ Yes ☐ No

Telco T1's:

Has Fiber: ☐ Yes ☐ No

Site Access

Parking Adequate:	☑ Yes ☐ No		
Fencing / Gate:	☑ Yes ☐ No	**Type:**	
Fire Suppression:	☑ Yes ☐ No	**Type:**	
Smoke Alarm:	☑ Yes ☐ No		
Emergency Lighting:	☑ Yes ☐ No		

Comments:

Site Description

Compound room for additional shelter:

Other Tower(s) / Comments: ☐ Yes ☑ No

Building Design Description

Manufacturer:
Model #:
Outside Diminsions:
Prefab./Built on Site: built on site
Wall Construction: blocks
Roof Construction:
Floor Composition: tile
Comments: it is the police department building.

Outside Grounding System Description

Generator

Manufacturer: MTV **Model #:** Detroit Diesel **Phase:** 3
Capacity: 125 **KVA:** 156

Transfer Switch Manufacturer: **Model #:**
Volts: **Amps:**
Comments:

Fuel System

Fuel Type: diesel **# of Tanks:** 1
Tank Size (gallons): 5000 **Comments:**
In-Ground / Above Ground: In-Ground

TOWER INFORMATION

Tower Height: 177 top of building
Manufacturer:
Model #:
ASR Registration:
Verticle Cable Ladder: ☐ Yes ☐ No
Tower Paint: ☐ Good ☐ Poor

Tower Type: self-supporting
# of Legs: 3

Lighting:

Climbing: ☐ Ladder ☐ Cable

Ground System Type:
Ground Sys. Condition: (Comments - Rate) ☐ Great ☐ Good ☐ Average ☑ Poor

Transmission Cable Ground

	Twr. Bottom	Building Entry	Near Antenna	Comments:
MW:				
MW:				
MW:				
Coax:				
Coax:				
Coax:				

Roof Mount Access: yes

Additional Comments: antennas and dishes or mounted on poles on top of building.

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** **Volts:** **Phase:**

Comments:

HVAC

Manufacturer: **Model #:**

Cooling Tons: **# of Units:**

Description: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

Building Units

Grounding System

System Type:

Description:

Surge Suppression Devices: 1

Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

UPS System

Manufacturer: Best Power **Model #:** Ferrups FE Series

# of Units: 2 **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

Describe Floor Space:

Transmission Line Entry

Total Ports: 2 **# of Ports Used:** 2

Description / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

Two cables run thru the wall.

Additional Comments:

LAND MOBILE RADIO INFORMATION

Manufacturer:

Model:

Call Sign:

Transmit (MHz)

TX Antenna Height:

Transmit Pwr. (watts):

ERP (watts):

Power Source:

Receive (MHz):

RX Antenna Height:

Combiner Manufacturer:

Multicoupler Manufacturer:

Twr. Top Amp: ☐ Yes ☐ No

# of Channels:

Model:

Manuf:

Radio Condition

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: Harris Farinon Division

Model #: FAS-6000E

2 Units

MW Owner: Alameda County

Analog: ☑ Yes ☐ No

Digital, DS1 Capacity

Frequency Band: 6 GHZ

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: Western Multiplex

Multiplexer Type:

Chan. Band Manuf.

Alarm Sys. Manuf.: Badger

Alarm Sys. Type:

Dehydrator: ☐ Yes ☑ No

Router / Switch Manufacturer:

Model #:

Capacity:

Model #:

Model #: 481

Model #:

MW Condition / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type: Dry Cell

Amp/Hr. Rating: **Volts:**

Condition: Liberty 2000 batteries

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: Harris

Model #: TR5000

1 Unit

MW Owner:

Analog: ☐ Yes ☐ No

Digital, DS1 Capacity Digital

Frequency Band: 6 GHz

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: Harris **Model #:** TR5000

Multiplexer Type: **Capacity:**

Chan. Band Manuf. **Model #:**

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type: Dry Cell

Amp/Hr. Rating: **Volts:**

Condition: Absolyte 24 batteries

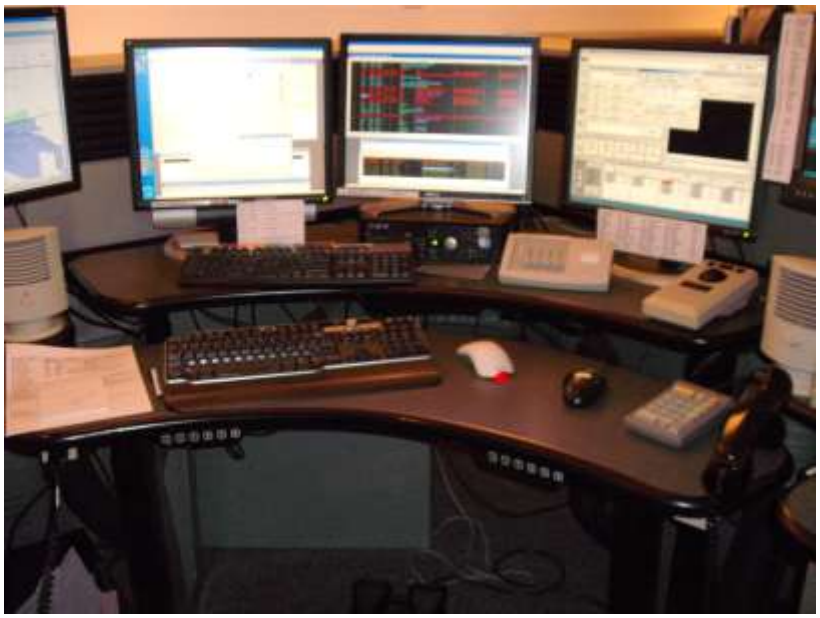
FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor



Site Name **Site Type**

CITY OF PLEASANTON DISPATCH

Survey Date	**Surveyors**	**Observed Position (NAD83)**	
9/17/2008	TRM	Latitude(N)	Longitude(W)

POTS: ☐ Yes ☐ No

Telco T1's:

Has Fiber: ☐ Yes ☐ No

Site Access

Parking Adequate: ☑ Yes ☐ No

Fencing / Gate: ☑ Yes ☐ No **Type:**

Fire Suppression: ☐ Yes ☐ No **Type:**

Smoke Alarm: ☑ Yes ☐ No

Emergency Lighting: ☐ Yes ☐ No

Comments:

Site Description

Compound room for additional shelter:

Other Tower(s) / Comments: ☐ Yes ☑ No

Building Design Description

Manufacturer:
Model #:
Outside Diminsions:
Prefab./Built on Site:
Wall Construction: sheet rock
Roof Construction:
Floor Composition: tile
Comments: police department building.

Outside Grounding System Description

Generator

Manufacturer: Onan **Model #:** 250 **Phase:**
Capacity: 250 **KVA:**

Transfer Switch Manufacturer: **Model #:**
Volts: **Amps:**
Comments:

Fuel System

Fuel Type: diesel **# of Tanks:** 1
Tank Size (gallons): 725 **Comments:**
In-Ground / Above Ground: In-Ground

TOWER INFORMATION

Tower Height: 70
Manufacturer:
Model #:
ASR Registration:
Verticle Cable Ladder: ☐ Yes ☐ No
Tower Paint: ☐ Good ☐ Poor

Tower Type: self-supporting
# of Legs: 3

Lighting:

Climbing: ☐ Ladder ☐ Cable

Ground System Type:
Ground Sys. Condition: (Comments - Rate) ☐ Great ☐ Good ☐ Average ☑ Poor

Transmission Cable Ground

	Twr. Bottom	Building Entry	Near Antenna	Comments:
MW:				
MW:				
MW:				
Coax:				
Coax:				
Coax:				

Roof Mount Access:

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 100 **Volts:** 208/120 **Phase:** 3

Comments:

HVAC

Manufacturer: **Model #:**

Cooling Tons: **# of Units:**

Description: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

Building Unit

Grounding System

System Type:

Description:

Surge Suppression Devices:

Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

UPS System

Manufacturer: **Model #:**

# of Units: **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Alarm

Manufacturer: Badger **Model #:** 481

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

Describe Floor Space:

Transmission Line Entry

Total Ports: 10 **# of Ports Used:** 2

Description / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

PVC pipes exiting room

Additional Comments:

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: Motorola

Model #: Starpoint

MW Owner:

Analog: ☑ Yes ☐ No

Digital, DS1 Capacity

Frequency Band:

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: Western Multiplex **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf. **Model #:**

Alarm Sys. Manuf.: Badger **Model #:** 481

Alarm Sys. Type:

Dehydrator: ☐ Yes ☑ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

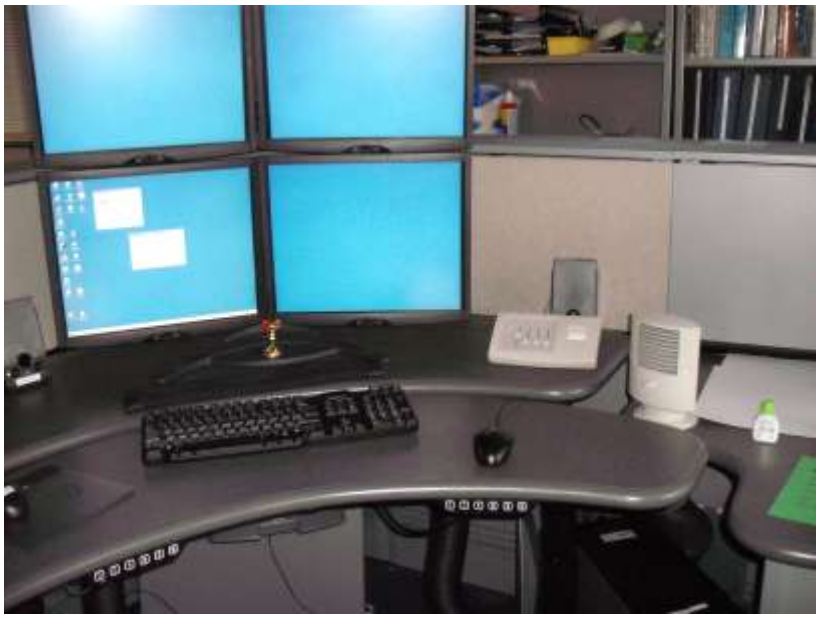
FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor



Site Name **Site Type**

CITY OF SAN LEANDRO PD DISPATCH

Survey Date	**Surveyors**	**Observed Position (NAD83)**	
9/17/2008	TRM	Latitude(N)	Longitude(W)

POTS: ☐ Yes ☐ No

Telco T1's:

Has Fiber: ☐ Yes ☐ No

Site Access

Parking Adequate: ☑ Yes ☐ No

Fencing / Gate: ☑ Yes ☐ No **Type:**

Fire Suppression: ☐ Yes ☐ No **Type:**

Smoke Alarm: ☐ Yes ☐ No

Emergency Lighting: ☐ Yes ☐ No

Comments:

Site Description

Compound room for additional shelter:

Other Tower(s) / Comments: ☐ Yes ☑ No

Building Design Description

Manufacturer:
Model #:
Outside Diminsions:
Prefab./Built on Site: Built on Site
Wall Construction: blocks
Roof Construction:
Floor Composition: tile
Comments: It is the Police Department building

Outside Grounding System Description

Generator

Manufacturer: KATOLIGHT **Model #:** **Phase:** 3
Capacity: 500 **KVA:** 625

Transfer Switch Manufacturer: **Model #:**
Volts: **Amps:**
Comments:

Fuel System

Fuel Type: diesel **# of Tanks:**
Tank Size (gallons): **Comments:**
In-Ground / Above Ground: Above under Generator

TOWER INFORMATION

Tower Height: 75 on top of police department building
Manufacturer:
Model #:
ASR Registration:
Verticle Cable Ladder: ☐ Yes ☐ No
Tower Paint: ☐ Good ☐ Poor

Tower Type:
# of Legs:

Lighting:

Climbing: ☐ Ladder ☐ Cable

Ground System Type:
Ground Sys. Condition: (Comments - Rate) ☐ Great ☐ Good ☑ Average ☐ Poor

Transmission Cable Ground

	Twr. Bottom	Building Entry	Near Antenna	Comments:
MW:				
MW:				
MW:				
Coax:				
Coax:				
Coax:				

Roof Mount Access:

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** **Volts:** **Phase:**

Comments:

HVAC

Manufacturer: **Model #:**

Cooling Tons: **# of Units:**

Description: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

building units

Grounding System

System Type:

Description:

Surge Suppression Devices: 1

Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

UPS System

Manufacturer: Best Power **Model #:** Ferrups FE Series

# of Units: 1 **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Describe Floor Space:

Transmission Line Entry

Total Ports: **# of Ports Used:**

Description / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Additional Comments:

LAND MOBILE RADIO INFORMATION

Manufacturer: **Transmit Pwr. (watts):**

Model: **ERP (watts):**

Call Sign: **Power Source:**

Transmit (MHz) **Receive (MHz):**

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: **# of Channels:**

Multicoupler Manufacturer: **Model:**

Twr. Top Amp: ☐ Yes ☐ No **Manuf:**

Radio Condition

Site Name	Site Type
EAST BAY REGIONAL PARK DISTRICT DISPATCH	

Survey Date	Surveyors	Observed Position (NAD83)	
9/17/2008	TRM	Latitude(N)	Longitude(W)

POTS: ☐ Yes ☐ No

Telco T1's:

Has Fiber: ☐ Yes ☐ No

Site Access

Parking Adequate: ☑ Yes ☐ No

Fencing / Gate: ☐ Yes ☑ No **Type:**

Fire Suppression: ☑ Yes ☐ No **Type:** Halon Extinguisher

Smoke Alarm: ☑ Yes ☐ No

Emergency Lighting: ☐ Yes ☐ No

Comments:

Site Description

Compound room for additional shelter:

Other Tower(s) / Comments: ☐ Yes ☑ No

Building Design Description

Manufacturer:
Model #:
Outside Diminsions:
Prefab./Built on Site: Built on Site
Wall Construction:
Roof Construction:
Floor Composition: tile
Comments: It is the East Bay Regional PD Dispatch building.

Outside Grounding System Description

Generator

Manufacturer: Generac **Model #:** 2000 Series **Phase:** 3
Capacity: **KVA:**

Transfer Switch Manufacturer: Generac Power System **Model #:**
Volts: 208Y/120 **Amps:**
Comments:

Fuel System

Fuel Type: diesel **# of Tanks:** 1
Tank Size (gallons): **Comments:**
In-Ground / Above Ground: Above under generator

TOWER INFORMATION

Tower Height: 100
Manufacturer:
Model #:
ASR Registration:
Verticle Cable Ladder: ☐ Yes ☐ No
Tower Paint: ☑ Good ☐ Poor

Tower Type: self-supporting
# of Legs: 4

Lighting: no

Climbing: ☑ Ladder ☐ Cable

Ground System Type:
Ground Sys. Condition: (Comments - Rate) ☐ Great ☐ Good ☑ Average ☐ Poor

Transmission Cable Ground

	Twr. Bottom	Building Entry	Near Antenna	Comments:
MW:				
MW:				
MW:				
Coax:				
Coax:				
Coax:				

Roof Mount Access:

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 1000 **Volts:** 208/120 **Phase:** 3

Comments:

HVAC

Manufacturer: Frigidare **Model #:**

Cooling Tons: **# of Units:** 2

Description: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

window units

Grounding System

System Type:

Description:

Surge Suppression Devices: 2

Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

UPS System

Manufacturer: Fujitsu **Model #:** F9600c

# of Units: 2 **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Describe Floor Space:

Transmission Line Entry

Total Ports: 2 **# of Ports Used:** 2

Description / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

waveguides.

Additional Comments: 3 Rf cable are going thru wall to outside.

LAND MOBILE RADIO INFORMATION

Manufacturer: Motorola

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 44.96, 44.76, and 44.64MHz

Receive (MHz):

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☑ No

Manuf:

Radio Condition

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: Harris

Model #: Constellation

2 units

MW Owner:

Analog: ☐ Yes ☐ No

Digital, DS1 Capacity

Frequency Band: 6 GHz

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.:

Model #:

Multiplexer Type:

Capacity:

Chan. Band Manuf.

Model #:

Alarm Sys. Manuf.:

Model #:

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer:

Model #:

MW Condition / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Site Name	Site Type
FREMONT PD DISPATCH	RF and MW

Survey Date	Surveyors	Observed Position (NAD83)	
9/16/2008	TRM	Latitude(N)	Longitude(W)

POTS: ☐ Yes ☐ No

Telco T1's: Verizon

Has Fiber: ☑ Yes ☐ No

Site Access

Parking Adequate: ☑ Yes ☐ No

Fencing / Gate: ☐ Yes ☐ No **Type:**

Fire Suppression: ☑ Yes ☐ No **Type:** Haylon

Smoke Alarm: ☑ Yes ☐ No

Emergency Lighting: ☐ Yes ☐ No

Comments:

Site Description

Compound room for additional shelter:

Other Tower(s) / Comments: ☐ Yes ☐ No

Building Design Description

Manufacturer:
Model #:
Outside Diminsions:
Prefab./Built on Site: Built on Site
Wall Construction:
Roof Construction:
Floor Composition: tile
Comments: It is the Police Department building.

Outside Grounding System Description

Generator

Manufacturer: **Model #:** **Phase:**

Capacity: **KVA:**

Transfer Switch Manufacturer: **Model #:**

Volts: **Amps:**

Comments:

Fuel System

Fuel Type: **# of Tanks:**

Tank Size (gallons): **Comments:**

In-Ground / Above Ground:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** **Volts:** **Phase:**

Comments: PG&E electrical provider

HVAC

Manufacturer: **Model #:**

Cooling Tons: **# of Units:**

Description: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

Building Units

Grounding System

System Type: linear

Description:

Surge Suppression Devices: 1

Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

UPS System

Manufacturer: APC **Model #:** Smartups 3000

# of Units: 2 **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

Describe Floor Space:

Transmission Line Entry

Total Ports: **# of Ports Used:**

Description / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Additional Comments:

LAND MOBILE RADIO INFORMATION

Manufacturer: Motorola **Transmit Pwr. (watts):**

Model: Quantars **ERP (watts):**

Call Sign: **Power Source:**

Transmit (MHz) **Receive (MHz):**

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: 4 Units **# of Channels:** 21

Multicoupler Manufacturer: **Model:**

Twr. Top Amp: ☐ Yes ☑ No **Manuf:**

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer: Motorola
Transmit Pwr. (watts):
Model:
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz)
Receive (MHz):
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer: Motorola
Transmit Pwr. (watts):
Model: MSF5000
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz)
Receive (MHz):
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:
Manufacturer: Harris Farinon Division
Model #: FAS-6000E
1 Unit
MW Owner:
Analog: ☑ Yes ☐ No
Digital, DS1 Capacity
Frequency Band: 6 GHz
Main Ant. Height:
Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: Western Multiplex **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf. **Model #:**

Alarm Sys. Manuf.: Badger **Model #:** 481

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Site Name	Site Type
HAYWARD PD DISPATCH	

Survey Date	Surveyors	Observed Position (NAD83)	
9/16/2008	TRM	Latitude(N)	Longitude(W)

POTS: ☐ Yes ☐ No

Telco T1's:

Has Fiber: ☐ Yes ☐ No

Site Access

Parking Adequate:	☑ Yes ☐ No		
Fencing / Gate:	☑ Yes ☐ No	**Type:**	
Fire Suppression:	☑ Yes ☐ No	**Type:**	
Smoke Alarm:	☑ Yes ☐ No		
Emergency Lighting:	☑ Yes ☐ No		

Comments:

Site Description

Compound room for additional shelter:

Other Tower(s) / Comments: ☐ Yes ☑ No

Building Design Description

Manufacturer:
Model #:
Outside Diminsions:
Prefab./Built on Site: Built on Site
Wall Construction: blocks
Roof Construction:
Floor Composition: tile
Comments: Police Department building.

Outside Grounding System Description

Generator

Manufacturer: Cummin **Model #:** **Phase:** 3
Capacity: 350 **KVA:**

Transfer Switch Manufacturer: **Model #:**
Volts: 208Y/120 **Amps:**
Comments:

Fuel System

Fuel Type: diesel **# of Tanks:** 2
Tank Size (gallons): 6000 **Comments:**
In-Ground / Above Ground: In-Ground

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** **Volts:** **Phase:**
Comments:

HVAC

Manufacturer: **Model #:**
Cooling Tons: **# of Units:**
Description: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor
Building HVAC

Grounding System

System Type: halo
Description:

Surge Suppression Devices: 1
Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

UPS System

Manufacturer: Best Power **Model #:**

# of Units: 2 **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

Describe Floor Space:

Transmission Line Entry

Total Ports: 2 **# of Ports Used:** 2

Description / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

Additional Comments:

LAND MOBILE RADIO INFORMATION

Manufacturer: Tait **Transmit Pwr. (watts):**

Model: TB-8100 **ERP (watts):**

Call Sign: **Power Source:**

Transmit (MHz) **Receive (MHz):**

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: **# of Channels:** 4

Multicoupler Manufacturer: **Model:**

Twr. Top Amp: ☐ Yes ☑ No **Manuf:**

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer: Tait
Transmit Pwr. (watts):
Model: QS2 Simulcast Site Processor
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz)
Receive (MHz):
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer: Motorola
Transmit Pwr. (watts):
Model: Quantar
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz)
Receive (MHz):
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: TX/RX System
# of Channels: 1
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:
Manufacturer: Alcatel
Model #: MDR 8000
MW Owner:
Analog: ☐ Yes ☐ No
Digital, DS1 Capacity Digital
Frequency Band:
Main Ant. Height:
Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: Adtran **Model #:** MX2800

Multiplexer Type: M13 **Capacity:**

Chan. Band Manuf. **Model #:**

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Site Name	Site Type
NEWARK PD DISPATCH	

Survey Date	Surveyors	Observed Position (NAD83)	
9/16/2008	TRM	Latitude(N)	Longitude(W)

POTS: ☐ Yes ☐ No

Telco T1's:

Has Fiber: ☐ Yes ☐ No

Site Access

Parking Adequate: ☑ Yes ☐ No

Fencing / Gate: ☑ Yes ☐ No **Type:**

Fire Suppression: ☐ Yes ☑ No **Type:**

Smoke Alarm: ☑ Yes ☐ No

Emergency Lighting: ☑ Yes ☐ No

Comments:

Site Description

Compound room for additional shelter:

Other Tower(s) / Comments: ☐ Yes ☐ No

Building Design Description

Manufacturer:

Model #:

Outside Diminsions:

Prefab./Built on Site:

Wall Construction:

Roof Construction:

Floor Composition:

Comments:

Outside Grounding System Description

Generator

Manufacturer: **Model #:** **Phase:**

Capacity: **KVA:**

Transfer Switch Manufacturer: **Model #:**

Volts: **Amps:**

Comments:

Fuel System

Fuel Type: **# of Tanks:**

Tank Size (gallons): **Comments:**

In-Ground / Above Ground:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** **Volts:** **Phase:**

Comments:

HVAC

Manufacturer: **Model #:**

Cooling Tons: **# of Units:**

Description: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

Building Units

Grounding System

System Type:

Description:

Surge Suppression Devices:

Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

UPS System

Manufacturer: **Model #:**

# of Units: **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Describe Floor Space:

Transmission Line Entry

Total Ports: 2 **# of Ports Used:** 2

Description / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

Microwave waveguides

Additional Comments:

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: Harris Farinon Division

Model #: FAS-6000E 2 Units

MW Owner:

Analog: ☑ Yes ☐ No

Digital, DS1 Capacity

Frequency Band: 6 GHz

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: Western Multiplex **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf. **Model #:**

Alarm Sys. Manuf.: Badger **Model #:** 481

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

DC Charger Volts: **Amps:**

Condition:

Type: Wet Cell

Amp/Hr. Rating: **Volts:**

Condition: 12 batteries

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition (Rate) ☐ Great ☐ Good ☐ Average ☐ Poor
/ Comments:

Site Name	Site Type
SAN LEANDRO HILLS SITE	RF and MW

Survey Date	Surveyors	Observed Position (NAD83)	
9/16/2008	TRM	Latitude(N)	Longitude(W)

POTS: ☐ Yes ☐ No

Telco T1's: County Line AT&T

Has Fiber: ☐ Yes ☑ No

Site Access

Parking Adequate: ☑ Yes ☐ No

Fencing / Gate: ☑ Yes ☐ No **Type:**

Fire Suppression: ☐ Yes ☑ No **Type:**

Smoke Alarm: ☐ Yes ☑ No

Emergency Lighting: ☑ Yes ☐ No

Comments:

Site Description

Compound room for additional shelter:

Other Tower(s) / Comments: ☑ Yes ☐ No

Building Design Description

CONFIDENTIAL

Manufacturer:
Model #:
Outside Diminsions: 21' X 22'
Prefab./Built on Site: Built on site
Wall Construction: blocks
Roof Construction:
Floor Composition: tile
Comments:

Outside Grounding System Description

none

Generator

Manufacturer: Koher **Model #:** 125 **Phase:** 3
Capacity: 125 **KVA:**

Transfer Switch Manufacturer: IEM **Model #:**
Volts: 208Y/120 **Amps:** 400
Comments:

Fuel System

Fuel Type: diesel **# of Tanks:** 1
Tank Size (gallons): 500 **Comments:**
In-Ground / Above Ground: Above ground

TOWER INFORMATION

Tower Height: 40
Manufacturer:
Model #:
ASR Registration:
Verticle Cable Ladder: ☑ Yes ☐ No
Tower Paint: ☑ Good ☐ Poor

Tower Type: self-supporting
# of Legs: 4

Lighting: no

Climbing: ☑ Ladder ☐ Cable

Ground System Type:
Ground Sys. Condition: (Comments - Rate) ☐ Great ☐ Good ☐ Average ☑ Poor

Transmission Cable Ground

	Twr. Bottom	Building Entry	Near Antenna	Comments:
MW:				
MW:				
MW:				
Coax:				
Coax:				
Coax:				

Roof Mount Access:

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 400 **Volts:** 208Y/120 **Phase:** 3

Comments: The new equipment room.

HVAC

Manufacturer: **Model #:**

Cooling Tons: **# of Units:**

Description: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

Grounding System

System Type: linear

Description:

Surge Suppression Devices:

Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

UPS System

Manufacturer: Absolye **Model #:**

# of Units: 24 **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

Go back to Badger at County Sheriff

Describe Floor Space:

Transmission Line Entry

Total Ports: 16 **# of Ports Used:** 16

Description / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

Additional Comments:

LAND MOBILE RADIO INFORMATION

Manufacturer: Motorola
Model: GTR 8000
Call Sign:
Transmit (MHz)
TX Antenna Height:
RX Antenna Height:
Transmit Pwr. (watts):
ERP (watts):
Power Source:
Receive (MHz):
Combiner Manufacturer: TX/RX System
Multicoupler Manufacturer:
Twr. Top Amp: ☐ Yes ☑ No
# of Channels: 10
Model:
Manuf:

Radio Condition

This is the new equipment.

LAND MOBILE RADIO INFORMATION

Manufacturer: Motorola
Model: Quantars
Call Sign:
Transmit (MHz)
TX Antenna Height:
RX Antenna Height:
Transmit Pwr. (watts):
ERP (watts):
Power Source:
Receive (MHz):
Combiner Manufacturer:
Multicoupler Manufacturer:
Twr. Top Amp: ☐ Yes ☑ No
# of Channels: 11
Model:
Manuf:

Radio Condition

This is the old equipment.

LAND MOBILE RADIO INFORMATION

Manufacturer: Motorola
Transmit Pwr. (watts):

Model: Astro Tac-9600 voters
ERP (watts):

Call Sign:
Power Source:

Transmit (MHz)
Receive (MHz):

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels: 10

Multicoupler Manufacturer:
Model:

Twr. Top Amp: ☐ Yes ☐ No
Manuf:

Radio Condition

This new equipment.

LAND MOBILE RADIO INFORMATION

Manufacturer: Motorola
Transmit Pwr. (watts):

Model: GCP 8000
ERP (watts):

Call Sign:
Power Source:

Transmit (MHz)
Receive (MHz):

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:

Multicoupler Manufacturer:
Model:

Twr. Top Amp: ☐ Yes ☐ No
Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer: Motorola

Model: MSF-5000

Call Sign:

Transmit (MHz)

TX Antenna Height:

Transmit Pwr. (watts):

ERP (watts):

Power Source:

Receive (MHz):

RX Antenna Height:

Combiner Manufacturer:

# of Channels: 9

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☑ No

Manuf:

Radio Condition

This is the old equipment.

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: Harris/Farinon Division

Model #: TR5000

They have 4 units.

MW Owner:

Analog: ☐ Yes ☐ No

Digital, DS1 Capacity

Frequency Band: 11.2 GHz

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: Harris

Model #:

Multiplexer Type: Sonet

Capacity: OC3

Chan. Band Manuf.

Model #:

Alarm Sys. Manuf.: Far Scan -Digital Microwave

Model #:

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer:

Model #:

MW Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

DC Charger Volts:

Amps:

Condition:

Type: Dry Cell

Amp/Hr. Rating: **Volts:**

Condition: 24 Batteries

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition (Rate) ☐ Great ☐ Good ☐ Average ☐ Poor
/ Comments:

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: Harris/Farinon Division — 2 Units

Model #: FAS-6000E

MW Owner: Alameda County

Analog: ☑ Yes ☐ No

Digital, DS1 Capacity

Frequency Band: 6 GHz

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: Western Multiplex **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf. **Model #:**

Alarm Sys. Manuf.: Badger **Model #:** 481

Alarm Sys. Type:

Dehydrator: ☐ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: Harris Farinon Division

Model #: DVM11 — 2 Units

MW Owner:

Analog: ☐ Yes ☐ No

Digital, DS1 Capacity Digital

Frequency Band: 11.2 GHz

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf. **Model #:**

Alarm Sys. Manuf.: Harris Farinon **Model #:** Versa T1lity

Alarm Sys. Type:

Dehydrator: ☐ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: Harris Farinon

Model #: DVM18/45 — 2 Units

MW Owner:

Analog: ☐ Yes ☐ No

Digital, DS1 Capacity Digital

Frequency Band: 18 GHz

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf. **Model #:**

Alarm Sys. Manuf.: Harris Farinon **Model #:** Versa t1lity

Alarm Sys. Type:

Dehydrator: ☐ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Site Name	Site Type
SUNOL SITE	RF and MW

Survey Date	Surveyors	Observed Position (NAD83)	
9/16/2008	TRM	Latitude(N)	Longitude(W)

POTS: ☐ Yes ☐ No

Telco T1's:

Has Fiber: ☐ Yes ☐ No

Site Access

Parking Adequate: ☑ Yes ☐ No

Fencing / Gate: ☑ Yes ☐ No **Type:**

Fire Suppression: ☐ Yes ☐ No **Type:**

Smoke Alarm: ☐ Yes ☐ No

Emergency Lighting: ☐ Yes ☐ No

Comments:

Site Description

Compound room for additional shelter:

Other Tower(s) / Comments: ☑ Yes ☐ No

There were 2 other shelters and 3 towers.

Building Design Description

CONFIDENTIAL

Manufacturer:
Model #:
Outside Diminsions:
Prefab./Built on Site: Prefab
Wall Construction: metal
Roof Construction: metal
Floor Composition: wood and tile
Comments:

Outside Grounding System Description

none

Generator

Manufacturer: **Model #:** **Phase:**

Capacity: **KVA:**

Transfer Switch Manufacturer: **Model #:**

Volts: **Amps:**

Comments: There was no generator

Fuel System

Fuel Type: **# of Tanks:**

Tank Size (gallons): **Comments:**

In-Ground / Above Ground:

TOWER INFORMATION

Tower Height: 160

Manufacturer:

Model #:

ASR Registration:

Verticle Cable Ladder: ☑ Yes ☐ No

Tower Paint: ☑ Good ☐ Poor

Tower Type: self-supporting

# of Legs: 3

Lighting:

Climbing: ☑ Ladder ☐ Cable

Ground System Type:

Ground Sys. Condition: (Comments - Rate) ☐ Great ☐ Good ☐ Average ☐ Poor

Transmission Cable Ground

	Twr. Bottom	Building Entry	Near Antenna	Comments:
MW:				
MW:				
MW:				
Coax:				
Coax:				
Coax:				

Roof Mount Access:

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 225 **Volts:** 240 **Phase:**

Comments:

HVAC

Manufacturer: Fujitsu **Model #:** Halcyon

Cooling Tons: **# of Units:** 1

Description: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

Grounding System

System Type:

Description:

Surge Suppression Devices:

Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

UPS System

Manufacturer: Best Power **Model #:**

# of Units: 1 **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

Describe Floor Space:

Transmission Line Entry

Total Ports: 12 **# of Ports Used:**

Description / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

There two shelter shelter one used 12 ports, shelter two used 10 ports.

Additional Comments:

LAND MOBILE RADIO INFORMATION

Manufacturer: Motorola
Transmit Pwr. (watts):

Model: MSF 5000
ERP (watts):

Call Sign:
Power Source:

Transmit (MHz)
Receive (MHz):

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: TX/RX Systems
# of Channels: 9

Multicoupler Manufacturer:
Model:

Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer: Motorola
Transmit Pwr. (watts):

Model: Astro-TAC voters
ERP (watts):

Call Sign:
Power Source:

Transmit (MHz)
Receive (MHz):

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:

Multicoupler Manufacturer:
Model:

Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer: Motorola
Transmit Pwr. (watts):

Model: Quantars
ERP (watts):

Call Sign:
Power Source:

Transmit (MHz)
Receive (MHz):

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels: 2

Multicoupler Manufacturer:
Model:

Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer: Motorola
Transmit Pwr. (watts):

Model:
ERP (watts):

Call Sign:
Power Source:

Transmit (MHz)
Receive (MHz):

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:

Multicoupler Manufacturer:
Model:

Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: Harris Farinon Division

Model #: DVM18/45
2 Units

MW Owner:

Analog: ☐ Yes ☐ No

Digital, DS1 Capacity Digital

Frequency Band: 18 GHz

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf. **Model #:**

Alarm Sys. Manuf.: Centra-Line **Model #:** 481

Alarm Sys. Type:

Dehydrator: ☐ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: Harris Farinon Division

Model #: FAS-6000E

3 Units

MW Owner: Alameda County

Analog: ☑ Yes ☐ No

Digital, DS1 Capacity

Frequency Band: 6 GHz

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: Western Multiplex **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf. **Model #:**

Alarm Sys. Manuf.: Badger **Model #:** 481

Alarm Sys. Type:

Dehydrator: ☐ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: Alacatel

Model #:

MW Owner:

Analog: ☐ Yes ☐ No

Digital, DS1 Capacity DS1

Frequency Band: 4.5 GHz

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf. **Model #:**

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☐ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Site Name **Site Type**

UNION CITY PD DISPATCH

Survey Date	**Surveyors**	**Observed Position (NAD83)**	
9/16/2008	TRM	Latitude(N)	Longitude(W)

POTS: ☐ Yes ☐ No

Telco T1's:

Has Fiber: ☐ Yes ☐ No

Site Access

Parking Adequate: ☑ Yes ☐ No

Fencing / Gate: ☑ Yes ☐ No **Type:**

Fire Suppression: ☐ Yes ☐ No **Type:**

Smoke Alarm: ☐ Yes ☐ No

Emergency Lighting: ☐ Yes ☐ No

Comments:

Site Description

Compound room for additional shelter:

Other Tower(s) / Comments: ☐ Yes ☐ No

Building Design Description

Manufacturer:

Model #:

Outside Diminsions:

Prefab./Built on Site:

Wall Construction:

Roof Construction:

Floor Composition:

Comments:

Outside Grounding System Description

Generator		
Manufacturer:	**Model #:**	**Phase:**
Capacity:	**KVA:**	

Transfer Switch Manufacturer:	**Model #:**
Volts:	**Amps:**
Comments:	

Fuel System	
Fuel Type:	**# of Tanks:**
Tank Size (gallons):	**Comments:**
In-Ground / Above Ground:	

DISPATCH CENTER INFORMATION

Center Name: ALAMEDA COUNTY FIRE
Surveyor: TRM
Site Type: Dispatch
Survey Date: 9/18/2008
County:
Revisit:
Adequate Air Conditioning ☑ Ye ☐ No **Model #:**

Equipment Room Details:

Dispatch Room Description

Raised Computer Flooring: ☑ Ye ☐ No

Pwr. distribution Units: ☑ Ye ☐ No

Grounding System: (Rate) ☐ Great ☐ Good ☑ Average ☐ Poor
System Type:
Equipment Grounding Description:
Surge Suppression Devices:
Comments:

UPS System: (Rate) ☐ Great ☐ Good ☐ Average ☐ Poor
Manufacturer: **Model #:**
# of Units: **kVA:** **Battery Capacity:**
Condition and Comments:

Logging Recorder Manuf.: Dictaphone **Model #:** Freedom
Channel Capacity: 64 **# of Channels Used:** 48

Comments:

Fire Station Alerting Make	yes	**Model:**	Locution
Paging:	yes	**Model:**	Zetron
Netclock:	yes	**Model:**	Spectracom

# of Dispatch Only Positions:	2	**# of Call Taker Only Positions**	6
# of Supervisor Positions:	1	**# of Spare Positions:**	0

Control Stations	**Location**	**Qty**

Agencies Dispatched: Fremont 1, Union City, Alameda City, Alameda County, and Camp Park Combat

Notes:

Mobile Data Equipment	**Make**	**Model #:**
All First Line	Pansonic	Tough Books

Console Equip. Type

Incoming Circuits (connectivity): T1 and MW

Central Electronics Equipment

Manufacturer: **Model #:**

Notes:

Racks:

Dispatch/Radio Position **# of Positions** 2

- ☑ **Monitor**
- ☑ **Mouse**
- ☑ **Desktop**
- ☑ **Headset**
- ☑ **Footswitch**
- ☑ **PBX/KTS Telephone Se**

Console Make: Motorola

Console Model # Motorola

Notes:

Monitors	**Application**
Monitor 1	Fire Alarm
Monitor 2	CAD
Monitor 3	CAD
Monitor 4	CAD
Monitor 5	Radio
Control Station	Monitor 6 Phone/911

Call Taker Position	# of Positions 6	Monitors	Application
☑ Monitor		Monitor 1	Fire Alarm
☑ Mouse		Monitor 2	CAD
☑ Desktop		Monitor 3	CAD
☑ Headset		Monitor 4	CAD
☑ Footswitch		Monitor 5	Radio
☑ PBX/KTS Telephone Se		Control Station	Monitor 6 Phone/911

Console Make: Motorola

Console Model # Gold Elite

Notes:

Supervisor Position	# of Positions 1	Monitors	Application
☑ Monitor		Monitor 1	Fire Alarm
☑ Mouse		Monitor 2	CAD
☑ Desktop		Monitor 3	CAD
☑ Headset		Monitor 4	CAD
☑ Footswitch		Monitor 5	Radio
☑ PBX/KTS Telephone Se		Control Station	Monitor 6 Phone/911

Console Make: Motorola

Console Model # Gold Elite

Notes:

Customer Premise Equipment: Dispatch 30' x 30'

Computer Terminals and Moniters

CAD:	☑ Yes	☐ No	**State Criminal Database**	☐ Yes	☑ No
Federal NCIC	☐ Yes	☑ No	**Alarm**	☑ Yes	☐ No
Security Video Monitor	☑ Yes	☐ No	**System Manager**	☑ Yes	☐ No

Notes: CAD is the system manager.

Other Miscellanous Equipment:

DISPATCH CENTER INFORMATION

Center Name: ALAMEDA COUNTY SHERIFF **Surveyor:** TRM

Site Type: Dispatch **Survey Date:** 9/15/2008

County: **Revisit:**

Adequate Air Conditioning ☑ Ye ☐ No **Model #:**

Equipment Room Details:

Dispatch Room Description

Raised Computer Flooring: ☑ Ye ☐ No

Pwr. distribution Units: ☑ Ye ☐ No

Grounding System: (Rate) ☐ Great ☐ Good ☐ Average ☑ Poor

System Type:

Equipment Grounding Description:

Surge Suppression Devices:

Comments:

UPS System: (Rate) ☐ Great ☐ Good ☑ Average ☐ Poor

Manufacturer: Symmetra **Model #:**

# of Units: 2 **kVA:** **Battery Capacity:**

Condition and Comments:

Logging Recorder Manuf.: DLI **Model #:**

Channel Capacity: 26 **# of Channels Used:** 21

Comments: 2 servers

Fire Station Alerting Make **Model:**

Paging: **Model:**

Netclock: **Model:**

# of Dispatch Only Positions: 5 **# of Call Taker Only Positions** 3

# of Supervisor Positions: 1 **# of Spare Positions:** 0

Control Stations	Location	Qty

Agencies Dispatched: County Sheriff and Radio Shop

Notes:

Mobile Data Equipment **Make** **Model #:**

MDT is thru AT&T

Console Equip. Type

Incoming Circuits (connectivity): MW and T1

Central Electronics Equipment

Manufacturer: **Model #:**

Notes:

Racks:

Dispatch/Radio Position **# of Positions** 5

- ☑ **Monitor**
- ☑ **Mouse**
- ☑ **Desktop**
- ☑ **Headset**
- ☑ **Footswitch**
- ☐ **PBX/KTS Telephone Se**

Console Make:

Console Model #

Notes:

Monitors	Application
Monitor 1	Phone/911
Monitor 2	CAD
Monitor 3	CAD
Monitor 4	CAD
Monitor 5	RADIO

Control Station

Call Taker Position	# of Positions 3	Monitors	Application
☑ Monitor		Monitor 1	Phone/911
☑ Mouse		Monitor 2	CAD
☑ Desktop		Monitor 3	CAD
☑ Headset		Monitor 4	CAD
☐ Footswitch		Monitor 5	
☐ PBX/KTS Telephone Se		Control Station	

Console Make:

Console Model #

Notes:

Supervisor Position	# of Positions 1	Monitors	Application
☑ Monitor		Monitor 1	Phone/911
☑ Mouse		Monitor 2	CAD
☑ Desktop		Monitor 3	CAD
☑ Headset		Monitor 4	CAD
☐ Footswitch		Monitor 5	
☐ PBX/KTS Telephone Se		Control Station	

Console Make:

Console Model #

Notes:

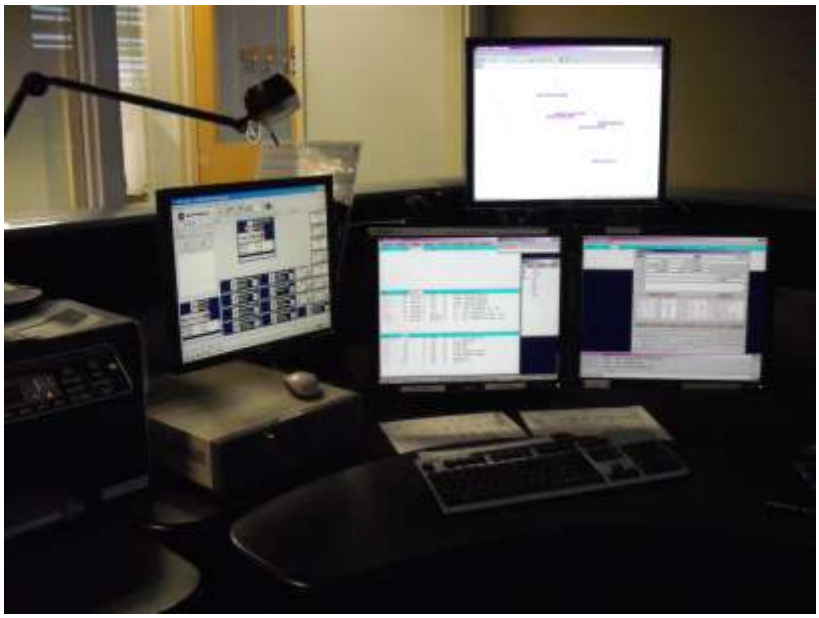
Customer Premise Equipment: Dispatch Area 32' x 26'

Computer Terminals and Moniters

CAD:	☑ Yes	☐ No	**State Criminal Database**	☑ Yes	☐ No
Federal NCIC	☑ Yes	☐ No	**Alarm**	☑ Yes	☐ No
Security Video Monitor	☑ Yes	☐ No	**System Manager**	☐ Yes	☐ No

Notes:

Other Miscellanous Equipment:



DISPATCH CENTER INFORMATION

Center Name: CITY OF ALAMEDA PD DISPATCH **Surveyor:** TRM

Site Type: Dispatch **Survey Date:** 9/17/2008

County: **Revisit:**

Adequate Air Conditioning ☑ Ye ☐ No **Model #:**

Equipment Room Details:

Dispatch Room Description

Raised Computer Flooring: ☐ Ye ☑ No

Pwr. distribution Units: ☑ Ye ☐ No

Grounding System: (Rate) ☐ Great ☐ Good ☐ Average ☑ Poor

System Type:

Equipment Grounding Description:

Surge Suppression Devices:

Comments:

UPS System: (Rate) ☐ Great ☐ Good ☑ Average ☐ Poor

Manufacturer: Oneac **Model #:** 900XT

# of Units: 2 **kVA:** **Battery Capacity:**

Condition and Comments:

Logging Recorder Manuf.: Mercom **Model #:**

Channel Capacity: **# of Channels Used:** 19 or 20

Comments:

Fire Station Alerting Make	no	**Model:**	
Paging:	no	**Model:**	
Netclock:	Spectracom	**Model:**	netclock 2

# of Dispatch Only Positions:	5	**# of Call Taker Only Positions**	0
# of Supervisor Positions:	0	**# of Spare Positions:**	0

Control Stations	**Location**	**Qty**
use portable as backup		

Agencies Dispatched: Police

Notes:

Mobile Data Equipment	**Make**	**Model #:**
Tibourn		

Console Equip. Type

Incoming Circuits (connectivity): T1 and MW

Central Electronics Equipment

Manufacturer: **Model #:**

Notes:

Racks:

Dispatch/Radio Position **# of Positions** 5

- ☑ **Monitor**
- ☑ **Mouse**
- ☑ **Desktop**
- ☑ **Headset**
- ☑ **Footswitch**
- ☑ **PBX/KTS Telephone Se**

Console Make: Motorola

Console Model # Motorola

Notes:

Monitors	**Application**
Monitor 1	Radio
Monitor 2	CAD
Monitor 3	CAD
Monitor 4	Mapping
Monitor 5	Phone/911
Control Station	Motorola SPECTRA

Call Taker Position	# of Positions 0	Monitors	Application
☐ Monitor		Monitor 1	
☐ Mouse		Monitor 2	
☐ Desktop		Monitor 3	
☐ Headset		Monitor 4	
☐ Footswitch		Monitor 5	
☐ PBX/KTS Telephone Se		Control Station	

Console Make:

Console Model #

Notes:

Supervisor Position	# of Positions 0	Monitors	Application
☐ Monitor		Monitor 1	
☐ Mouse		Monitor 2	
☐ Desktop		Monitor 3	
☐ Headset		Monitor 4	
☐ Footswitch		Monitor 5	
☐ PBX/KTS Telephone Se		Control Station	

Console Make:

Console Model #

Notes:

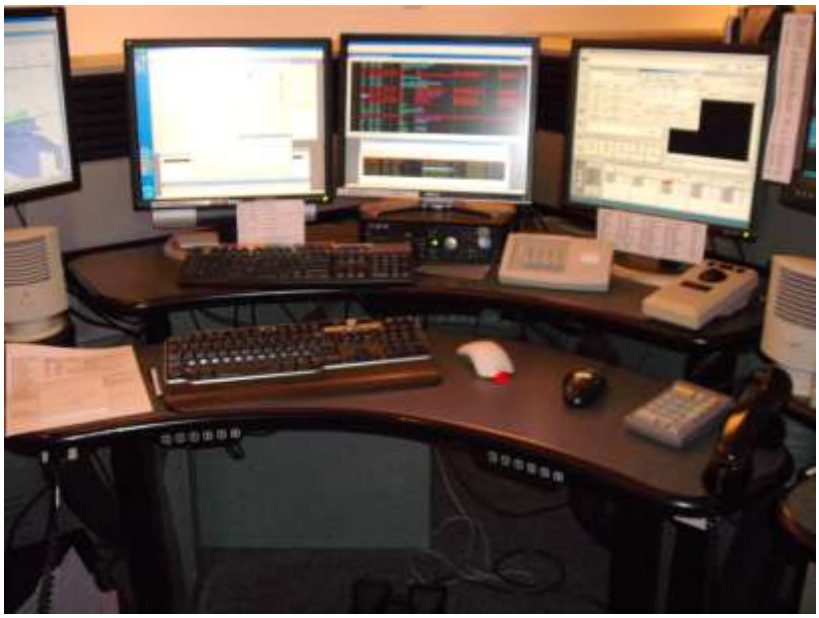
Customer Premise Equipment: Dispatch 24' x 17'

Computer Terminals and Moniters

CAD:	☑ Yes	☐ No	**State Criminal Database**	☑ Yes	☐ No
Federal NCIC	☑ Yes	☐ No	**Alarm**	☑ Yes	☐ No
Security Video Monitor	☑ Yes	☐ No	**System Manager**	☐ Yes	☐ No

Notes:

Other Miscellanous Equipment:



DISPATCH CENTER INFORMATION

Center Name: CITY OF PLEASANTON DISPATCH **Surveyor:**

Site Type: Dispatch **Survey Date:**

County: **Revisit:**

Adequate Air Conditioning ☑ Ye ☐ No **Model #:** building unit

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Equipment Room Details:

Dispatch Room Description

Raised Computer Flooring: ☐ Ye ☑ No

Pwr. distribution Units: ☑ Ye ☐ No

Grounding System: (Rate) ☐ Great ☐ Good ☐ Average ☑ Poor

System Type:

Equipment Grounding Description:

Surge Suppression Devices:

Comments:

UPS System: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

Manufacturer: APC **Model #:** Smartups 1500

# of Units: 4 **kVA:** **Battery Capacity:**

Condition and Comments: Under Dispatch bench

Logging Recorder Manuf.: Nice **Model #:** Nice Call digital

Channel Capacity: 10 **# of Channels Used:** 7

Comments:

Fire Station Alerting Make	no	**Model:**	
Paging:	no	**Model:**	
Netclock:	no	**Model:**	

# of Dispatch Only Positions:	4	**# of Call Taker Only Positions**	0
# of Supervisor Positions:	0	**# of Spare Positions:**	0

Control Stations	Location	Qty
Motorola SPECTRA	equipment room	7

Agencies Dispatched: Police, Animal Services, and public works

Notes:

Mobile Data Equipment **Make** **Model #:**

Console Equip. Type

Incoming Circuits (connectivity): T1 and MW

Central Electronics Equipment

Manufacturer: **Model #:**

Notes:

Racks:

Dispatch/Radio Position **# of Positions** 4

- ☑ **Monitor**
- ☑ **Mouse**
- ☑ **Desktop**
- ☑ **Headset**
- ☑ **Footswitch**
- ☑ **PBX/KTS Telephone Se**

Console Make: Motorola

Console Model # Motorola

Notes:

Monitors	Application
Monitor 1	Mapping
Monitor 2	CAD
Monitor 3	CAD
Monitor 4	Phone/911
Monitor 5	Radio

Control Station

Call Taker Position	# of Positions 0	Monitors	Application
☐ Monitor		Monitor 1	
☐ Mouse		Monitor 2	
☐ Desktop		Monitor 3	
☐ Headset		Monitor 4	
☐ Footswitch		Monitor 5	
☐ PBX/KTS Telephone Se		Control Station	

Console Make:

Console Model #

Notes:

Supervisor Position	# of Positions 0	Monitors	Application
☐ Monitor		Monitor 1	
☐ Mouse		Monitor 2	
☐ Desktop		Monitor 3	
☐ Headset		Monitor 4	
☐ Footswitch		Monitor 5	
☐ PBX/KTS Telephone Se		Control Station	

Console Make:

Console Model #

Notes:

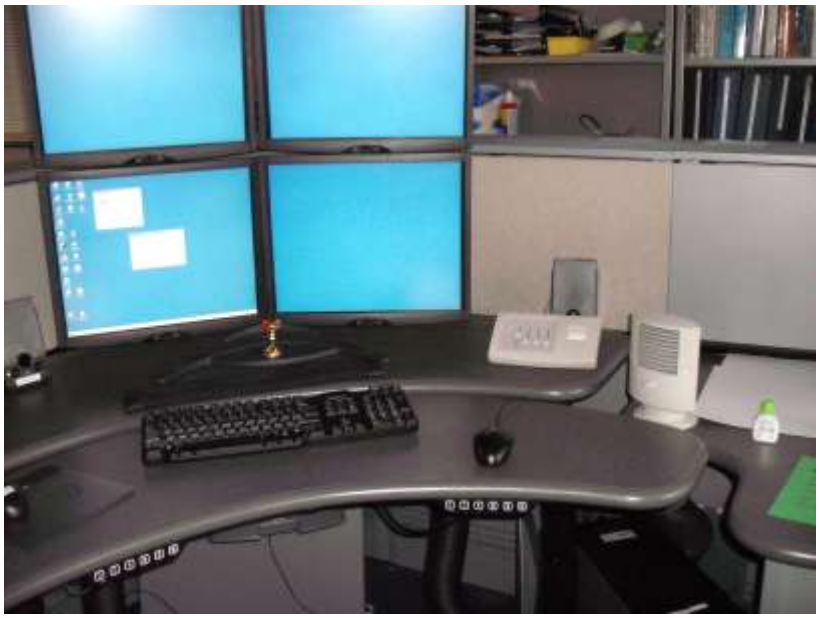
Customer Premise Equipment: Dispatch 28' x 20'

Computer Terminals and Moniters

CAD:	☑ Yes	☐ No	**State Criminal Database**	☑ Yes	☐ No
Federal NCIC	☑ Yes	☐ No	**Alarm**	☑ Yes	☐ No
Security Video Monitor	☑ Yes	☐ No	**System Manager**	☐ Yes	☐ No

Notes:

Other Miscellanous Equipment:



DISPATCH CENTER INFORMATION

Center Name: CITY OF SAN LEANDRO PD DISPATCH **Surveyor:**

Site Type: Dispatch **Survey Date:**

County: **Revisit:**

Adequate Air Conditioning ☑ Ye ☐ No **Model #:**

Equipment Room Details:

Dispatch Room Description

Raised Computer Flooring: ☑ Ye ☐ No

Pwr. distribution Units: ☑ Ye ☐ No

Grounding System: (Rate) ☐ Great ☐ Good ☑ Average ☐ Poor

System Type:

Equipment Grounding Description:

Surge Suppression Devices: yes

Comments:

UPS System: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Manufacturer: **Model #:**

# of Units: **kVA:** **Battery Capacity:**

Condition and Comments:

Logging Recorder Manuf.: Dictaphone **Model #:**

Channel Capacity: **# of Channels Used:**

Comments:

Fire Station Alerting Make	no	**Model:**	
Paging:	no	**Model:**	
Netclock:	no	**Model:**	

# of Dispatch Only Positions:	4	**# of Call Taker Only Positions**	1
# of Supervisor Positions:	1	**# of Spare Positions:**	0

Control Stations	Location	Qty
Motorola SPECTRA backup	equipment room	3

Agencies Dispatched: Police Department

Notes:

Mobile Data Equipment	Make	Model #:
PDRC	Pansonic	CF-29

Console Equip. Type

Incoming Circuits (connectivity): T1

Central Electronics Equipment

Manufacturer: **Model #:**

Notes:

Racks:

Dispatch/Radio Position **# of Positions** 4

- ☑ **Monitor**
- ☑ **Mouse**
- ☑ **Desktop**
- ☑ **Headset**
- ☑ **Footswitch**
- ☑ **PBX/KTS Telephone Se**

Console Make: Motorola

Console Model # Motorola

Notes: 4 CAD Monitors

Monitors	Application
Monitor 1	Radio
Monitor 2	CAD with Mapping
Monitor 3	CAD
Monitor 4	CAD
Monitor 5	Phone/911

Control Station

Call Taker Position	# of Positions 1	Monitors	Application
☑ Monitor		Monitor 1	Radio
☑ Mouse		Monitor 2	CAD with Mapping
☑ Desktop		Monitor 3	CAD
☑ Headset		Monitor 4	CAD
☑ Footswitch		Monitor 5	Phone/911
☑ PBX/KTS Telephone Se		Control Station	

Console Make: Motorola

Console Model # Gold Elite

Notes:

Supervisor Position	# of Positions 1	Monitors	Application
☑ Monitor		Monitor 1	Radio
☑ Mouse		Monitor 2	CAD with Mapping
☑ Desktop		Monitor 3	CAD
☑ Headset		Monitor 4	CAD
☑ Footswitch		Monitor 5	Phone/911
☑ PBX/KTS Telephone Se		Control Station	

Console Make: Motorola

Console Model # Gold Elite

Notes:

Customer Premise Equipment: Dispatch 25' x 18'

Computer Terminals and Moniters

CAD:	☑ Yes	☐ No	**State Criminal Database**	☑ Yes	☐ No
Federal NCIC	☑ Yes	☐ No	**Alarm**	☑ Yes	☐ No
Security Video Monitor	☑ Yes	☐ No	**System Manager**	☐ Yes	☐ No

Notes:

Other Miscellanous Equipment:

DISPATCH CENTER INFORMATION

Center Name: EAST BAY REGIONAL PARK DISTRICT DISPATCH

Surveyor:

Site Type: Dispatch

Survey Date:

County:

Revisit:

Adequate Air Conditioning ☑ Ye ☐ No **Model #:**

Equipment Room Details:

Dispatch Room Description

Raised Computer Flooring: ☐ Ye ☑ No

Pwr. distribution Units: ☑ Ye ☐ No

Grounding System: (Rate) ☐ Great ☐ Good ☑ Average ☐ Poor

System Type:

Equipment Grounding Description:

Surge Suppression Devices:

Comments:

UPS System: (Rate) ☐ Great ☐ Good ☐ Average ☐ Poor

Manufacturer: **Model #:**

# of Units: **kVA:** **Battery Capacity:**

Condition and Comments:

Logging Recorder Manuf.: **Model #:**

CONFIDENTIAL

Channel Capacity: **# of Channels Used:** 3 on Radio

Comments:

Fire Station Alerting Make no **Model:**

Paging: Intercom **Model:**

Netclock: **Model:**

# of Dispatch Only Positions: 4 **# of Call Taker Only Positions** 0

# of Supervisor Positions: 1 **# of Spare Positions:** 0

Control Stations **Location** **Qty**

Agencies Dispatched: Park Police, Fire, and Rangers

Notes:

Mobile Data Equipment **Make** **Model #:**

none

Console Equip. Type

Incoming Circuits (connectivity): T1 and MW

Central Electronics Equipment

Manufacturer: **Model #:**

Notes:

Racks:

Dispatch/Radio Position **# of Positions** 4

- ☑ **Monitor**
- ☑ **Mouse**
- ☑ **Desktop**
- ☑ **Headset**
- ☑ **Footswitch**
- ☑ **PBX/KTS Telephone Se**

Console Make: Motorola

Console Model # Motorola

Notes:

Monitors	Application
Monitor 1	Phone/911
Monitor 2	CAD
Monitor 3	CAD
Monitor 4	Radio
Monitor 5	

Control Station

Call Taker Position	# of Positions 0	Monitors	Application
☐ Monitor		Monitor 1	
☐ Mouse		Monitor 2	
☐ Desktop		Monitor 3	
☐ Headset		Monitor 4	
☐ Footswitch		Monitor 5	
☐ PBX/KTS Telephone Se		Control Station	

Console Make:

Console Model #

Notes:

Supervisor Position	# of Positions 1	Monitors	Application
☑ Monitor		Monitor 1	Phone/911
☑ Mouse		Monitor 2	CAD
☑ Desktop		Monitor 3	CAD
☑ Headset		Monitor 4	Radio
☑ Footswitch		Monitor 5	
☑ PBX/KTS Telephone Se		Control Station	

Console Make: Motorola

Console Model # Gold Elite

Notes:

Customer Premise Equipment: Dispatch 17' x 36'

Computer Terminals and Moniters

CAD:	☑ Yes	☐ No	**State Criminal Database**	☑ Yes	☐ No
Federal NCIC	☑ Yes	☐ No	**Alarm**	☑ Yes	☐ No
Security Video Monitor	☑ Yes	☐ No	**System Manager**	☐ Yes	☐ No

Notes:

Other Miscellanous Equipment:

DISPATCH CENTER INFORMATION

Center Name: FREMONT PD DISPATCH **Surveyor:**

Site Type: Dispatch **Survey Date:**

County: **Revisit:**

Adequate Air Conditioning ☑ Ye ☐ No **Model #:**

Equipment Room Details:

Dispatch Room Description

Raised Computer Flooring: ☑ Ye ☐ No

Pwr. distribution Units: ☑ Ye ☐ No

Grounding System: (Rate) ☐ Great ☐ Good ☑ Average ☐ Poor

System Type:

Equipment Grounding Description:

Surge Suppression Devices:

Comments:

UPS System: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

Manufacturer: **Model #:**

# of Units: **kVA:** **Battery Capacity:**

Condition and Comments:

Logging Recorder Manuf.: Voice Trint **Model #:** Digital Logger

Channel Capacity: 96 **# of Channels Used:** 54

Comments:

Fire Station Alerting Make	No	**Model:**	
Paging:	No	**Model:**	
Netclock:	Yes	**Model:**	

# of Dispatch Only Positions:	7	**# of Call Taker Only Positions**	0
# of Supervisor Positions:	2	**# of Spare Positions:**	0

Control Stations	Location	Qty
Motorola ASTRO	backups	13

Agencies Dispatched: Police Department, Animal Services, and two regional task force.

Notes:

Mobile Data Equipment	Make	Model #:
Data Lex Go thru Verizon	Mobile Data	TCU-TX200-115

Console Equip. Type

Incoming Circuits (connectivity): T1 and MW

Central Electronics Equipment

Manufacturer: **Model #:**

Notes:

Racks:

Dispatch/Radio Position **# of Positions** 7

- ☑ **Monitor**
- ☑ **Mouse**
- ☑ **Desktop**
- ☑ **Headset**
- ☑ **Footswitch**
- ☑ **PBX/KTS Telephone Se**

Console Make: Motorola

Console Model # Motorola

Notes: AT&T phone

Monitors	Application
Monitor 1	Radio
Monitor 2	CAD
Monitor 3	GIS/AVL
Monitor 4	Phone/911
Monitor 5	A record S
Control Station	Monitor 6 ETS Tracking

Call Taker Position	# of Positions 0	Monitors	Application
☐ Monitor		Monitor 1	
☐ Mouse		Monitor 2	
☐ Desktop		Monitor 3	
☐ Headset		Monitor 4	
☐ Footswitch		Monitor 5	
☐ PBX/KTS Telephone Se		Control Station	

Console Make:

Console Model #

Notes:

Supervisor Position	# of Positions 2	Monitors	Application
☑ Monitor		Monitor 1	Radio
☑ Mouse		Monitor 2	CAD
☑ Desktop		Monitor 3	GIS/AVL
☑ Headset		Monitor 4	Phone/911
☑ Footswitch		Monitor 5	A Record S
☑ PBX/KTS Telephone Se		Control Station	Monitor 6 ETS Tracking

Console Make: Motorola

Console Model # Gold Elite

Notes:

Customer Premise Equipment: 50' x 27'

Computer Terminals and Moniters

CAD:	☑ Yes	☐ No	**State Criminal Database**	☑ Yes	☐ No
Federal NCIC	☑ Yes	☐ No	**Alarm**	☑ Yes	☐ No
Security Video Monitor	☑ Yes	☐ No	**System Manager**	☐ Yes	☐ No

Notes:

Other Miscellanous Equipment:

DISPATCH CENTER INFORMATION

Center Name: HAYWARD PD DISPATCH **Surveyor:** TRM

Site Type: Dispatch **Survey Date:** 9/16/2008

County: **Revisit:**

Adequate Air Conditioning ☑ Ye ☐ No **Model #:**

Equipment Room Details:

Dispatch Room Description

Raised Computer Flooring: ☑ Ye ☐ No

Pwr. distribution Units: ☑ Ye ☐ No

Grounding System: (Rate) ☐ Great ☑ Good ☐ Average ☐ Poor

System Type:

Equipment Grounding Description:

Surge Suppression Devices:

Comments:

UPS System: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

Manufacturer: Best Product **Model #:**

# of Units: 2 **kVA:** 18 **Battery Capacity:** battery backup

Condition and Comments:

Logging Recorder Manuf.: EXCOM **Model #:** Hindsight-Net 6

Channel Capacity: 32 **# of Channels Used:** 13

Comments:

Fire Station Alerting Make	PRC	**Model:**	Through CAD Quick Call backup
Paging:	Quick Call	**Model:**	
Netclock:	no	**Model:**	

# of Dispatch Only Positions:	6	**# of Call Taker Only Positions**	0
# of Supervisor Positions:	1	**# of Spare Positions:**	0

Control Stations	Location	Qty
800MHz PD and FD		1
VHF Control Station		2
UHF Control Station		1

Agencies Dispatched: City of Hayward and Community of Fairview only Fire

Notes: ISN

Mobile Data Equipment	Make	Model #:
Laptop Pansonic	GPS and Verizon	

Console Equip. Type

Incoming Circuits (connectivity): T1, ISDN, wireless point to point city microwave to all city sites.

Central Electronics Equipment

Manufacturer: **Model #:**

Notes:

Racks:

Dispatch/Radio Position **# of Positions** 6

- ☑ **Monitor**
- ☑ **Mouse**
- ☑ **Desktop**
- ☑ **Headset**
- ☑ **Footswitch**
- ☐ **PBX/KTS Telephone Se**

Monitors	Application
Monitor 1	Radio
Monitor 2	Phone/911
Monitor 3	CAD
Monitor 4	CAD
Monitor 5	

Control Station

Console Make: AVTAC

Console Model # AVTAC

Notes:

Call Taker Position	# of Positions 0	Monitors	Application
☐ Monitor		Monitor 1	
☐ Mouse		Monitor 2	
☐ Desktop		Monitor 3	
☐ Headset		Monitor 4	
☐ Footswitch		Monitor 5	
☐ PBX/KTS Telephone Se		Control Station	

Console Make:

Console Model #

Notes:

Supervisor Position	# of Positions 1	Monitors	Application
☑ Monitor		Monitor 1	Radio
☑ Mouse		Monitor 2	Phone/911
☑ Desktop		Monitor 3	CAD
☑ Headset		Monitor 4	CAD
☑ Footswitch		Monitor 5	
☐ PBX/KTS Telephone Se		Control Station	

Console Make: AVTAC

Console Model # Positron

Notes:

Customer Premise Equipment: 30' x 15'

Computer Terminals and Moniters

CAD:	☑ Yes	☐ No	**State Criminal Database**	☑ Yes	☐ No
Federal NCIC	☑ Yes	☐ No	**Alarm**	☐ Yes	☐ No
Security Video Monitor	☑ Yes	☐ No	**System Manager**	☐ Yes	☐ No

Notes:

Other Miscellanous Equipment:

DISPATCH CENTER INFORMATION

Center Name: NEWARK PD DISPATCH **Surveyor:** TRM

Site Type: Dispatch **Survey Date:** 9/16/2008

County: **Revisit:**

Adequate Air Conditioning ☑ Ye ☐ No **Model #:**

Equipment Room Details:

Dispatch Room Description

Raised Computer Flooring: ☑ Ye ☐ No

Pwr. distribution Units: ☑ Ye ☐ No

Grounding System: (Rate) ☐ Great ☐ Good ☑ Average ☐ Poor

System Type:

Equipment Grounding Description:

Surge Suppression Devices:

Comments:

UPS System: (Rate) ☐ Great ☐ Good ☑ Average ☐ Poor

Manufacturer: **Model #:**

# of Units: **kVA:** **Battery Capacity:**

Condition and Comments:

Logging Recorder Manuf.: **Model #:**

Channel Capacity: **# of Channels Used:**

Comments:

Fire Station Alerting Make **Model:**

Paging: **Model:**

Netclock: **Model:**

# of Dispatch Only Positions: 2 **# of Call Taker Only Positions** 0

# of Supervisor Positions: 1 **# of Spare Positions:** 1

Control Stations	Location	Qty

Agencies Dispatched: Newark PD

Notes:

Mobile Data Equipment **Make** **Model #:**

Console Equip. Type

Incoming Circuits (connectivity): T1 and MW

Central Electronics Equipment

Manufacturer: **Model #:**

Notes:

Racks:

Dispatch/Radio Position	# of Positions 2	Monitors	Application
☑ Monitor		Monitor 1	Radio
☑ Mouse		Monitor 2	CAD
☑ Desktop		Monitor 3	CAD and Mapping
☑ Headset		Monitor 4	Phone/911
☑ Footswitch		Monitor 5	
☑ PBX/KTS Telephone Se		Control Station	Motorola SPECTRA

Console Make: Motorola

Console Model # Motorola

Notes:

Call Taker Position	# of Positions	Monitors	Application
☐ Monitor		Monitor 1	
☐ Mouse		Monitor 2	
☐ Desktop		Monitor 3	
☐ Headset		Monitor 4	
☐ Footswitch		Monitor 5	
☐ PBX/KTS Telephone Se		Control Station	

Console Make:

Console Model #

Notes:

Supervisor Position	**# of Positions** 1	**Monitors**	**Application**
☑ **Monitor**		**Monitor 1**	Radio
☑ **Mouse**		**Monitor 2**	CAD
☑ **Desktop**		**Monitor 3**	CAD and Mapping
☑ **Headset**		**Monitor 4**	Phone/911
☑ **Footswitch**		**Monitor 5**	
☑ **PBX/KTS Telephone Se**		**Control Station**	Motorola SPECTRA

Console Make: Motorola

Console Model # Gold Elite

Notes:

Customer Premise Equipment: Dispatch 12' x 16'

Computer Terminals and Moniters

CAD:	☑ Yes	☐ No	**State Criminal Database**	☑ Yes	☐ No
Federal NCIC	☑ Yes	☐ No	**Alarm**	☑ Yes	☐ No
Security Video Monitor	☑ Yes	☐ No	**System Manager**	☐ Yes	☐ No

Notes:

Other Miscellanous Equipment:

DISPATCH CENTER INFORMATION

Center Name: UNION CITY PD DISPATCH **Surveyor:** TRM

Site Type: Dispatch **Survey Date:** 9/16/2008

County: **Revisit:**

Adequate Air Conditioning ☑ Ye ☐ No **Model #:**

Equipment Room Details:

Dispatch Room Description

Raised Computer Flooring: ☑ Ye ☐ No

Pwr. distribution Units: ☑ Ye ☐ No

Grounding System: (Rate) ☐ Great ☐ Good ☑ Average ☐ Poor

System Type:

Equipment Grounding Description:

Surge Suppression Devices:

Comments:

UPS System: (Rate) ☐ Great ☐ Good ☑ Average ☐ Poor

Manufacturer: Best Power **Model #:** Ferrups FE Series

# of Units: 1 **kVA:** **Battery Capacity:**

Condition and Comments:

Logging Recorder Manuf.: Dictaphone **Model #:**

Channel Capacity: **# of Channels Used:**

Comments:

Fire Station Alerting Make **Model:**

Paging: **Model:**

Netclock: **Model:**

# of Dispatch Only Positions: 3 **# of Call Taker Only Positions**

# of Supervisor Positions: 1 **# of Spare Positions:** 2

Control Stations	Location	Qty
Motorola SPECTRA		6

Agencies Dispatched: Union City Police

Notes:

Mobile Data Equipment **Make** **Model #:**

Console Equip. Type

Incoming Circuits (connectivity): T1

Central Electronics Equipment

Manufacturer: **Model #:**

Notes:

Racks:

Dispatch/Radio Position **# of Positions** 5

- ☑ **Monitor**
- ☑ **Mouse**
- ☑ **Desktop**
- ☑ **Headset**
- ☑ **Footswitch**
- ☑ **PBX/KTS Telephone Se**

Console Make: Motorola

Console Model # Motorola

Notes: Centra Com

Monitors	Application
Monitor 1	Phone/911
Monitor 2	Radio
Monitor 3	CAD
Monitor 4	Mapping
Monitor 5	

Control Station

Call Taker Position	# of Positions	Monitors	Application
☐ Monitor		Monitor 1	
☐ Mouse		Monitor 2	
☐ Desktop		Monitor 3	
☐ Headset		Monitor 4	
☐ Footswitch		Monitor 5	
☐ PBX/KTS Telephone Se		Control Station	

Console Make:

Console Model #

Notes:

Supervisor Position	# of Positions 1	Monitors	Application
☑ Monitor		Monitor 1	Phone/911
☑ Mouse		Monitor 2	Radio
☑ Desktop		Monitor 3	CAD
☑ Headset		Monitor 4	Mapping
☑ Footswitch		Monitor 5	
☑ PBX/KTS Telephone Se		Control Station	

Console Make: Motorola

Console Model # Gold Elite

Notes: Centra Com

Customer Premise Equipment: Dispatch 18' x 20'

Computer Terminals and Moniters

CAD:	☑ Yes	☐ No	**State Criminal Database**	☑ Yes	☐ No
Federal NCIC	☑ Yes	☐ No	**Alarm**	☐ Yes	☑ No
Security Video Monitor	☑ Yes	☐ No	**System Manager**	☐ Yes	☐ No

Notes:

Other Miscellanous Equipment:

Site Name	Site Type
ANTIOCH	DISPATCH

Survey Date	Surveyors	Observed Position (NAD83)	
9/18/2008	JKNOWLES	Latitude(N)	Longitude(W)

POTS: ☑ Yes ☐ No

Telco T1's:

Has Fiber: ☐ Yes ☐ No

Site Access

Parking Adequate: ☑ Yes ☐ No

Fencing / Gate: ☐ Yes ☑ No **Type:**

Fire Suppression: ☑ Yes ☐ No **Type:** SPRINKLERS, HALON IN EQUIPMENT ROOMS

Smoke Alarm: ☐ Yes ☑ No

Emergency Lighting: ☑ Yes ☐ No

Comments:

Site Description

Compound room for additional shelter: NO

Other Tower(s) / Comments: ☐ Yes ☑ No
NO TOWER

Building Design Description

Manufacturer:
Model #:
Outside Diminsions: 200 X 250
Prefab./Built on Site: BUILT ON SITE
Wall Construction: CONCRETE
Roof Construction:
Floor Composition: CONCRETE
Comments:

Outside Grounding System Description

Generator

Manufacturer: KOHLER **Model #:** **Phase:** 3
Capacity: 125 **KVA:** 156

Transfer Switch Manufacturer: KOHLER **Model #:**
Volts: **Amps:**
Comments:

Fuel System

Fuel Type: DIESEL **# of Tanks:** 1
Tank Size (gallons): 3500 **Comments:**
In-Ground / Above Ground: INGROUND

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 225 **Volts:** 120/240 **Phase:** 1
Comments: ROOM IS 10 X 14,

HVAC

Manufacturer: **Model #:**
Cooling Tons: **# of Units:**
Description: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor
ROOM IS WARM

Grounding System

System Type: LINER
Description: ONLY SURGE SUPPRESSORS GROUNDED

Surge Suppression Devices: 1
Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

UPS System

Manufacturer: EPE TECHNOLOGIES **Model #:** EPS-2000

# of Units: 1 **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

1 BATT. CABINET

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Describe Floor Space: ROOM IS TIGHT

Transmission Line Entry

Total Ports: 3 **# of Ports Used:** 3

Description / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

3 3' CONDUIT, CABLES RUN THROUGHT CELLING TILE

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 225 **Volts:** 120/240 **Phase:** 1

Comments: ROOM IS 15 X 15, PD SERVER ROOM

HVAC

Manufacturer: **Model #:**

Cooling Tons: **# of Units:**

Description: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

Grounding System

System Type:

Description: NO GROUNDING

Surge Suppression Devices: 2

Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

UPS System

Manufacturer: **Model #:**

# of Units: **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

BATTIERY BACKUP

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Describe Floor Space:

Transmission Line Entry

Total Ports: **# of Ports Used:**

Description / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Additional Comments:

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA **Transmit Pwr. (watts):**

Model: MTR2000 **ERP (watts):**

Call Sign: **Power Source:**

Transmit (MHz) **Receive (MHz):** 155.61

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: **# of Channels:**

Multicoupler Manufacturer: **Model:**

Twr. Top Amp: ☐ Yes ☑ No **Manuf:**

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA **Transmit Pwr. (watts):**

Model: MTR2000 **ERP (watts):**

Call Sign: **Power Source:**

Transmit (MHz) 155.61 **Receive (MHz):** 154.845

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: **# of Channels:**

Multicoupler Manufacturer: **Model:**

Twr. Top Amp: ☐ Yes ☑ No **Manuf:**

Radio Condition

GOOD

Site Name	Site Type
BALD	**RF/MW**

Survey Date	Surveyors	Observed Position (NAD83)	
9/15/2008	JKNOWLES	Latitude(N)	Longitude(W)

POTS: ☐ Yes ☑ No

Telco T1's: NO

Has Fiber: ☐ Yes ☑ No

Site Access

Parking Adequate: ☑ Yes ☐ No

Fencing / Gate: ☑ Yes ☐ No **Type:** CHAINLINK, GOOD

Fire Suppression: ☐ Yes ☑ No **Type:**

Smoke Alarm: ☑ Yes ☐ No

Emergency Lighting: ☐ Yes ☑ No

Comments: SECURITY CAMS

Site Description

Compound room for additional shelter: NO, HAS AN ABANDONED BUILDING, ASBESTOS

Other Tower(s) / Comments: ☐ Yes ☑ No

TOWER IS LOADED HEAVY, MAY HAVE SPACE FOR NEW TOWER

Building Design Description

Manufacturer:
Model #:
Outside Diminsions: 60 X 30
Prefab./Built on Site: BUILT ON SITE
Wall Construction: WOOD
Roof Construction: METAL
Floor Composition: CONCRETE
Comments:

Outside Grounding System Description

OUTSIDE GROUND LINS ARE CLAMPED

Generator

Manufacturer: OLYPIAN **Model #:** D200P4 **Phase:** 1
Capacity: 142 **KVA:** 142

Transfer Switch Manufacturer: ASCO **Model #:** 7000 Series
Volts: **Amps:**
Comments:

Fuel System

Fuel Type: diesel **# of Tanks:** 1
Tank Size (gallons): 1000 **Comments:** CONCRETE
In-Ground / Above Ground: ABOVE

TOWER INFORMATION

Tower Height: 140 TOWER IS FULL
Manufacturer:
Model #:
ASR Registration:
Verticle Cable Ladder: ☑ Yes ☐ No
Tower Paint: ☑ Good ☐ Poor NO PAINT

Tower Type: SELF SUPPORTING
# of Legs: 3

Lighting: NONE

Climbing: ☑ Ladder ☐ Cable

Ground System Type: MULTI-POINT
Ground Sys. Condition: (Comments - Rate) ☐ Great ☑ Good ☐ Average ☐ Poor

Transmission Cable Ground

	Twr. Bottom	Building Entry	Near Antenna	Comments:
MW:	YES	YES		
MW:	YES	YES		
MW:	YES	YES		
Coax:	YES	YES		
Coax:	YES	YES		
Coax:	YES	YES		

Roof Mount Access:

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 225 **Volts:** 240 **Phase:** 1

Comments: ROOM IS 19 X 19

HVAC

Manufacturer: **Model #:**

Cooling Tons: **# of Units:**

Description: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

AC LOCATED ON ROOF

Grounding System

System Type: HALO

Description: HALO RING TO BUS BAR

Surge Suppression Devices: 1

Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

UPS System

Manufacturer: **Model #:**

# of Units: **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

NONE

Alarm

Manufacturer: FIRE-LITE ALARMS **Model #:** MS-4424B

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

Describe Floor Space: AVAILBLE OPEN RACKS

Transmission Line Entry

Total Ports: 32 **# of Ports Used:** 8

Description / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

2 BANKS OF SIXTEEN 4" PORTS

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 225 **Volts:** 240 **Phase:** 1

Comments: ROOM 30 X 15

HVAC

Manufacturer: **Model #:**

Cooling Tons: **# of Units:**

Description: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

Grounding System

System Type: HALO

Description: HALO RING BACK TO BUS BAR

Surge Suppression Devices: 1

Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

UPS System

Manufacturer: **Model #:**

# of Units: **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

NONE

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

ALARM LINKED TO MICROWAVE

Describe Floor Space: ROOM IS NEAR FULL, HAS 2 OPEN RACKS, MORE IF EQUIPMENT IS REORGANIZE

Transmission Line Entry

Total Ports: 48 **# of Ports Used:** 18

Description / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

3 BANKS OF SIXTEEN 4" PORTS

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 225 **Volts:** 240 **Phase:** 1

Comments: ROOM 30 X 15

HVAC

Manufacturer: **Model #:**

Cooling Tons: **# of Units:**

Description: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

Grounding System

System Type: HALO

Description: HALO RING WITH BUS BAR

Surge Suppression Devices: 1

Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

UPS System

Manufacturer: **Model #:**

# of Units: **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

NONE

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

ALARM TIED TO MICROWAVE

Describe Floor Space: ROOM HAS OPEN RACKS

Transmission Line Entry

Total Ports: 48 **# of Ports Used:** 8

Description / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

3 BANKS OF SIXTEEN 4" PORTS

Additional Comments:

LAND MOBILE RADIO INFORMATION

Manufacturer: **Transmit Pwr. (watts):**

Model: **ERP (watts):**

Call Sign: **Power Source:**

Transmit (MHz) 155.310 **Receive (MHz):** 155.625

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: **# of Channels:**

Multicoupler Manufacturer: **Model:**

Twr. Top Amp: ☐ Yes ☐ No **Manuf:**

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer: **Transmit Pwr. (watts):**

Model: **ERP (watts):**

Call Sign: **Power Source:**

Transmit (MHz) 155.040 **Receive (MHz):** 155.040

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: **# of Channels:**

Multicoupler Manufacturer: **Model:**

Twr. Top Amp: ☐ Yes ☐ No **Manuf:**

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer: **Transmit Pwr. (watts):**

Model: **ERP (watts):**

Call Sign: **Power Source:**

Transmit (MHz) 155.250 **Receive (MHz):** 155.955

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: **# of Channels:**

Multicoupler Manufacturer: **Model:**

Twr. Top Amp: ☐ Yes ☐ No **Manuf:**

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 153.995

Receive (MHz): 154.955

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 159.735

Receive (MHz): 154.205

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 160.110

Receive (MHz): 151.025

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 406.125

Receive (MHz): 406.125

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 482.3875

Receive (MHz): 485.3875

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 482.5375

Receive (MHz): 485.5375

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 482.5875

Receive (MHz): 485.5875

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 482.6875

Receive (MHz): 485.6875

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 482.7375

Receive (MHz): 485.7375

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 482.8375

Receive (MHz): 485.8375

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 488.4375

Receive (MHz): 491.4375

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 488.9125

Receive (MHz): 491.9125

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 855.9875

Receive (MHz): 810.9875

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 868.4125

Receive (MHz): 823.4125

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 866.0125

Receive (MHz): 821.0125

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 868.5125

Receive (MHz): 823.5125

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 868.9875

Receive (MHz): 823.9875

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 867.7500

Receive (MHz): 822.7500

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz)

Receive (MHz): 860.0000

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 868.3875

Receive (MHz): 823.3875

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 858.7375

Receive (MHz): 813.7375

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 37.12

Receive (MHz): 37.12

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☑ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 37.98

Receive (MHz): 37.98

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 42.12

Receive (MHz):

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 42.44

Receive (MHz):

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 42.92

Receive (MHz):

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 44.64

Receive (MHz): 44.64

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 44.76

Receive (MHz): 45.04

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 44.98

Receive (MHz): 44.98

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 45.08

Receive (MHz): 45.08

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 45.24

Receive (MHz): 45.24

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 45.56

Receive (MHz): 45.56

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 45.68

Receive (MHz): 45.68

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 45.82

Receive (MHz): 45.82

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 154.280

Receive (MHz): 154.280

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 154.385

Receive (MHz): 154.385

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

Site Name	Site Type
CCC SHERIFF	DISPATCH/RF/MW

Survey Date	Surveyors	Observed Position (NAD83)	
9/16/2008	JKNOWLES	Latitude(N)	Longitude(W)

POTS: ☑ Yes ☐ No

Telco T1's:

Has Fiber: ☐ Yes ☐ No

Site Access

Parking Adequate: ☑ Yes ☐ No

Fencing / Gate: ☑ Yes ☐ No **Type:** CHAINLINK, ELECTRIC GATE

Fire Suppression: ☐ Yes ☐ No **Type:**

Smoke Alarm: ☐ Yes ☐ No

Emergency Lighting: ☐ Yes ☐ No

Comments:

Site Description

Compound room for additional shelter:

Other Tower(s) / Comments: ☐ Yes ☐ No

Building Design Description

Manufacturer:
Model #:
Outside Diminsions: 135 X 50
Prefab./Built on Site: BUILT ON SITE
Wall Construction: CONCRETE
Roof Construction: METAL
Floor Composition: CONCRETE
Comments:

Outside Grounding System Description

Generator

Manufacturer: ONAN **Model #:** 250.ODFM-17R/31005N **Phase:**
Capacity: 250 **KVA:** 312.5

Transfer Switch Manufacturer: **Model #:**
Volts: **Amps:**
Comments:

Fuel System

Fuel Type: DIESEL **# of Tanks:** 1
Tank Size (gallons): **Comments:**
In-Ground / Above Ground: IN-GROUND

TOWER INFORMATION

Tower Height: 100
Manufacturer:
Model #:
ASR Registration: 1013607
Verticle Cable Ladder: ☑ Yes ☐ No
Tower Paint: ☑ Good ☐ Poor
Tower Type: SELFSUPPORTING
# of Legs: 3
Lighting: NONE
Climbing: ☑ Ladder ☐ Cable
Ground System Type: MULTI-POINT
Ground Sys. Condition: (Comments - Rate) ☐ Great ☑ Good ☐ Average ☐ Poor

Transmission Cable Ground

	Twr. Bottom	Building Entry	Near Antenna	**Comments:**
MW:	YES	YES		
MW:	YES	YES		
MW:	YES	YES		
Coax:	YES	YES		
Coax:	YES	YES		
Coax:	YES	YES		

Roof Mount Access:

Additional Comments:

Site Name	Site Type
CONCORD PD	**DISPATCH**

Survey Date	Surveyors	Observed Position (NAD83)	
9/16/2008	JKNOWLES	Latitude(N)	Longitude(W)

POTS: ☑ Yes ☐ No

Telco T1's:

Has Fiber: ☐ Yes ☐ No

Site Access

Parking Adequate:	☑ Yes ☐ No		
Fencing / Gate:	☑ Yes ☐ No	**Type:**	GOOD, BLOCK
Fire Suppression:	☐ Yes ☑ No	**Type:**	
Smoke Alarm:	☑ Yes ☐ No		
Emergency Lighting:	☑ Yes ☐ No		

Comments:

Site Description

Compound room for additional shelter: NO

Other Tower(s) / Comments: ☐ Yes ☑ No

NO TOWER

Building Design Description

CONFIDENTIAL

Manufacturer:
Model #:
Outside Diminsions: 200 X 150
Prefab./Built on Site: BUIULT ON SITE
Wall Construction: BLOCK/ CONCRETE
Roof Construction:
Floor Composition: TILE
Comments: HOUSES JAIL, DISPATCH, PD DEPARTMENT

Outside Grounding System Description

UNKNOWN

Generator

Manufacturer: **Model #:** **Phase:**
Capacity: **KVA:**

Transfer Switch Manufacturer: **Model #:**
Volts: **Amps:**
Comments: NO ACCESS

Fuel System

Fuel Type: **# of Tanks:**
Tank Size (gallons): **Comments:** NO ACCESS
In-Ground / Above Ground:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 225 **Volts:** 208/120 **Phase:** 3
Comments: ROOM UIS

HVAC

Manufacturer: **Model #:**
Cooling Tons: **# of Units:**
Description: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

Grounding System

System Type: LINEAR
Description: SOME EQUIPMENT GROUNDED

Surge Suppression Devices:
Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

UPS System

Manufacturer: **Model #:**

# of Units: **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Describe Floor Space:

Transmission Line Entry

Total Ports: **# of Ports Used:**

Description / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

HOLES IN FLOOR, CONDUIT IN CEILING

Additional Comments:

Site Name	Site Type
CONSOLIDATED FIRE	DISPATCH/RF/MW

Survey Date	Surveyors	Observed Position (NAD83)	
9/16/2008	JKNOWLES	Latitude(N)	Longitude(W)

POTS: ☑ Yes ☐ No

Telco T1's:

Has Fiber: ☐ Yes ☐ No

Site Access

Parking Adequate: ☑ Yes ☐ No

Fencing / Gate: ☐ Yes ☑ No **Type:**

Fire Suppression: ☑ Yes ☐ No **Type:** SPRINKLERS

Smoke Alarm: ☑ Yes ☐ No

Emergency Lighting: ☑ Yes ☐ No

Comments:

Site Description

Compound room for additional shelter: NO

Other Tower(s) / Comments: ☐ Yes ☑ No
ONE TOWER ON SITE

Building Design Description

CONFIDENTIAL

Manufacturer:
Model #:
Outside Diminsions: 80 X 90
Prefab./Built on Site: BUILT ON SITE
Wall Construction:
Roof Construction:
Floor Composition:
Comments: SECOND RF SHELTER ON SITE, PREFAB

Outside Grounding System Description

Generator

Manufacturer: KOHLER **Model #:** **Phase:**
Capacity: 400 **KVA:** 400

Transfer Switch Manufacturer: **Model #:**
Volts: **Amps:**
Comments:

Fuel System

Fuel Type: DIESEL **# of Tanks:** 2
Tank Size (gallons): 300/1500 **Comments:**
In-Ground / Above Ground: ABOVE/IN-GROUND

TOWER INFORMATION

Tower Height: 100
Manufacturer:
Model #:
ASR Registration:
Verticle Cable Ladder: ☐ Yes ☑ No
Tower Paint: ☑ Good ☐ Poor NO PAINT

Tower Type: SELFSUPPORTING
# of Legs: 3

Lighting: NONE

Climbing: ☐ Ladder ☑ Cable

Ground System Type: MULTI POINT
Ground Sys. Condition: (Comments - Rate) ☐ Great ☑ Good ☐ Average ☐ Poor

Transmission Cable Ground

	Twr. Bottom	Building Entry	Near Antenna	Comments:
MW:	YES	YES		
MW:	YES	YES		
MW:	YES	YES		
Coax:	YES	YES		
Coax:	YES	YES		
Coax:	YES	YES		

Roof Mount Access: 5 ANTENNAS MOUNTED ON THE ROOF AT 25 '

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 225 **Volts:** 120 **Phase:** 1

Comments: ROOM 10 X 15

HVAC

Manufacturer: **Model #:**

Cooling Tons: **# of Units:**

Description: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

Grounding System

System Type:

Description:

Surge Suppression Devices: 2

Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

UPS System

Manufacturer: **Model #:**

# of Units: **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Describe Floor Space:

Transmission Line Entry

Total Ports: **# of Ports Used:**

Description / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

ENTRY IN FORM RISED FLOOR

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 225 **Volts:** 120/240 **Phase:** 1

Comments: 15 X 20 -

HVAC

Manufacturer: **Model #:**

Cooling Tons: **# of Units:**

Description: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

Grounding System

System Type: LINER

Description: EQUIPMENT GROUNDED

Surge Suppression Devices: 1

Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

UPS System

Manufacturer: BEST POWER **Model #:** FE

# of Units: **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

GOOD

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Describe Floor Space:

Transmission Line Entry

Total Ports: **# of Ports Used:**

Description / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

ENTRY INTO ROOM FROM CONDUIT

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 225 **Volts:** 120/240 **Phase:** 1

Comments: 12 X 10

HVAC

Manufacturer: **Model #:**

Cooling Tons: **# of Units:**

Description: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

Grounding System

System Type: LINEAR

Description:

Surge Suppression Devices: 1

Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

UPS System

Manufacturer: **Model #:**

# of Units: **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Describe Floor Space:

Transmission Line Entry

Total Ports: **# of Ports Used:**

Description / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

ENTRY INTO ROOM THROUGH CONDUITS

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 225 **Volts:** 120/240 **Phase:** 1

Comments: 10 X 20 RADIO ROOM

HVAC

Manufacturer: CRISPAIRE **Model #:** AVP60ACA05C

Cooling Tons: **# of Units:** 1

Description: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

Grounding System

System Type: HALO

Description:

Surge Suppression Devices: 1

Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

UPS System

Manufacturer: **Model #:**

# of Units: **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Describe Floor Space:

Transmission Line Entry

Total Ports: 12 **# of Ports Used:** 7

Description / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

12 3" PORTS

Additional Comments:

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA **Transmit Pwr. (watts):**

Model: MTR2000 **ERP (watts):**

Call Sign: **Power Source:**

Transmit (MHz) 154.280 **Receive (MHz):** 154.280

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: **# of Channels:**

Multicoupler Manufacturer: **Model:**

Twr. Top Amp: ☐ Yes ☑ No **Manuf:**

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA **Transmit Pwr. (watts):**

Model: MTR2000 **ERP (watts):**

Call Sign: **Power Source:**

Transmit (MHz) 154.385 **Receive (MHz):** 154.385

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: **# of Channels:**

Multicoupler Manufacturer: **Model:**

Twr. Top Amp: ☐ Yes ☑ No **Manuf:**

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA **Transmit Pwr. (watts):**

Model: MTR2000 **ERP (watts):**

Call Sign: **Power Source:**

Transmit (MHz) 154.205 **Receive (MHz):** 159.735

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: **# of Channels:**

Multicoupler Manufacturer: **Model:**

Twr. Top Amp: ☐ Yes ☑ No **Manuf:**

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MTR2000
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 151.025
Receive (MHz): 150.110
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MTR2000
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 154.205
Receive (MHz): 159.615
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MCS 2000
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 159.345
Receive (MHz): 151.445
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MCS 2000
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 154.995
Receive (MHz): 153.995
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MCS2000
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 155.82
Receive (MHz): 154.385
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MCS
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz)
Receive (MHz): 156.045
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MCS2000
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz)
Receive (MHz): 156.075
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MCS 2000
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 153.8150
Receive (MHz): 153.8150
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MCS
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 896.6875
Receive (MHz): 935.6875
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MCS 2000
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 491.4375
Receive (MHz): 488.4375
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MCS
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 491.9125
Receive (MHz): 488.9125
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:
Manufacturer: HARRIS
Model #: BCK9GKDVM11-4564-1
MW Owner: CC COUNTY
Analog: ☐ Yes ☑ No
Digital, DS1 Capacity
Frequency Band:
Main Ant. Height:
Main Ant. Diameter:
Diversity Ant. Height
Diversity Ant. Dia.:

Multiplexer Manuf.:
Model #:
Multiplexer Type:
Capacity:
Chan. Band Manuf.:
Model #:
Alarm Sys. Manuf.:
Model #:
Alarm Sys. Type:
Dehydrator: ☑ Yes ☐ No
Router / Switch Manufacturer:
Model #:
MW Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

DC Charger Volts:
Amps:

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition (Rate) ☐ Great ☐ Good ☐ Average ☐ Poor
/ Comments:

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: HARRIS

Model #: HRS-CX-11G155M

MW Owner: CC COUNTY

Analog: ☐ Yes ☑ No

Digital, DS1 Capacity

Frequency Band:

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf.: **Model #:**

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Site Name	Site Type
CUMMING PEAK	RF/MW

Survey Date	Surveyors	Observed Position (NAD83)	
9/17/2008	JKNOWLES	Latitude(N)	Longitude(W)

POTS: ☐ Yes ☑ No

Telco T1's:

Has Fiber: ☐ Yes ☑ No

Site Access

Parking Adequate:	☑ Yes ☐ No		
Fencing / Gate:	☑ Yes ☐ No	**Type:**	GOOD, CHAINLINK
Fire Suppression:	☐ Yes ☑ No	**Type:**	
Smoke Alarm:	☑ Yes ☐ No		
Emergency Lighting:	☑ Yes ☐ No		

Comments:

Site Description

Compound room for additional shelter: YES

Other Tower(s) / Comments: ☑ Yes ☐ No

2 TOWERS ON SITE

Building Design Description

CONFIDENTIAL

Manufacturer:
Model #:
Outside Diminsions:
Prefab./Built on Site: BUILT ON SITE
Wall Construction: BLOCK
Roof Construction: METAL
Floor Composition: CONCRETE
Comments:

Outside Grounding System Description

Generator

Manufacturer: KOHLER **Model #:** 50 **Phase:**
Capacity: **KVA:**

Transfer Switch Manufacturer: ONAN **Model #:**
Volts: **Amps:**
Comments:

Fuel System

Fuel Type: PROPANE **# of Tanks:** 1
Tank Size (gallons): 1000 **Comments:**
In-Ground / Above Ground: ABOVE

TOWER INFORMATION

Tower Height: 140 NORTH TOWER
Manufacturer:
Model #:
ASR Registration:
Verticle Cable Ladder: ☑ Yes ☐ No
Tower Paint: ☑ Good ☐ Poor NO PAINT

Tower Type: SELF SUPPORTING
# of Legs: 3

Lighting: NONE

Climbing: ☑ Ladder ☐ Cable

Ground System Type: MULTI-POINT
Ground Sys. Condition: (Comments - Rate) ☐ Great ☑ Good ☐ Average ☐ Poor

Transmission Cable Ground

	Twr. Bottom	Building Entry	Near Antenna	Comments:
MW:	YES	YES		
MW:	YES	YES		
MW:	YES	YES		
Coax:	YES	YES		
Coax:	YES	YES		
Coax:	YES	YES		

Roof Mount Access:

Additional Comments:

TOWER INFORMATION

Tower Height: 140 SOUTH TOWER

Manufacturer:

Model #:

ASR Registration:

Verticle Cable Ladder: ☑ Yes ☐ No

Tower Paint: ☑ Good ☐ Poor NONE

Tower Type: SELF SUPPORTING

# of Legs: 4

Lighting: NONE

Climbing: ☑ Ladder ☐ Cable

Ground System Type: MULTI-POINT

Ground Sys. Condition: (Comments - Rate) ☐ Great ☐ Good ☑ Average ☐ Poor

Transmission Cable Ground

	Twr. Bottom	Building Entry	Near Antenna	Comments:
MW:	YES	YES		
MW:	YES	YES		
MW:	YES	YES		
Coax:	YES	YES		
Coax:	YES	YES		
Coax:	YES	YES		

Roof Mount Access:

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 225 **Volts:** 208/120 **Phase:** 3

Comments: ROOM IS 18 X 20

HVAC

Manufacturer: TRANE **Model #:**

Cooling Tons: **# of Units:** 1

Description: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

TWO WINDOW UNIT ALSO INSTALLED

Grounding System

System Type: LINEAR

Description: GROUND LINES RUN BACK TO BUS BAR

Surge Suppression Devices: 1

Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

UPS System

Manufacturer: **Model #:**

# of Units: **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

ALARMS LINKED TO MW ALARM

Describe Floor Space:

Transmission Line Entry

Total Ports: 34 **# of Ports Used:** 22

Description / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

4" PORTS

Additional Comments:

LAND MOBILE RADIO INFORMATION

Manufacturer: KENWOOD **Transmit Pwr. (watts):**

Model: TKR-740/840 **ERP (watts):**

Call Sign: **Power Source:**

Transmit (MHz) 488.4375 **Receive (MHz):** 491.4375

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: **# of Channels:**

Multicoupler Manufacturer: **Model:**

Twr. Top Amp: ☐ Yes ☑ No **Manuf:**

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA **Transmit Pwr. (watts):**

Model: MTR2000 **ERP (watts):**

Call Sign: **Power Source:**

Transmit (MHz) 160.110 **Receive (MHz):** 151.025

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: **# of Channels:**

Multicoupler Manufacturer: **Model:**

Twr. Top Amp: ☐ Yes ☑ No **Manuf:**

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA **Transmit Pwr. (watts):**

Model: MTR2000 **ERP (watts):**

Call Sign: **Power Source:**

Transmit (MHz) 159.735 **Receive (MHz):** 154.205

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: **# of Channels:**

Multicoupler Manufacturer: **Model:**

Twr. Top Amp: ☐ Yes ☑ No **Manuf:**

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MTR2000
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 154.383
Receive (MHz): 154.383
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MTR2000
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 155.31
Receive (MHz): 155.625
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: KENWOOD
Transmit Pwr. (watts):
Model: TKR-740/840
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 488.9125
Receive (MHz): 491.9125
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MITEK
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 155.040
Receive (MHz): 155.040
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

FAIR

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: QUANTAR
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 855.9875
Receive (MHz): 810.9875
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: QUANTAR
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 868.4125
Receive (MHz): 823.4125
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☐ No
Manuf:

Radio Condition

GOOD

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:
Manufacturer: HARRIS
VERSA T1 LITY
Model #: BCK9GKDVM11-4564-1
MW Owner:
Analog: ☑ Yes ☐ No
Digital, DS1 Capacity
Frequency Band:

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf.: PREMISYS **Model #:** IMACS/800

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: HARRIS — Constellation

Model #: BCK9GKDVM10-12T-2

MW Owner: CC COUNTY

Analog: ☐ Yes ☑ No

Digital, DS1 Capacity

Frequency Band:

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf.: **Model #:**

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: HARRIS — Constellation

Model #: HRS-CX-11G155M

MW Owner: CC COUNTY

Analog: ☐ Yes ☑ No

Digital, DS1 Capacity

Frequency Band:

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf.: **Model #:**

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: HARRIS — Constellation

Model #: HRS5211-0000OC3128QS

MW Owner:

Analog: ☐ Yes ☑ No

Digital, DS1 Capacity

Frequency Band:

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf.: **Model #:**

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Site Name	Site Type
EL CERRITO	**RF/MW**

Survey Date	Surveyors	Observed Position (NAD83)	
9/17/2008	JKNOWLES	Latitude(N)	Longitude(W)

POTS: ☐ Yes ☑ No

Telco T1's:

Has Fiber: ☐ Yes ☑ No

Site Access

Parking Adequate: ☑ Yes ☐ No

Fencing / Gate: ☑ Yes ☐ No **Type:** GOOD, BLOCK WALL-STEAL DOOR

Fire Suppression: ☐ Yes ☑ No **Type:**

Smoke Alarm: ☑ Yes ☐ No

Emergency Lighting: ☑ Yes ☐ No

Comments:

Site Description

Compound room for additional shelter: NO ROOM FOR ADDITIONAL SHEALTER

Other Tower(s) / Comments: ☑ Yes ☐ No

Building Design Description

Manufacturer: FIBREBOND WEST
Model #:
Outside Diminsions: 10 X 20
Prefab./Built on Site: PERFAB
Wall Construction: CONCRETE
Roof Construction:
Floor Composition: TILE
Comments: SMALL COMPOUND CONNECTED PD STATION

Outside Grounding System Description

GROUND LEADING INTO CONCRETE

Generator

Manufacturer: ONAN **Model #:** QUIETSITE II - 482 **Phase:**
Capacity: **KVA:**

Transfer Switch Manufacturer: CUMMINGS POWER GEN **Model #:** LTD-7082299
Volts: 240 **Amps:** 200
Comments:

Fuel System

Fuel Type: DIESEL **# of Tanks:** 1
Tank Size (gallons): **Comments:**
In-Ground / Above Ground: IN-GROUND

TOWER INFORMATION

Tower Height: 60 WITH A BOOM
Manufacturer:
Model #:
ASR Registration:
Verticle Cable Ladder: ☐ Yes ☑ No
Tower Paint: ☑ Good ☐ Poor NO PAINT

Tower Type: MONOPOLE
# of Legs: 1

Lighting: NONE

Climbing: ☐ Ladder ☑ Cable

Ground System Type: SINGLE POINT
Ground Sys. Condition: (Comments - Rate) ☐ Great ☐ Good ☑ Average ☐ Poor

Transmission Cable Ground

	Twr. Bottom	Building Entry	Near Antenna	Comments:
MW:	NO	YES	NO	
MW:				
MW:				
Coax:	NO	YES	NO	
Coax:	NO	YES	NO	
Coax:	NO	YES	NO	

Roof Mount Access:

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 200 **Volts:** 120/240 **Phase:** 1

Comments:

HVAC

Manufacturer: BARD **Model #:** WA301-A05XX2XXI

Cooling Tons: 2.5 **# of Units:** 1

Description: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

WALL MOUNT

Grounding System

System Type: HALO

Description: HALO RING BACK TO BUS BAR

Surge Suppression Devices: 1

Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

UPS System

Manufacturer: BEST POWER **Model #:**

# of Units: 1 **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Describe Floor Space:

Transmission Line Entry

Total Ports: 8 **# of Ports Used:** 4

Description / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

EIGHT 4" PORTS

Additional Comments:

LAND MOBILE RADIO INFORMATION

Manufacturer: MA/COM
Transmit Pwr. (watts):
Model: EDACS MASTR III
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 866.1000
Receive (MHz): 821.1000
TX Antenna Height: 50
RX Antenna Height:
Combiner Manufacturer: dbSPECTRA
# of Channels: 10
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MA/COM
Transmit Pwr. (watts):
Model: EDACS MASTR III
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 866.750
Receive (MHz): 821.750
TX Antenna Height: 50
RX Antenna Height:
Combiner Manufacturer: dbSPECTRA
# of Channels: 10
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer: MA/COM
Transmit Pwr. (watts):
Model: EDACS MASTR III
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 867.100
Receive (MHz): 822.100
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: DBSPECTRA
# of Channels: 10
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MA/COM
Transmit Pwr. (watts):
Model: EDACS MASTR III
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 867.625
Receive (MHz): 822.625
TX Antenna Height: 50

RX Antenna Height:

Combiner Manufacturer: dbSPECTRA
# of Channels: 10
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MA/COM
Transmit Pwr. (watts):
Model: EDACS MASTR III
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 868.6125
Receive (MHz): 823.6125
TX Antenna Height: 50

RX Antenna Height:

Combiner Manufacturer: Dbspectra
# of Channels: 10
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

good

LAND MOBILE RADIO INFORMATION

Manufacturer: MA/COM
Transmit Pwr. (watts):
Model: EDACS MASTR III
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 867.875
Receive (MHz): 822.875
TX Antenna Height: 50

RX Antenna Height:

Combiner Manufacturer: dbSPECTRA
# of Channels: 10
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MA/COM
Transmit Pwr. (watts):

Model: EDACS MASTR III
ERP (watts):

Call Sign:
Power Source:

Transmit (MHz) 860.7125
Receive (MHz): 815.7125

TX Antenna Height: 50

RX Antenna Height:

Combiner Manufacturer: dbSPECTRA
# of Channels: 10

Multicoupler Manufacturer:
Model:

Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MA/COM
Transmit Pwr. (watts):

Model: EDACS MASTR III
ERP (watts):

Call Sign:
Power Source:

Transmit (MHz) 860.7125
Receive (MHz):

TX Antenna Height: 50

RX Antenna Height:

Combiner Manufacturer: dbSPECTRA
# of Channels: 10

Multicoupler Manufacturer:
Model:

Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: GLENAYRE
Western Multiplex

Model #: MW 4T-6

MW Owner: RICHMOND

Analog: ☐ Yes ☑ No

Digital, DS1 Capacity

Frequency Band:

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf.: **Model #:**

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

---

DC Charger Volts: 48 **Amps:** 400

Condition:

Type: WET

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Site Name	Site Type
HIGHLAND	**RF/MW**

Survey Date	Surveyors	Observed Position (NAD83)	
9/16/2008	JKNOWLES	Latitude(N)	Longitude(W)

POTS: ☐ Yes ☑ No

Telco T1's:

Has Fiber: ☐ Yes ☑ No

Site Access

Parking Adequate:	☐ Yes ☑ No		
Fencing / Gate:	☑ Yes ☐ No	**Type:**	CHAINLINK, GOOD
Fire Suppression:	☐ Yes ☑ No	**Type:**	
Smoke Alarm:	☑ Yes ☐ No		
Emergency Lighting:	☐ Yes ☑ No		

Comments: SITE HAS 4 TOWERS

Site Description

Compound room for additional shelter: COUNTY IS ADDING A NEW SHELTER AND TOWER

Other Tower(s) / Comments: ☑ Yes ☐ No

MAIN TOWER IS BEING REPLACED

Building Design Description

Manufacturer: DUPONT BUILDING
Model #:
Outside Diminsions:
Prefab./Built on Site: PREFAB
Wall Construction:
Roof Construction:
Floor Composition:
Comments: 3 BUILDINGS ON SITE, SITE BUILT, 2 PREFAB. 1 FOR MW, 1 FOR RF, 1 CHP

Outside Grounding System Description

GOOD GROUNDING OUTSIDE MW BUILDING, COULD NOT TELL THE OTHERS

Generator

Manufacturer: OLYMPIAN **Model #:** **Phase:**
Capacity: **KVA:**

Transfer Switch Manufacturer: ASCO **Model #:**
Volts: **Amps:**
Comments: SECOND KOHLER 20 GENERATOR

Fuel System

Fuel Type: PROPANE **# of Tanks:** 1
Tank Size (gallons): 1000 **Comments:**
In-Ground / Above Ground: ABOVE

TOWER INFORMATION

Tower Height: 130 DUE FOR REPLACEMENT
Manufacturer:
Model #:
ASR Registration:
Verticle Cable Ladder: ☐ Yes ☑ No
Tower Paint: ☑ Good ☐ Poor NO PAINT

Tower Type: GUYED
# of Legs: 1

Lighting: NONE

Climbing: ☐ Ladder ☑ Cable

Ground System Type: SINGLE-POINT
Ground Sys. Condition: (Comments - Rate) ☐ Great ☐ Good ☑ Average ☐ Poor

Transmission Cable Ground

	Twr. Bottom	Building Entry	Near Antenna	Comments:
MW:	NO	YES		
MW:	NO	YES		
MW:	NO	YES		
Coax:	NO	YES		
Coax:	NO	YES		
Coax:	NO	YES		

Roof Mount Access: MW ANTENNAS MOUNTED ON POLES ON TOP OF BUILDING

Additional Comments:

TOWER INFORMATION

Tower Height: 60

Manufacturer:

Model #:

ASR Registration:

Verticle Cable Ladder: ☐ Yes ☑ No

Tower Paint: ☑ Good ☐ Poor NO PAINT

Tower Type: GUYED

# of Legs: 1

Lighting: NONE

Climbing: ☐ Ladder ☑ Cable

Ground System Type: SINGLE POINT

Ground Sys. Condition: (Comments - Rate) ☐ Great ☐ Good ☑ Average ☐ Poor

Transmission Cable Ground

	Twr. Bottom	Building Entry	Near Antenna	Comments:
MW:	NO	YES		
MW:	NO	YES		
MW:	NO	YES		
Coax:	NO	YES		
Coax:	NO	YES		
Coax:	NO	YES		

Roof Mount Access:

Additional Comments:

TOWER INFORMATION

Tower Height: 40 LARGE TOWER EAST SIDE

Manufacturer:

Model #:

ASR Registration:

Verticle Cable Ladder: ☑ Yes ☐ No

Tower Paint: ☑ Good ☐ Poor NO PAINT

Tower Type: SELF SUPPORTING

# of Legs: 4

Lighting: NONE

Climbing: ☑ Ladder ☐ Cable

Ground System Type: MULTI POINT

Ground Sys. Condition: (Comments - Rate) ☐ Great ☐ Good ☑ Average ☐ Poor

Transmission Cable Ground

	Twr. Bottom	Building Entry	Near Antenna	Comments:
MW:	NO	YES		
MW:	NO	YES		
MW:	NO	YES		
Coax:	NO	YES		
Coax:	NO	YES		
Coax:	NO	YES		

Roof Mount Access:

Additional Comments:

TOWER INFORMATION

Tower Height: 40 WEST TOWER

Manufacturer:

Model #:

ASR Registration:

Verticle Cable Ladder: ☐ Yes ☑ No

Tower Paint: ☑ Good ☐ Poor NO PAINT

Tower Type: SELF SUPPORTING

# of Legs: 3

Lighting: NONE

Climbing: ☐ Ladder ☑ Cable

Ground System Type: MULTI POINT

Ground Sys. Condition: (Comments - Rate) ☐ Great ☐ Good ☑ Average ☐ Poor

Transmission Cable Ground

	Twr. Bottom	Building Entry	Near Antenna	Comments:
MW:	NO	YES		
MW:	NO	YES		
MW:	NO	YES		
Coax:	NO	YES		
Coax:	NO	YES		
Coax:	NO	YES		

Roof Mount Access:

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 225 **Volts:** 208/120 **Phase:** 3

Comments: ROOM 15X 20,

HVAC

Manufacturer: MITSUBISHI **Model #:** PU24EK3

Cooling Tons: **# of Units:**

Description: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

Grounding System

System Type: LINEAR

Description:

Surge Suppression Devices: 1

Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

UPS System

Manufacturer: **Model #:**

# of Units: **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: (Rate) ☐ Great ☐ Good ☑ Average ☐ Poor

DENALECT ALARM

Describe Floor Space: ROOM IS FULL, PLANS FOR A NEW SHELTER AND TOWER

Transmission Line Entry

Total Ports: 32 **# of Ports Used:** 18

Description / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

2 BANKS OF 16 - 4" PORTS

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 200 **Volts:** 240/120 **Phase:** 1

Comments: ROOM 10 X 20

HVAC

Manufacturer: CRISPAIR **Model #:** AVP60ACA05C-1000 CT

Cooling Tons: **# of Units:**

Description: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

Grounding System

System Type: HALO

Description:

Surge Suppression Devices: 1

Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

UPS System

Manufacturer: **Model #:**

# of Units: **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

CONNECTED TO MICROWAVE ALARM

Describe Floor Space: RO0M IS FULL

Transmission Line Entry

Total Ports: 12 **# of Ports Used:** 7

Description / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

12 - 4" PORTS

Additional Comments:

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA **Transmit Pwr. (watts):**

Model: QUANTAR **ERP (watts):**

Call Sign: **Power Source:**

Transmit (MHz) 851.9625 **Receive (MHz):** 806.9625

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: **# of Channels:**

Multicoupler Manufacturer: **Model:**

Twr. Top Amp: ☐ Yes ☑ No **Manuf:**

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA **Transmit Pwr. (watts):**

Model: QUANTAR **ERP (watts):**

Call Sign: **Power Source:**

Transmit (MHz) 855.9875 **Receive (MHz):** 810.9875

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: **# of Channels:**

Multicoupler Manufacturer: **Model:**

Twr. Top Amp: ☐ Yes ☑ No **Manuf:**

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA **Transmit Pwr. (watts):**

Model: **ERP (watts):**

Call Sign: **Power Source:**

Transmit (MHz) 48.48 **Receive (MHz):** 48.48

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: **# of Channels:**

Multicoupler Manufacturer: **Model:**

Twr. Top Amp: ☐ Yes ☑ No **Manuf:**

Radio Condition

FAIR

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MTR2000
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 159.615
Receive (MHz): 154.205
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model:
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 154.385
Receive (MHz): 154.385
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MSR2000
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 153.995
Receive (MHz): 154.995
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

FAIR

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: QUANTAR
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 153.995
Receive (MHz): 154.995
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: KENWOOD
Transmit Pwr. (watts):
Model: TKR740/840
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 488.4375
Receive (MHz): 491.4375
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: KENWOOD
Transmit Pwr. (watts):
Model: TKR 740/840
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 488.9125
Receive (MHz): 491.9125
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 37.12

Receive (MHz): 37.12

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☑ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer:

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz) 37.98

Receive (MHz): 37.98

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☑ No

Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: STARPOINT 6000
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz)
Receive (MHz):
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☐ No
Manuf:

Radio Condition

FAIR, NO FREQS LISTED

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: STARPOINT
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz)
Receive (MHz):
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

FAIR, NO FREQS LISTED

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MTR2000
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 155.19
Receive (MHz): 155.64
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MICOR
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz)
Receive (MHz):
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

FAIR

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:
Manufacturer: HARRIS
Constellation
Model #: BCK9GKDVM11-4564-1
MW Owner:
Analog: ☐ Yes ☑ No
Digital, DS1 Capacity
Frequency Band:

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf.: **Model #:**

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: HARRIS — Constellation

Model #: BCK0GKDVM10-8T-2

MW Owner: CC COUNTY

Analog: ☐ Yes ☑ No

Digital, DS1 Capacity

Frequency Band:

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf.: **Model #:**

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: HARRIS — Constellation

Model #: BCK9GKDVM10-12T-2

MW Owner:

Analog: ☐ Yes ☑ No

Digital, DS1 Capacity

Frequency Band:

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf.: **Model #:**

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: HARRIS — Constellation

Model #: HRS-CX-11G155M

MW Owner:

Analog: ☐ Yes ☐ No

Digital, DS1 Capacity

Frequency Band:

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf.: **Model #:**

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: HARRIS — Constellation

Model #: HRS5211-0000OC3128QS

MW Owner: CC COUNTY

Analog: ☐ Yes ☑ No

Digital, DS1 Capacity

Frequency Band:

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf.: **Model #:**

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: HARRIS — VERSA T1 LITY

Model #: BCK9GKDVM11-4564-1

MW Owner:

Analog: ☐ Yes ☑ No

Digital, DS1 Capacity

Frequency Band:

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf.: **Model #:**

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Site Name	Site Type
KREGOR PEAK	**RF/MW**

Survey Date	Surveyors	Observed Position (NAD83)	
9/18/2008	JKNOWLES	Latitude(N)	Longitude(W)

POTS: ☐ Yes ☑ No

Telco T1's: NO

Has Fiber: ☐ Yes ☑ No

Site Access

Parking Adequate: ☑ Yes ☐ No

Fencing / Gate: ☑ Yes ☐ No **Type:** GOOD CONDITION, CHAIN LINK AROUND

Fire Suppression: ☐ Yes ☑ No **Type:**

Smoke Alarm: ☑ Yes ☐ No

Emergency Lighting: ☐ Yes ☑ No

Comments: TWO BUILDINGS, TWO TOWERS

Site Description

Compound room for additional shelter: NO

Other Tower(s) / Comments: ☑ Yes ☐ No

TWO TOWERS ON SITE

Building Design Description

Manufacturer:
Model #:
Outside Diminsions: 40 X 30, 30 X 25
Prefab./Built on Site: BUILT ON SITE
Wall Construction: BLOCK, CONCRETE
Roof Construction: METAL
Floor Composition: CEMENT
Comments:

Outside Grounding System Description

BUILDING AND TOWERS GROUNDED

Generator

Manufacturer: OLYMPIAN **Model #:** D100P1S **Phase:** 3
Capacity: 100 **KVA:** 100

Transfer Switch Manufacturer: ASCO **Model #:**
Volts: **Amps:**
Comments:

Fuel System

Fuel Type: DIESEL **# of Tanks:** 1
Tank Size (gallons): 1000 **Comments:** CONCRETE
In-Ground / Above Ground: ABOVE

TOWER INFORMATION

Tower Height: 100
Manufacturer:
Model #:
ASR Registration:
Verticle Cable Ladder: ☐ Yes ☐ No
Tower Paint: ☑ Good ☐ Poor NO PAINT

Tower Type: SELF SUPPORTING
# of Legs: 3

Lighting: NONE

Climbing: ☐ Ladder ☑ Cable

Ground System Type: RING
Ground Sys. Condition: (Comments - Rate) ☐ Great ☑ Good ☐ Average ☐ Poor

ALL LEGS GROUNGED

Transmission Cable Ground

	Twr. Bottom	Building Entry	Near Antenna	Comments:
MW:	YES	YES	YES	
MW:	YES	YES	YES	
MW:	YES	YES	YES	
Coax:	YES	YES		
Coax:	YES	YES		
Coax:	YES	NO		

Roof Mount Access:

Additional Comments:

TOWER INFORMATION

Tower Height: 140

Manufacturer:

Model #:

ASR Registration:

Verticle Cable Ladder: ☑ Yes ☐ No

Tower Paint: ☑ Good ☐ Poor NO PAINT

Tower Type: SELF SUPPORTING

# of Legs: 3

Lighting: NONE

Climbing: ☑ Ladder ☐ Cable

Ground System Type: RING

Ground Sys. Condition: (Comments - Rate) ☐ Great ☑ Good ☐ Average ☐ Poor

ALL LEGS GROUNDED

Transmission Cable Ground

	Twr. Bottom	Building Entry	Near Antenna	Comments:
MW:	YES	YES	YES	
MW:	YES	YES	YES	
MW:	YES	YES	YES	
Coax:	YES	YES	YES	
Coax:	YES	YES	YES	
Coax:	YES	YES	YES	

Roof Mount Access:

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 225 **Volts:** 240V-48V **Phase:** 1

Comments: 29 X 19

HVAC

Manufacturer: MARVAIR **Model #:** AVP36ACA05C-1000

Cooling Tons: 3 **# of Units:** 1

Description: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

35000 BTUH UNITS

Grounding System

System Type: HALO

Description: BUSS BAR WITH HALO RING

Surge Suppression Devices: 1

Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

UPS System

Manufacturer: **Model #:**

# of Units: **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

NONE

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

LINKED IN TO THE MICROWAVE ALARMS, SECURITY CAMS

Describe Floor Space: 19 X 29,, THE ROOM HAS LOTS OF OPEN RACKS

Transmission Line Entry

Total Ports: 32 **# of Ports Used:** 6

Description / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

2 BANKS OF SIXTEEN 4" PORTS

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 225 **Volts:** 240-48 **Phase:** 1

Comments: 29 X 19

HVAC

Manufacturer: MARVAIR **Model #:** AVP36ACA05C-1000

Cooling Tons: 3 **# of Units:** 1

Description: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

35000 BTUH

Grounding System

System Type: HALO

Description: BUSS BAR WITH HALO RING

Surge Suppression Devices: 1

Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

UPS System

Manufacturer: **Model #:**

# of Units: **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

NONE

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

LINKED WITH MICROWAVE ALARM, SECTURITY CAMS

Describe Floor Space: ROOM IS NEAR FULL,

Transmission Line Entry

Total Ports: 32 **# of Ports Used:** 11

Description / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

2 BANKS OF SIXTEEN 4" PORTS

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 350 **Volts:** 120/240 **Phase:** 1

Comments: ROOM IS 20 X 20, MANLY MICROWAVE IN THIS ROOM.

HVAC

Manufacturer: BARD **Model #:** WH361-A10XX4XXX

Cooling Tons: 3 **# of Units:** 1

Description: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

WALL MOUNT

Grounding System

System Type: LINER

Description: EQUIPMENT RUNNNING BACK TO BUSS BAR

Surge Suppression Devices: 1

Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

UPS System

Manufacturer: **Model #:**

# of Units: **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

NON

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

LINKED TO MICROWAVE ALARM, SECURITY CAMS

Describe Floor Space: ROOM IS NEAR FULL, OLD GENERATOR ROOM IS OPEN 10 FT X 15 FT SPACE

Transmission Line Entry

Total Ports: 22 **# of Ports Used:** 16

Description / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

PORTS INCLUDE HOLES IN THE BLOCK WALL, A PLATE WITH PORTS, AND A BANK OF EIGHT 4" PORTS

Additional Comments:

LAND MOBILE RADIO INFORMATION

Manufacturer: GE **Transmit Pwr. (watts):**

Model: MASTR II **ERP (watts):**

Call Sign: **Power Source:**

Transmit (MHz) 44.64 **Receive (MHz):** 44.64

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: **# of Channels:**

Multicoupler Manufacturer: **Model:**

Twr. Top Amp: ☐ Yes ☑ No **Manuf:**

Radio Condition

FAIR

LAND MOBILE RADIO INFORMATION

Manufacturer: GE **Transmit Pwr. (watts):**

Model: MASTR II **ERP (watts):**

Call Sign: **Power Source:**

Transmit (MHz) 44.76 **Receive (MHz):** 45.04

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: **# of Channels:**

Multicoupler Manufacturer: **Model:**

Twr. Top Amp: ☐ Yes ☑ No **Manuf:**

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA **Transmit Pwr. (watts):**

Model: MTR2000 **ERP (watts):**

Call Sign: **Power Source:** ARGUS RTS 12/100

Transmit (MHz) 155.25 **Receive (MHz):** 155.955

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: **# of Channels:**

Multicoupler Manufacturer: **Model:**

Twr. Top Amp: ☐ Yes ☑ No **Manuf:**

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MTR2000
ERP (watts):
Call Sign:
Power Source: ARGUS RTS 12/100
Transmit (MHz) 154.385
Receive (MHz): 154.385
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MTR2000
ERP (watts):
Call Sign:
Power Source: ARGUS RTS 12/100
Transmit (MHz) 159.615
Receive (MHz): 154.205
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MTR2000
ERP (watts):
Call Sign:
Power Source: ARGUS RTS 12/100
Transmit (MHz) 155.19
Receive (MHz): 155.64
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MTR2000
ERP (watts):
Call Sign:
Power Source: ARGUS RTS 12/100
Transmit (MHz) 160.110
Receive (MHz): 151.025
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Model: MTR2000
Call Sign:
Transmit (MHz)
TX Antenna Height:
Transmit Pwr. (watts):
ERP (watts):
Power Source: ARGUS RTS 12/100
Receive (MHz):

RX Antenna Height:

Combiner Manufacturer:
Multicoupler Manufacturer:
Twr. Top Amp: ☐ Yes ☑ No
# of Channels:
Model:
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Model: MITREK
Call Sign:
Transmit (MHz) 155.04
TX Antenna Height:
Transmit Pwr. (watts):
ERP (watts):
Power Source: ARGUS RTS 12/100
Receive (MHz): 155.04

RX Antenna Height:

Combiner Manufacturer:
Multicoupler Manufacturer:
Twr. Top Amp: ☐ Yes ☑ No
# of Channels:
Model:
Manuf:

Radio Condition

FAIR

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MICOR
ERP (watts):
Call Sign:
Power Source: ARGUS RTS 12/100
Transmit (MHz) 154.280
Receive (MHz): 154.280
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

FAIR

LAND MOBILE RADIO INFORMATION

Manufacturer: KENWOOD
Transmit Pwr. (watts):
Model:
ERP (watts):
Call Sign:
Power Source: ARGUS RTS 12/100
Transmit (MHz) 488.4375
Receive (MHz): 491.4375
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: KENWOOD

Model:

Call Sign:

Transmit (MHz) 488.9125

TX Antenna Height:

Transmit Pwr. (watts):

ERP (watts):

Power Source: ARGUS RTS 12/100

Receive (MHz): 491.9125

RX Antenna Height:

Combiner Manufacturer:

Multicoupler Manufacturer:

Twr. Top Amp: ☐ Yes ☑ No

# of Channels:

Model:

Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: KENWOOD

Model:

Call Sign:

Transmit (MHz) 488.6625

TX Antenna Height:

Transmit Pwr. (watts):

ERP (watts):

Power Source: ARGUS RTS 12/100

Receive (MHz): 491.6625

RX Antenna Height:

Combiner Manufacturer:

Multicoupler Manufacturer:

Twr. Top Amp: ☐ Yes ☑ No

# of Channels:

Model:

Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: GE
Transmit Pwr. (watts):
Model: MASTR II
ERP (watts):
Call Sign:
Power Source: ARGUS RTS 12/100
Transmit (MHz) 44.96
Receive (MHz): 44.96
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

FAIR

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MSF 5000
ERP (watts):
Call Sign:
Power Source: ARGUS RTS 12/100
Transmit (MHz) 935.6875
Receive (MHz): 896.6875
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MSF 5000
ERP (watts):
Call Sign:
Power Source: ARGUS RTS 12/100
Transmit (MHz) 858.9875
Receive (MHz): 8139875
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: Harris
Constellation
Model #: BCK9GKDVM11-4564-1
MW Owner: cc county
Analog: ☐ Yes ☑ No
Digital, DS1 Capacity
Frequency Band:
Main Ant. Height:
Main Ant. Diameter:
Diversity Ant. Height
Diversity Ant. Dia.:

Multiplexer Manuf.:
Model #:
Multiplexer Type:
Capacity:
Chan. Band Manuf.: PREMISYS
Model #: IMACS/800
Alarm Sys. Manuf.:
Model #:
Alarm Sys. Type:
Dehydrator: ☑ Yes ☐ No
Router / Switch Manufacturer:
Model #:
MW Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

DC Charger Volts:
Amps:

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition (Rate) ☐ Great ☐ Good ☐ Average ☐ Poor
/ Comments:

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: HARRIS

Model #: CONSTELLATION

MW Owner: CC COUNTY

Analog: ☐ Yes ☑ No

Digital, DS1 Capacity 3-DS3

Frequency Band:

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf.: **Model #:**

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☐ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: HARRIS — Constellation

Model #: BCK0GKDVM10-8T-2

MW Owner: CC COUNTY

Analog: ☐ Yes ☑ No

Digital, DS1 Capacity

Frequency Band:

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf.: **Model #:**

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: HARRIS — Constellation

Model #: BCK9GKDVM10-12T-2

MW Owner: CC COUNTY

Analog: ☐ Yes ☑ No

Digital, DS1 Capacity

Frequency Band:

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf.: **Model #:**

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: HARRIS

Model #: HRS-CX-11G155M

MW Owner: CC COUNTY

Analog: ☐ Yes ☑ No

Digital, DS1 Capacity

Frequency Band:

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf.: **Model #:**

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Site Name	Site Type
LOS VAQUEROS	RF

Survey Date	Surveyors	Observed Position (NAD83)	
9/16/2008	Jknowles	Latitude(N)	Longitude(W)

POTS: ☐ Yes ☑ No

Telco T1's: NO

Has Fiber: ☐ Yes ☑ No

Site Access

Parking Adequate:	☑ Yes ☐ No		
Fencing / Gate:	☐ Yes ☑ No	**Type:**	
Fire Suppression:	☐ Yes ☑ No	**Type:**	
Smoke Alarm:	☐ Yes ☑ No		
Emergency Lighting:	☐ Yes ☑ No		

Comments: Site does not have a tower

Site Description

Compound room for additional shelter:

Other Tower(s) / Comments: ☐ Yes ☐ No

Building Design Description

CONFIDENTIAL

Manufacturer:
Model #:
Outside Diminsions:
Prefab./Built on Site: built on site
Wall Construction: metal
Roof Construction: concrete
Floor Composition:
Comments:

Outside Grounding System Description

one rod driven into the ground

Generator

Manufacturer: **Model #:** **Phase:**

Capacity: **KVA:**

Transfer Switch Manufacturer: **Model #:**

Volts: **Amps:**

Comments: none

Fuel System

Fuel Type: **# of Tanks:**

Tank Size (gallons): **Comments:** none

In-Ground / Above Ground:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 125 **Volts:** 240/120 **Phase:** 1

Comments: small panel, ROOM 35x50

HVAC

Manufacturer: **Model #:**

Cooling Tons: **# of Units:**

Description: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

no AC, just 2 fans

Grounding System

System Type: liner

Description: all equipment connected to a 10 gage line

Surge Suppression Devices: 2

Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

UPS System

Manufacturer: **Model #:**

# of Units: **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

none

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

Describe Floor Space: none

Transmission Line Entry

Total Ports: **# of Ports Used:**

Description / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

transmission lines run through holes a top of metal wall

Additional Comments:

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA **Transmit Pwr. (watts):**

Model: gr400 **ERP (watts):**

Call Sign: **Power Source:** Astron PS

Transmit (MHz) 151.58 **Receive (MHz):** 158.19

TX Antenna Height: 15 ft

RX Antenna Height: 15 ft

Combiner Manufacturer: Telewave **# of Channels:** 2

Multicoupler Manufacturer: **Model:**

Twr. Top Amp: ☐ Yes ☑ No **Manuf:**

Radio Condition

good

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: RKR1225
ERP (watts):
Call Sign:
Power Source: ASTRON PS
Transmit (MHz) 158.19
Receive (MHz): 159.645
TX Antenna Height: 15FT

RX Antenna Height: 15FT

Combiner Manufacturer: INWAVE
# of Channels: 2
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MTR2000
ERP (watts):
Call Sign:
Power Source: ASTRON PS
Transmit (MHz)
Receive (MHz): 155.64
TX Antenna Height:

RX Antenna Height: 15

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

RX ONLY

Site Name	Site Type
MARSH CREEK DF	RF

Survey Date	Surveyors	Observed Position (NAD83)	
		Latitude(N)	Longitude(W)
9/16/2008	JKNOWLES	37 53.695	121 51.810

POTS: ☐ Yes ☑ No

Telco T1's: NO

Has Fiber: ☐ Yes ☑ No

Site Access

Parking Adequate:	☑ Yes ☐ No	
Fencing / Gate:	☐ Yes ☑ No	**Type:**
Fire Suppression:	☐ Yes ☑ No	**Type:**
Smoke Alarm:	☐ Yes ☑ No	
Emergency Lighting:	☐ Yes ☑ No	

Comments: NEAR COUNTY SO SHOOTING RANGE AND COUNTY FARM.

Site Description

Compound room for additional shelter: YES

Other Tower(s) / Comments: ☑ Yes ☐ No

MAYBE ROOM FOR ANOTHER TOWER

Building Design Description

Manufacturer:
Model #:
Outside Diminsions: 15X 10
Prefab./Built on Site: PREFAB
Wall Construction: METAL
Roof Construction: METAL
Floor Composition: CEMENTE
Comments: BUILDING IS OLD AND SMALL

Outside Grounding System Description

NO OUTSIDE GROUND

Generator

Manufacturer: **Model #:** **Phase:**
Capacity: **KVA:**

Transfer Switch Manufacturer: **Model #:**
Volts: **Amps:**
Comments: NONE

Fuel System

Fuel Type: **# of Tanks:**
Tank Size (gallons): **Comments:** NONE
In-Ground / Above Ground:

TOWER INFORMATION

Tower Height: 100 SMALL TOWER, MW ANTENNA BEING INSTALLED ON
Manufacturer:
Model #:
ASR Registration:
Verticle Cable Ladder: ☑ Yes ☐ No
Tower Paint: ☑ Good ☐ Poor NO PAINT

Tower Type: GUYED
# of Legs: 3

Lighting: NONE

Climbing: ☐ Ladder ☑ Cable

Ground System Type: TOWER NOT GROUNDED
Ground Sys. Condition: (Comments - Rate) ☐ Great ☐ Good ☐ Average ☑ Poor

Transmission Cable Ground

	Twr. Bottom	Building Entry	Near Antenna	Comments:
MW:				NONE
MW:				NONE
MW:				NONE
Coax:				NONE
Coax:				NONE
Coax:				NONE

Roof Mount Access:

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 40 **Volts:** 120 **Phase:** 1

Comments: ROOM 14 X 9

HVAC

Manufacturer: **Model #:**

Cooling Tons: **# of Units:**

Description: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

DOES NOT HAVE HVAC

Grounding System

System Type: NONE

Description: NONE

Surge Suppression Devices: 2

Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

UPS System

Manufacturer: **Model #:**

# of Units: **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

NONE

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

NONE

Describe Floor Space: SHELTER ONLY HAS ONE CABINET IN IT NOW.

Transmission Line Entry

Total Ports: 1 **# of Ports Used:** 1

Description / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

other ports are hole punched into building

Additional Comments:

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer:

Model #:

MW Owner:

Analog: ☐ Yes ☐ No

Digital, DS1 Capacity

Frequency Band:

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf.: **Model #:**

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☐ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Site Name	Site Type
NICHOL KNOB	RF/MW

Survey Date	Surveyors	Observed Position (NAD83)	
9/17/2008	JKNOWLES	Latitude(N)	Longitude(W)

POTS: ☐ Yes ☑ No

Telco T1's:

Has Fiber: ☐ Yes ☑ No

Site Access

Parking Adequate: ☑ Yes ☐ No

Fencing / Gate: ☐ Yes ☑ No **Type:**

Fire Suppression: ☐ Yes ☑ No **Type:**

Smoke Alarm: ☑ Yes ☐ No

Emergency Lighting: ☐ Yes ☑ No

Comments: EQUIPMENT LOCATED UNDER GROUND

Site Description

Compound room for additional shelter: MAYBE POSSIBLE TO PUT IN A 2ND UNDER GROUND ROOM

Other Tower(s) / Comments: ☐ Yes ☑ No

ONE MONOPOLE TOWER

Building Design Description

Manufacturer:
Model #:
Outside Diminsions:
Prefab./Built on Site: prefab
Wall Construction: CONCRETE
Roof Construction: CONCRETE
Floor Composition: CONCRETE
Comments: BUILDING UNDER GROUND

Outside Grounding System Description

UNKNOWN, TOWER GROUNDED

Generator

Manufacturer: **Model #:** **Phase:**
Capacity: **KVA:**

Transfer Switch Manufacturer: **Model #:**
Volts: **Amps:**
Comments: UNDER GROUND, DID NOT HAVE ACCESS

Fuel System

Fuel Type: **# of Tanks:**
Tank Size (gallons): **Comments:** UNDER GROUND, DID NOT HAVE ACCESS
In-Ground / Above Ground:

TOWER INFORMATION

Tower Height: 50 PLATFORM AT TOP
Manufacturer:
Model #:
ASR Registration:
Verticle Cable Ladder: ☑ Yes ☐ No
Tower Paint: ☑ Good ☐ Poor GREEN

Tower Type: MONOPOLE
# of Legs: 1

Lighting: NONE

Climbing: ☐ Ladder ☑ Cable

Ground System Type: SINGLE POINT
Ground Sys. Condition: (Comments - Rate) ☐ Great ☐ Good ☐ Average ☑ Poor

TOWER GROUND NOT ATTACHED

Transmission Cable Ground

	Twr. Bottom	Building Entry	Near Antenna	Comments:
MW:				
MW:				
MW:				
Coax:				
Coax:				
Coax:				

Roof Mount Access:

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 200 **Volts:** 120/240 **Phase:** 1

Comments: ROOM IS 12 X 20, VERY LITTLE SPACE LEFT

HVAC

Manufacturer: **Model #:**

Cooling Tons: **# of Units:**

Description: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

REQUIRES TWO PORTABLE AC UNIT TO COOL ROOM, NOT SURE IF PERMANT AC IS INSTALLED

Grounding System

System Type: HALO

Description: HALO ATTACHED TO WALL, EQUIPMENT NOT ATTACHED, TRANMISSION LINES NOT GROUNDED AT ENTRY OF BUILDING

Surge Suppression Devices: 1

Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

UPS System

Manufacturer: BEST POWER **Model #:** FERRUPS

# of Units: 1 **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

Richmond equipment only

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Describe Floor Space:

Transmission Line Entry

Total Ports: 12 **# of Ports Used:** 10

Description / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

4" ports

Additional Comments:

LAND MOBILE RADIO INFORMATION

Manufacturer: MA/COM **Transmit Pwr. (watts):**

Model: EDACS MASTR III **ERP (watts):**

Call Sign: **Power Source:**

Transmit (MHz) 866.100 **Receive (MHz):** 821.100

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: dbSPECTRA **# of Channels:** 10

Multicoupler Manufacturer: **Model:**

Twr. Top Amp: ☐ Yes ☑ No **Manuf:**

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MA/COM **Transmit Pwr. (watts):**

Model: EDACS MASTR III **ERP (watts):**

Call Sign: **Power Source:**

Transmit (MHz) 866.750 **Receive (MHz):** 821.750

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: dbSPECTRA **# of Channels:** 10

Multicoupler Manufacturer: **Model:**

Twr. Top Amp: ☐ Yes ☐ No **Manuf:**

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MA/COM
Transmit Pwr. (watts):
Model: EDACS MASTR III
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 867.1000
Receive (MHz): 822.1000
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: dbSPECTRA
# of Channels: 10
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MA/COM
Transmit Pwr. (watts):
Model: EDACS MASTR III
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 867.6250
Receive (MHz): 822.6250
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: dbSPECTRA
# of Channels: 10
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MA/COM
Transmit Pwr. (watts):
Model: EDACS MASTR III
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 860.6125
Receive (MHz): 823.6125
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: dbSPECTRA
# of Channels: 10
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MA/COM
Transmit Pwr. (watts):
Model: EDACS MASTR III
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 867.875
Receive (MHz): 822.875
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: dbSPECTRA
# of Channels: 10
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MA/COM
Transmit Pwr. (watts):
Model: EDACS MASTR III
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 858.7125
Receive (MHz): 813.7125
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: dbSPECTRA
# of Channels: 10
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MA/COM
Transmit Pwr. (watts):
Model: EDACS MASTR III
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 860.7125
Receive (MHz): 815.7125
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: bdSPECTRA
# of Channels: 10
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: KENWOOD
Transmit Pwr. (watts):
Model: TKR 740/840
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 488.4375
Receive (MHz): 491.4375
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: KENWOOD
Transmit Pwr. (watts):
Model: TKR 740/840
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 488.9125
Receive (MHz): 491.9125
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MTR2000
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 154.385
Receive (MHz): 154.385
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

good

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MTR 2000
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 159.735
Receive (MHz): 154.205
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MTR2000
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 155.31
Receive (MHz): 155.625
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: QUANTAR
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 851.9625
Receive (MHz): 806.9625
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: QUANTAR
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 859.4625
Receive (MHz): 814.4625
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: QUANTAR
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 855.9875
Receive (MHz): 810.9875
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:
Manufacturer: GLENAYRE
Model #: 4T6
MW Owner: RICHMOND
Analog: ☐ Yes ☑ No
Digital, DS1 Capacity
Frequency Band:

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: GLENAYRE **Model #:** MUX 46200

Multiplexer Type: **Capacity:**

Chan. Band Manuf.: **Model #:**

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: HARRIS

Model #: HRS5211-0000OC3128QS

MW Owner: CC COUNTY

Analog: ☐ Yes ☑ No

Digital, DS1 Capacity

Frequency Band:

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf.: **Model #:**

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: HARRIS — Constellation

Model #: HRS-CX-11G155M

MW Owner:

Analog: ☐ Yes ☐ No

Digital, DS1 Capacity

Frequency Band:

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf.: **Model #:**

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: HARRIS

Model #: BCK9GKDVM11-4564-1

MW Owner: CC COUNTY

Analog: ☐ Yes ☑ No

Digital, DS1 Capacity

Frequency Band:

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf.: **Model #:**

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Site Name	Site Type
OLD FIRE STATION 53	**RF**

Survey Date	Surveyors	Observed Position (NAD83)	
9/16/2008	JKNOWLES	Latitude(N)	Longitude(W)

POTS: ☐ Yes ☑ No

Telco T1's: N

Has Fiber: ☐ Yes ☑ No

Site Access

Parking Adequate: ☑ Yes ☐ No

Fencing / Gate: ☐ Yes ☑ No **Type:**

Fire Suppression: ☐ Yes ☑ No **Type:**

Smoke Alarm: ☐ Yes ☑ No

Emergency Lighting: ☐ Yes ☑ No

Comments: Old fire station, used mainly for storage now.

Site Description

Compound room for additional shelter: no room for additional shelter

Other Tower(s) / Comments: ☐ Yes ☑ No

Building Design Description

CONFIDENTIAL

Manufacturer:
Model #:
Outside Diminsions: 60 x 40
Prefab./Built on Site: built on site
Wall Construction: metal
Roof Construction: metal
Floor Composition: concrete
Comments:

Outside Grounding System Description

ground at one spot

Generator

Manufacturer: **Model #:** **Phase:**

Capacity: **KVA:**

Transfer Switch Manufacturer: **Model #:**

Volts: **Amps:**

Comments: none

Fuel System

Fuel Type: **# of Tanks:**

Tank Size (gallons): **Comments:** none

In-Ground / Above Ground:

TOWER INFORMATION

Tower Height: 50

Manufacturer:

Model #:

ASR Registration:

Verticle Cable Ladder: ☐ Yes ☑ No

Tower Paint: ☑ Good ☐ Poor no paint

Tower Type: self supporting

# of Legs: 3

Lighting:

Climbing: ☐ Ladder ☑ Cable

Ground System Type: none

Ground Sys. Condition: (Comments - Rate) ☐ Great ☐ Good ☐ Average ☑ Poor

no ground to tower

Transmission Cable Ground

	Twr. Bottom	Building Entry	Near Antenna	Comments:
MW:				NONE
MW:				NONE
MW:				NONE
Coax:				NONE
Coax:				NONE
Coax:				NONE

Roof Mount Access:

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 225 **Volts:** 240/120 **Phase:** 1

Comments: PANEL FOR WHOLE BUILDING ROOM IS 20 X 20

HVAC

Manufacturer: **Model #:**

Cooling Tons: **# of Units:**

Description: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

WINDOW UNIT, ROOM WAS WARMER THAN SHOUD BE. AC WAS NOT ON.

Grounding System

System Type: NONE

Description: NO GROUNDING TO EQUIPMENT SEEN

Surge Suppression Devices: 2

Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

UPS System

Manufacturer: **Model #:**

# of Units: **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

NONE

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

Describe Floor Space: NONE

Transmission Line Entry

Total Ports: **# of Ports Used:**

Description / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

TRANSMISSION LINES ENTER BUILDING AT TOP OF WALL NEAR ROOF.

Additional Comments:

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA **Transmit Pwr. (watts):**

Model: MTR2000 **ERP (watts):**

Call Sign: **Power Source:**

Transmit (MHz) **Receive (MHz):** 154.205

TX Antenna Height:

RX Antenna Height: 50

Combiner Manufacturer: **# of Channels:**

Multicoupler Manufacturer: **Model:**

Twr. Top Amp: ☐ Yes ☐ No **Manuf:**

Radio Condition

GOOD,

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA **Transmit Pwr. (watts):**

Model: MTR2000 **ERP (watts):**

Call Sign: **Power Source:**

Transmit (MHz) **Receive (MHz):** 155.640

TX Antenna Height:

RX Antenna Height: 50

Combiner Manufacturer: **# of Channels:**

Multicoupler Manufacturer: **Model:**

Twr. Top Amp: ☐ Yes ☐ No **Manuf:**

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):

Model: CDM1250
ERP (watts):

Call Sign:
Power Source:

Transmit (MHz)
Receive (MHz):

TX Antenna Height: 45

RX Antenna Height:

Combiner Manufacturer:
# of Channels:

Multicoupler Manufacturer:
Model:

Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

MOBILE, GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):

Model: GM300
ERP (watts):

Call Sign:
Power Source:

Transmit (MHz)
Receive (MHz):

TX Antenna Height: 45 FT

RX Antenna Height:

Combiner Manufacturer:
# of Channels:

Multicoupler Manufacturer:
Model:

Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD,

Site Name	Site Type
PEARL REERVIOR	**RF/MW**

Survey Date	Surveyors	Observed Position (NAD83)	
9/17/2008	JKNOWLES	Latitude(N)	Longitude(W)

POTS: ☐ Yes ☐ No

Telco T1's:

Has Fiber: ☐ Yes ☐ No

Site Access

Parking Adequate:	☐ Yes	☑ No	
Fencing / Gate:	☑ Yes	☐ No	**Type:** CHAINLINK, GOOD CONDITION
Fire Suppression:	☐ Yes	☐ No	**Type:**
Smoke Alarm:	☐ Yes	☐ No	
Emergency Lighting:	☐ Yes	☐ No	

Comments: DID NOT HAVE ACCESS TO BUILDING, CITY OF RICHMOND SITE

Site Description

Compound room for additional shelter: NO

Other Tower(s) / Comments: ☐ Yes ☑ No

Building Design Description

Manufacturer: Comm. Building of America
Model #:
Outside Diminsions: 14 x 20
Prefab./Built on Site: PREFAB
Wall Construction:
Roof Construction:
Floor Composition:
Comments:

Outside Grounding System Description

DID NOT SEE OUTSIDE GROUNDING

Generator

Manufacturer: ONAN **Model #:** QUIETSITE II **Phase:**
Capacity: **KVA:**

Transfer Switch Manufacturer: **Model #:**
Volts: **Amps:**
Comments: DID NOT HAVE ACCESS

Fuel System

Fuel Type: DIESEL **# of Tanks:**
Tank Size (gallons): **Comments:**
In-Ground / Above Ground: IN-GROUND

TOWER INFORMATION

Tower Height: 60
Manufacturer:
Model #:
ASR Registration:
Verticle Cable Ladder: ☑ Yes ☐ No
Tower Paint: ☑ Good ☐ Poor NO PAINT
Tower Type: SELF SUPPORTING
# of Legs: 3
Lighting: NONE
Climbing: ☑ Ladder ☐ Cable
Ground System Type: MUITLI-POINT
Ground Sys. Condition: (Comments - Rate) ☐ Great ☐ Good ☑ Average ☐ Poor

EACH LEG GROUNDED

Transmission Cable Ground

	Twr. Bottom	Building Entry	Near Antenna	**Comments:**
MW:	Y			
MW:	Y			
MW:	Y			
Coax:	Y			
Coax:	Y			
Coax:	Y			

Roof Mount Access:

Additional Comments:

Site Name	Site Type
PETERS APOLLO	**PURPOSED**

Survey Date	Surveyors	Observed Position (NAD83)	
9/18/2008	JKNOWLES	Latitude(N)	Longitude(W)

POTS: ☐ Yes ☑ No

Telco T1's:

Has Fiber: ☐ Yes ☑ No

Site Access

Parking Adequate: ☐ Yes ☑ No

Fencing / Gate: ☐ Yes ☑ No **Type:**

Fire Suppression: ☐ Yes ☑ No **Type:**

Smoke Alarm: ☐ Yes ☑ No

Emergency Lighting: ☐ Yes ☑ No

Comments: NO SHELTER AT SITE

Site Description

Compound room for additional shelter: ROOM FOR SHELTER

Other Tower(s) / Comments: ☐ Yes ☑ No

NO TOWER AT SITE

Building Design Description

Manufacturer:

Model #:

Outside Diminsions:

Prefab./Built on Site:

Wall Construction:

Roof Construction:

Floor Composition:

Comments:

Outside Grounding System Description

Generator		
Manufacturer:	**Model #:**	**Phase:**
Capacity:	**KVA:**	

Transfer Switch Manufacturer:	**Model #:**
Volts:	**Amps:**
Comments:	

Fuel System	
Fuel Type:	**# of Tanks:**
Tank Size (gallons):	**Comments:**
In-Ground / Above Ground:	

Site Name	Site Type
PINOLE PD	DISPATCH

Survey Date	Surveyors	Observed Position (NAD83)	
9/17/2008	JKNOWLES	Latitude(N)	Longitude(W)

POTS: ☑ Yes ☐ No

Telco T1's:

Has Fiber: ☐ Yes ☐ No

Site Access

Parking Adequate:	☑ Yes ☐ No		
Fencing / Gate:	☐ Yes ☑ No	**Type:**	
Fire Suppression:	☐ Yes ☑ No	**Type:**	
Smoke Alarm:	☑ Yes ☐ No		
Emergency Lighting:	☑ Yes ☐ No		

Comments:

Site Description

Compound room for additional shelter:

Other Tower(s) / Comments: ☐ Yes ☑ No

Building Design Description

CONFIDENTIAL

Manufacturer:
Model #:
Outside Diminsions: 200 X 75
Prefab./Built on Site: BUILT ON SITE
Wall Construction: BLOCK / CONCRETE
Roof Construction:
Floor Composition: TILE
Comments:

Outside Grounding System Description

Generator

Manufacturer: CK POWER **Model #:** CK-90D **Phase:**
Capacity: **KVA:**

Transfer Switch Manufacturer: ONAN **Model #:**
Volts: **Amps:**
Comments:

Fuel System

Fuel Type: DIESEL **# of Tanks:** 1
Tank Size (gallons): **Comments:**
In-Ground / Above Ground: ABOVE

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** **Volts:** **Phase:**
Comments: NO ELECTRICAL PANEL IN ROOM

HVAC

Manufacturer: **Model #:**
Cooling Tons: **# of Units:**
Description: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor
ROOM IS COOL

Grounding System

System Type:
Description: NO GROUNDING

Surge Suppression Devices: 2
Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

UPS System

Manufacturer: **Model #:**

# of Units: **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

---

Describe Floor Space:

Transmission Line Entry

Total Ports: **# of Ports Used:**

Description / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

ENTRY THROUGH CONDUIT

Additional Comments:

Site Name	Site Type
PLEASANT HILL PD	DISPATCH/RF

Survey Date	Surveyors	Observed Position (NAD83)	
9/15/2008	JKNOWLES	Latitude(N)	Longitude(W)

POTS: ☑ Yes ☐ No

Telco T1's: YES

Has Fiber: ☑ Yes ☐ No

Site Access

Parking Adequate: ☑ Yes ☐ No

Fencing / Gate: ☐ Yes ☑ No **Type:**

Fire Suppression: ☐ Yes ☑ No **Type:**

Smoke Alarm: ☑ Yes ☐ No

Emergency Lighting: ☑ Yes ☐ No

Comments:

Site Description

Compound room for additional shelter: NO

Other Tower(s) / Comments: ☐ Yes ☑ No

ONE TOWER ON SITE

Building Design Description

CONFIDENTIAL

Manufacturer:
Model #:
Outside Diminsions:
Prefab./Built on Site: BUILT ON SITE
Wall Construction: BOLCK/CONCRETE
Roof Construction:
Floor Composition: TILE OVER CONCRETE
Comments:

Outside Grounding System Description

UNKNOWN

Generator

Manufacturer: MQ POWER **Model #:** KD200V **Phase:**
Capacity: 250 **KVA:** 200

Transfer Switch Manufacturer: **Model #:**
Volts: **Amps:**
Comments:

Fuel System

Fuel Type: DIESEL **# of Tanks:** 1
Tank Size (gallons): **Comments:**
In-Ground / Above Ground: ABOVE

TOWER INFORMATION

Tower Height: 100
Manufacturer:
Model #:
ASR Registration:
Verticle Cable Ladder: ☑ Yes ☐ No
Tower Paint: ☑ Good ☐ Poor NO PAINT

Tower Type: MONOPOLE
# of Legs: 1

Lighting:

Climbing: ☐ Ladder ☑ Cable

Ground System Type: SINGLEPOINT
Ground Sys. Condition: (Comments - Rate) ☐ Great ☐ Good ☑ Average ☐ Poor

Transmission Cable Ground

	Twr. Bottom	Building Entry	Near Antenna	Comments:
MW:				
MW:				
MW:				
Coax:				
Coax:				
Coax:				

Roof Mount Access:

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 225 **Volts:** 120/240 **Phase:** 1

Comments: ROOM -9 X 12

HVAC

Manufacturer: **Model #:**

Cooling Tons: **# of Units:**

Description: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

Grounding System

System Type: LINEAR

Description: EQUIPMENT IS GROUNDED

Surge Suppression Devices: 1

Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

UPS System

Manufacturer: **Model #:**

# of Units: **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Describe Floor Space:

Transmission Line Entry

Total Ports: **# of Ports Used:**

Description / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

ENTRY INTO ROOM BY CONDUIT

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 225 **Volts:** 120/240 **Phase:** 1

Comments: ROOM IS 10 X 14- SEVER ROOM

HVAC

Manufacturer: **Model #:**

Cooling Tons: **# of Units:**

Description: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

Grounding System

System Type:

Description: NO GROUNDING

Surge Suppression Devices: 2

Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

UPS System

Manufacturer: **Model #:**

# of Units: **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Describe Floor Space:

Transmission Line Entry

Total Ports: **# of Ports Used:**

Description / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

ENTRY IN TO ROOM FROM CONDUIT

Additional Comments:

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA **Transmit Pwr. (watts):**

Model: QUANTAR **ERP (watts):**

Call Sign: **Power Source:**

Transmit (MHz) 453.175 **Receive (MHz):** 460.100

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: **# of Channels:**

Multicoupler Manufacturer: **Model:**

Twr. Top Amp: ☐ Yes ☑ No **Manuf:**

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA **Transmit Pwr. (watts):**

Model: QUANTAR **ERP (watts):**

Call Sign: **Power Source:**

Transmit (MHz) 453.600 **Receive (MHz):** 460.500

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: **# of Channels:**

Multicoupler Manufacturer: **Model:**

Twr. Top Amp: ☐ Yes ☑ No **Manuf:**

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Model: QUANTAR
Call Sign:
Transmit (MHz)
TX Antenna Height:
Transmit Pwr. (watts):
ERP (watts):
Power Source:
Receive (MHz): 460.025

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Model: QUANTAR
Call Sign:
Transmit (MHz)
TX Antenna Height:
Transmit Pwr. (watts):
ERP (watts):
Power Source:
Receive (MHz):

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

FREQ NOT LISTED

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: QUANTAR
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz)
Receive (MHz):
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

FREQ NOT LISTED

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: QUANTAR
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz)
Receive (MHz):
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

FREQ NOT LISTED

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):

Model: MTR2000
ERP (watts):

Call Sign:
Power Source:

Transmit (MHz)
Receive (MHz):

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:

Multicoupler Manufacturer:
Model:

Twr. Top Amp: ☐ Yes ☐ No
Manuf:

Radio Condition

FREQ NOT LISTED

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):

Model: MTR2000
ERP (watts):

Call Sign:
Power Source:

Transmit (MHz)
Receive (MHz):

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:

Multicoupler Manufacturer:
Model:

Twr. Top Amp: ☐ Yes ☐ No
Manuf:

Radio Condition

FREQ NOT LISTED

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):

Model: MTR2000
ERP (watts):

Call Sign:
Power Source:

Transmit (MHz)
Receive (MHz):

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:

Multicoupler Manufacturer:
Model:

Twr. Top Amp: ☐ Yes ☐ No
Manuf:

Radio Condition

FREQ NOT LISTED

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):

Model: MTR2000
ERP (watts):

Call Sign:
Power Source:

Transmit (MHz)
Receive (MHz):

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:

Multicoupler Manufacturer:
Model:

Twr. Top Amp: ☐ Yes ☐ No
Manuf:

Radio Condition

FREQ NOT LISTED

LAND MOBILE RADIO INFORMATION

Manufacturer:	MOTOTROLA	**Transmit Pwr. (watts):**	
Model:	MTR2000	**ERP (watts):**	
Call Sign:		**Power Source:**	
Transmit (MHz)		**Receive (MHz):**	
TX Antenna Height:			

RX Antenna Height:

Combiner Manufacturer:		**# of Channels:**	
Multicoupler Manufacturer:		**Model:**	
Twr. Top Amp:	☐ Yes ☐ No	**Manuf:**	

Radio Condition

FREQ NOT LISTED

Site Name	Site Type
RICHMOND PD/FD	DISPATCH

Survey Date	Surveyors	Observed Position (NAD83)	
9/17/2008	JKNOWLES	Latitude(N)	Longitude(W)

POTS: ☑ Yes ☐ No

Telco T1's:

Has Fiber: ☐ Yes ☐ No

Site Access

Parking Adequate: ☑ Yes ☐ No

Fencing / Gate: ☐ Yes ☑ No **Type:** WALLED IN COURTYARD IN BACK

Fire Suppression: ☐ Yes ☑ No **Type:**

Smoke Alarm: ☑ Yes ☐ No

Emergency Lighting: ☑ Yes ☐ No

Comments:

Site Description

Compound room for additional shelter:

Other Tower(s) / Comments: ☐ Yes ☑ No

MICROWAVE ANTENNAS ON BUILDING DOWN THE STREET

Building Design Description

Manufacturer:
Model #:
Outside Diminsions: 80 X 50
Prefab./Built on Site: BUILT ON SITE
Wall Construction: BLOCK
Roof Construction:
Floor Composition: TILE
Comments:

Outside Grounding System Description

UNKNOWN

Generator

Manufacturer: ONAN **Model #:** GENSET 485 **Phase:**
Capacity: **KVA:**

Transfer Switch Manufacturer: ONAN **Model #:**
Volts: **Amps:**
Comments:

Fuel System

Fuel Type: DIESEL **# of Tanks:** 1
Tank Size (gallons): **Comments:** PEDESTAL TANK
In-Ground / Above Ground: ABOVE

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 450 **Volts:** 120/240 **Phase:** 1
Comments: ROOM IS 10 X 50

HVAC

Manufacturer: **Model #:**
Cooling Tons: **# of Units:**
Description: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

Grounding System

System Type: LINER
Description: EQUIPMENT GROUNDED

Surge Suppression Devices: 1
Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

UPS System

Manufacturer: UNITY **Model #:** 360

# of Units: **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Describe Floor Space:

Transmission Line Entry

Total Ports: **# of Ports Used:**

Description / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

ENTRY UNDER RAISED FLOOR

Additional Comments:

Site Name	Site Type
ROCKY RIDGE	RF/MW

Survey Date	Surveyors	Observed Position (NAD83)	
9/15/2008	JKNOWLES	Latitude(N)	Longitude(W)

POTS: ☐ Yes ☑ No

Telco T1's: NO

Has Fiber: ☐ Yes ☑ No

Site Access

Parking Adequate: ☑ Yes ☐ No

Fencing / Gate: ☑ Yes ☐ No **Type:** CHAIN LINK, OLD, POOR CONDITION

Fire Suppression: ☐ Yes ☑ No **Type:**

Smoke Alarm: ☐ Yes ☑ No

Emergency Lighting: ☐ Yes ☑ No

Comments: SITE NOT OWNED BY COUNTY, OWNED BY AMERICAN TOWER

Site Description

Compound room for additional shelter: THERE IS ROOM FOR ANOTHER SHELTER

Other Tower(s) / Comments: ☐ Yes ☑ No

ONE TOWER ON SITE

Building Design Description

Manufacturer:
Model #:
Outside Diminsions:
Prefab./Built on Site: BUILT ON SITE
Wall Construction: BLOCK
Roof Construction: METAL
Floor Composition: CONCRETE
Comments: COUNTY IS REMOVING DIVIDING WALL FOR MORE SPACE

Outside Grounding System Description

GROUNG CABLES CLAMPED

Generator

Manufacturer: OLYMIPAN **Model #:** D45F1S **Phase:**
Capacity: **KVA:**

Transfer Switch Manufacturer: GENERAC **Model #:** GTS 105
Volts: **Amps:**
Comments:

Fuel System

Fuel Type: PROPANE **# of Tanks:** 2
Tank Size (gallons): **Comments:**
In-Ground / Above Ground: ABOVE

TOWER INFORMATION

Tower Height: 200
Manufacturer:
Model #:
ASR Registration: 1010559
Verticle Cable Ladder: ☑ Yes ☐ No
Tower Paint: ☑ Good ☐ Poor NO PAINT
Tower Type: GUYED
# of Legs: 1
Lighting: ONE LIGHT, ONE STROBE
Climbing: ☑ Ladder ☐ Cable
Ground System Type: SINGLE POINT
Ground Sys. Condition: (Comments - Rate) ☐ Great ☐ Good ☑ Average ☐ Poor

Transmission Cable Ground

	Twr. Bottom	Building Entry	Near Antenna	Comments:
MW:	NO	YES		
MW:	NO	YES		
MW:	NO	YES		
Coax:	NO	YES		
Coax:	NO	YES		
Coax:	NO	YES		

Roof Mount Access:

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 125 **Volts:** 240/120 **Phase:** 1

Comments: ROOM IS NEAR FULL, COUNTY IS REMOVING DIVIDING WALL FOR MORE SPACE

HVAC

Manufacturer: BARD **Model #:** WL6023A0ZBNXXXJ

Cooling Tons: **# of Units:**

Description: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

WALLMOUNT HVAC UNIT

Grounding System

System Type: LINEAR

Description: GROUND LINES RUN TO BUS BAR

Surge Suppression Devices: 1

Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

UPS System

Manufacturer: **Model #:**

# of Units: **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

CONNECTED TO MICROWAVE

Describe Floor Space:

Transmission Line Entry

Total Ports: 27 **# of Ports Used:** 21

Description / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

8 - 2"PORTS, 12 -1" PORTS, 7-4" PORTS

Additional Comments:

LAND MOBILE RADIO INFORMATION

Manufacturer: KENWOOD
Transmit Pwr. (watts):
Model: TKR-740/840
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 488.9125
Receive (MHz): 491.9125
TX Antenna Height:
RX Antenna Height:
Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:
Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: KENWOOD
Transmit Pwr. (watts):
Model: TKR-740/840
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 488.4375
Receive (MHz): 491.4375
TX Antenna Height:
RX Antenna Height:
Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:
Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MTR2000
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 155.31
Receive (MHz): 155.625
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MTR2000
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 159.735
Receive (MHz): 154.205
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MTR2000
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 160.110
Receive (MHz): 151.025
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MITREK
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 155.04
Receive (MHz): 155.04
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: QUANTAR
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 153.995
Receive (MHz): 154.995
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MIDLAND
Transmit Pwr. (watts):
Model:
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 44.64
Receive (MHz): 44.64
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

FAIR

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: QUANTAR
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 855.9875
Receive (MHz): 810.9875
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: QUANTAR
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 851.9625
Receive (MHz): 806.9625
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MTR2000
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 155.25
Receive (MHz): 155.955
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer:
Transmit Pwr. (watts):
Model:
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz)
Receive (MHz):
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☐ No
Manuf:

Radio Condition

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:
Manufacturer: HARRIS
Model #: BCK9GKDVM11-4564-1
MW Owner: CC COUNTY
Analog: ☐ Yes ☑ No
Digital, DS1 Capacity
Frequency Band:
Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf.: **Model #:**

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: HARRIS

Model #: HRS-CX-11G155M

MW Owner: CC COUNTY

Analog: ☑ Yes ☐ No

Digital, DS1 Capacity

Frequency Band:

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf.: **Model #:**

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: HARRIS

Model #: BCK9GKDVM10-8T-2

MW Owner: CC COUNTY

Analog: ☐ Yes ☑ No

Digital, DS1 Capacity

Frequency Band:

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf.: **Model #:**

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: HARRIS

Model #: HRS5211-0000OC3128QS

MW Owner: CC COUNTY

Analog: ☐ Yes ☑ No

Digital, DS1 Capacity

Frequency Band:

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf.: **Model #:**

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Site Name	Site Type
SAN RAMON VALLEY FIRE	DISPATCH/MW/RF

Survey Date	Surveyors	Observed Position (NAD83)	
9/16/2008	JKNOWLES	Latitude(N)	Longitude(W)

POTS: ☑ Yes ☐ No

Telco T1's:

Has Fiber: ☐ Yes ☑ No

Site Access

Parking Adequate: ☑ Yes ☐ No

Fencing / Gate: ☐ Yes ☑ No **Type:**

Fire Suppression: ☑ Yes ☐ No **Type:** SPRINKLERS

Smoke Alarm: ☑ Yes ☐ No

Emergency Lighting: ☑ Yes ☐ No

Comments:

Site Description

Compound room for additional shelter: NO

Other Tower(s) / Comments: ☐ Yes ☑ No
ONE TOWER ON SITE

Building Design Description

Manufacturer:
Model #:
Outside Diminsions: 150 X 100
Prefab./Built on Site: BUILT ON SITE
Wall Construction: BLOCK/ CONCRETE/METAL
Roof Construction: METAL
Floor Composition: CONCRETE
Comments:

Outside Grounding System Description

TOWER WAS GROUNDED

Generator

Manufacturer: SDMO **Model #:** G100U **Phase:**
Capacity: 80 **KVA:** 80

Transfer Switch Manufacturer: **Model #:**
Volts: **Amps:**
Comments: DID NOT HAVE ACCESS TO GENERATOR OR TRANSFER SWITCH

Fuel System

Fuel Type: PROPANE **# of Tanks:**
Tank Size (gallons): **Comments:** DID NOT HAVE ACCESS
In-Ground / Above Ground:

TOWER INFORMATION

Tower Height: 50
Manufacturer:
Model #:
ASR Registration:
Verticle Cable Ladder: ☐ Yes ☑ No
Tower Paint: ☑ Good ☐ Poor NO PAINT

Tower Type: SELF SUPPORTING
# of Legs: 3

Lighting: NONE

Climbing: ☑ Ladder ☐ Cable

Ground System Type: MULTI POINT
Ground Sys. Condition: (Comments - Rate) ☐ Great ☐ Good ☑ Average ☐ Poor

Transmission Cable Ground

	Twr. Bottom	Building Entry	Near Antenna	Comments:
MW:	YES			
MW:	YES			
MW:	YES			
Coax:	YES			
Coax:	YES			
Coax:	YES			

Roof Mount Access:

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 100 **Volts:** 208Y/120 **Phase:** 3

Comments: 15 total racks, ups in room, batteries

HVAC

Manufacturer: **Model #:**

Cooling Tons: **# of Units:**

Description: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

Grounding System

System Type: LINEAR

Description: MOST EQUIPMENT NOT GROUNDED

Surge Suppression Devices: 2

Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

UPS System

Manufacturer: LIBERT **Model #:** NFINITY

# of Units: 1 **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Describe Floor Space: the room is a L-shaped room 10 x 20 ft, and 12 x 15

Transmission Line Entry

Total Ports: **# of Ports Used:**

Description / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

CONDUIT ENTRY TO ROOM

Additional Comments:

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Model: QUANTAR
Call Sign:
Transmit (MHz)
TX Antenna Height:
RX Antenna Height:
Transmit Pwr. (watts):
ERP (watts):
Power Source:
Receive (MHz): 154.995
Combiner Manufacturer:
Multicoupler Manufacturer:
Twr. Top Amp: ☐ Yes ☑ No
# of Channels:
Model:
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Model: MTR2000
Call Sign:
Transmit (MHz)
TX Antenna Height:
RX Antenna Height:
Transmit Pwr. (watts):
ERP (watts):
Power Source:
Receive (MHz): 155.955
Combiner Manufacturer:
Multicoupler Manufacturer:
Twr. Top Amp: ☐ Yes ☑ No
# of Channels:
Model:
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: KENWOOD

Model: TKR-740/840

Call Sign:

Transmit (MHz)

TX Antenna Height:

Transmit Pwr. (watts):

ERP (watts):

Power Source:

Receive (MHz): 491.4375

RX Antenna Height:

Combiner Manufacturer:

Multicoupler Manufacturer:

Twr. Top Amp: ☐ Yes ☑ No

# of Channels:

Model:

Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: KENWOOD

Model: TKR-740/840

Call Sign:

Transmit (MHz)

TX Antenna Height:

Transmit Pwr. (watts):

ERP (watts):

Power Source:

Receive (MHz): 491.9125

RX Antenna Height:

Combiner Manufacturer:

Multicoupler Manufacturer:

Twr. Top Amp: ☐ Yes ☑ No

# of Channels:

Model:

Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: motorola

Model: MI225

Call Sign:

Transmit (MHz)

TX Antenna Height:

Transmit Pwr. (watts):

ERP (watts):

Power Source:

Receive (MHz):

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer:

Model:

Twr. Top Amp: ☐ Yes ☑ No

Manuf:

Radio Condition

FREQS NOT LISTED

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:

Manufacturer: HARRIS

Model #:

MW Owner: CC COUNTY

Analog: ☐ Yes ☑ No

Digital, DS1 Capacity

Frequency Band:

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.:

Model #:

Multiplexer Type:

Capacity:

Chan. Band Manuf.:

Model #:

Alarm Sys. Manuf.:

Model #:

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer:

Model #:

MW Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

DC Charger Volts:

Amps:

CONFIDENTIAL

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition (Rate) ☐ Great ☐ Good ☐ Average ☐ Poor
/ Comments:

Site Name	Site Type
SHADYBROOK	RF/MW

Survey Date	Surveyors	Observed Position (NAD83)	
9/18/2008	JKNOWLES	Latitude(N)	Longitude(W)

POTS: ☐ Yes ☑ No

Telco T1's: NO

Has Fiber: ☐ Yes ☑ No

Site Access

Parking Adequate:	☐ Yes ☑ No		
Fencing / Gate:	☑ Yes ☐ No	**Type:**	CHAINLINK
Fire Suppression:	☐ Yes ☑ No	**Type:**	
Smoke Alarm:	☑ Yes ☐ No		
Emergency Lighting:	☐ Yes ☑ No		

Comments:

Site Description

Compound room for additional shelter: POSSIBLE ROOM FOR ANOTHER SHELTER

Other Tower(s) / Comments: ☐ Yes ☑ No

THE TOWER IS SIX 10 FT POLES AT THE TOP OF THE HILL 300 FT FOR SHELTER

Building Design Description

Manufacturer:
Model #:
Outside Diminsions: 18 X 14
Prefab./Built on Site: PREFAB
Wall Construction: FIBERGLASS
Roof Construction: FIBERGLASS
Floor Composition:
Comments: FLOOR TILED

Outside Grounding System Description

BUILDING GROUNDED

Generator

Manufacturer: **Model #:** **Phase:**
Capacity: **KVA:**

Transfer Switch Manufacturer: **Model #:**
Volts: **Amps:**
Comments: NONE

Fuel System

Fuel Type: **# of Tanks:**
Tank Size (gallons): **Comments:** NONE
In-Ground / Above Ground:

TOWER INFORMATION

Tower Height: 10 SIX 10' POLES ON HILL TOP
Manufacturer:
Model #:
ASR Registration:
Verticle Cable Ladder: ☑ Yes ☐ No
Tower Paint: ☑ Good ☐ Poor

Tower Type: POLE
# of Legs: 1

Lighting: NONE

Climbing: ☐ Ladder ☑ Cable

Ground System Type: RING
Ground Sys. Condition: (Comments - Rate) ☐ Great ☑ Good ☐ Average ☐ Poor

EACH POLE GROUNDED

CONFIDENTIAL

Transmission Cable Ground

	Twr. Bottom	Building Entry	Near Antenna	Comments:
MW:				not able to tell due to cables under ground, not grounded near antenna
MW:				not able to tell due to cables under ground, not grounded near antenna
MW:				not able to tell due to cables under ground, not grounded near antenna
Coax:				not able to tell due to cables under ground, not grounded near antenna
Coax:				not able to tell due to cables under ground, not grounded near antenna
Coax:				not able to tell due to cables under ground, not grounded near antenna

Roof Mount Access:

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 50 **Volts:** 240/120 **Phase:** 1

Comments: PULLING POWER FROM WATER TANK NEXT TO SHELTER

HVAC

Manufacturer: BARD **Model #:** WA241-A10

Cooling Tons: **# of Units:** 2

Description: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

WALL MOUNT

Grounding System

System Type: HALO

Description: GOOD GROUNDING, GROUNDING TO DOOR IS BROKEN

Surge Suppression Devices: 1

Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

TRANSMISSION LINES, MW LINES, AND AC HAVE SURGE SUPPRESSION

UPS System

Manufacturer: **Model #:**

# of Units: **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

NONE

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

NONE

Describe Floor Space: HAS OPEN SPACE FOR MORE RACKS, AND OPEN SPACE IN RACKS, WOULD NEED POWER UPGRADE TO SUPPORT MORE EQUIPMENT

Transmission Line Entry

Total Ports: 8 **# of Ports Used:** 6

Description / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

EIGHT 3" PORTS FROM UNDER BUILDING

Additional Comments:

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Model: MTR2000
Call Sign:
Transmit (MHz)
TX Antenna Height:
Transmit Pwr. (watts):
ERP (watts):
Power Source: ASTRON PS
Receive (MHz): 155.64

RX Antenna Height: 10

Combiner Manufacturer:
Multicoupler Manufacturer: DECIBEL
Twr. Top Amp: ☐ Yes ☑ No
# of Channels:
Model: DB4001-2
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Model: MTR2000
Call Sign:
Transmit (MHz)
TX Antenna Height:
Transmit Pwr. (watts):
ERP (watts):
Power Source: ASTRON PS
Receive (MHz): 155.955

RX Antenna Height: 10

Combiner Manufacturer:
Multicoupler Manufacturer:
Twr. Top Amp: ☐ Yes ☑ No
# of Channels:
Model:
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: KENWOOD
Transmit Pwr. (watts):
Model:
ERP (watts):
Call Sign:
Power Source: ASTRON PS
Transmit (MHz) 489.4375
Receive (MHz):
TX Antenna Height: 10

RX Antenna Height:

Combiner Manufacturer: TELEWAVE
# of Channels: 2
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: QUANTAR
ERP (watts):
Call Sign:
Power Source: LORTAN
Transmit (MHz) 460.1750
Receive (MHz): 465.1750
TX Antenna Height: 10

RX Antenna Height: 10

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MTR2000
ERP (watts):
Call Sign:
Power Source: ASTRON PS
Transmit (MHz)
Receive (MHz): 154.205
TX Antenna Height:

RX Antenna Height: 10

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer: BECIBEL
Model: db4001-2
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

good

LAND MOBILE RADIO INFORMATION

Manufacturer: KENWOOD
Transmit Pwr. (watts):
Model:
ERP (watts):
Call Sign:
Power Source: ASTRON PS
Transmit (MHz)
Receive (MHz): 491.9125
TX Antenna Height:

RX Antenna Height: 10

Combiner Manufacturer: TELEWAVE
# of Channels: 2
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Model: QUANTAR
Call Sign:
Transmit (MHz) 460.3750
TX Antenna Height: 10
RX Antenna Height: 10
Transmit Pwr. (watts):
ERP (watts):
Power Source: ASTRON PS
Receive (MHz): 465.3750

Combiner Manufacturer:
Multicoupler Manufacturer:
Twr. Top Amp: ☐ Yes ☑ No
# of Channels:
Model:
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Model: QUANTAR
Call Sign:
Transmit (MHz) 851.9625
TX Antenna Height: 10
RX Antenna Height: 10
Transmit Pwr. (watts):
ERP (watts):
Power Source: ASTRON PS
Receive (MHz): 806.9625

Combiner Manufacturer:
Multicoupler Manufacturer:
Twr. Top Amp: ☐ Yes ☑ No
# of Channels:
Model:
Manuf:

Radio Condition

GOOD

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:
Manufacturer: STRATEX NETWORKS
Model #: DART DS1
MW Owner:
Analog: ☐ Yes ☑ No
Digital, DS1 Capacity
Frequency Band:

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf.: **Model #:**

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☐ Yes ☑ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Site Name	Site Type
SYDNEY	RF

Survey Date	Surveyors	Observed Position (NAD83)	
9/15/2008	JKNOWLES	Latitude(N)	Longitude(W)

POTS: ☑ Yes ☐ No

Telco T1's: NO

Has Fiber: ☐ Yes ☑ No

Site Access

Parking Adequate:	☐ Yes ☑ No	
Fencing / Gate:	☐ Yes ☑ No	**Type:**
Fire Suppression:	☐ Yes ☑ No	**Type:**
Smoke Alarm:	☐ Yes ☑ No	
Emergency Lighting:	☐ Yes ☑ No	

Comments: SMALL SHELTER, SHELTER AT THE EDGE OF HILL SIDE

Site Description

Compound room for additional shelter: NEXT TO OLD WATER TANK,

Other Tower(s) / Comments: ☐ Yes ☑ No

MAY LOSE SITE WHEN TANK IS REMOVED, SOON

Building Design Description

Manufacturer:
Model #:
Outside Diminsions: 14 X 8
Prefab./Built on Site: PREFAB
Wall Construction: METAL
Roof Construction: METAL
Floor Composition: CEMENTE
Comments: BUILDING IS SMALL

Outside Grounding System Description

BUILDING IS GROUNDED AT ONE POINT

Generator

Manufacturer: **Model #:** **Phase:**
Capacity: **KVA:**

Transfer Switch Manufacturer: **Model #:**
Volts: **Amps:**
Comments: NONE

Fuel System

Fuel Type: **# of Tanks:**
Tank Size (gallons): **Comments:** NONE
In-Ground / Above Ground:

TOWER INFORMATION

Tower Height: 30
Manufacturer:
Model #:
ASR Registration:
Verticle Cable Ladder: ☐ Yes ☑ No
Tower Paint: ☑ Good ☐ Poor NO PAINT

Tower Type: MONOPOLE
# of Legs: 1

Lighting: NONE

Climbing: ☐ Ladder ☑ Cable

Ground System Type:
Ground Sys. Condition: (Comments - Rate) ☐ Great ☐ Good ☐ Average ☑ Poor

TOWER GROUND OK

Transmission Cable Ground

	Twr. Bottom	Building Entry	Near Antenna	Comments:
MW:				NO
MW:				NO
MW:				NO
Coax:				NO
Coax:				NO
Coax:				NO

Roof Mount Access:

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 125 **Volts:** 240/120 **Phase:** 1

Comments: ROOM 13 X 7

HVAC

Manufacturer: **Model #:**

Cooling Tons: **# of Units:** 2

Description: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

WINDOW UNITS UNITS WORKING WELL, VERY SMALL SPACE

Grounding System

System Type: LINER

Description: EQUIPMENT GROUNDED TO BUS BAR

Surge Suppression Devices: 2

Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

UPS System

Manufacturer: **Model #:**

# of Units: **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

NONE

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

Describe Floor Space: TWO CABINETS IN THE BACK, 3 LONG THE SIDE, TIGHT

Transmission Line Entry

Total Ports: 8 **# of Ports Used:** 6

Description / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☑ Poor

3 CONDUITS RUNING TO TOWER, THREE 4" PORTS

Additional Comments:

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Model: MTR2000
Call Sign:
Transmit (MHz)
TX Antenna Height:
Transmit Pwr. (watts):
ERP (watts):
Power Source: ASTRON PS
Receive (MHz): 154.995

RX Antenna Height: 20

Combiner Manufacturer:
Multicoupler Manufacturer:
Twr. Top Amp: ☐ Yes ☑ No
# of Channels:
Model:
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Model: MTR2000
Call Sign:
Transmit (MHz)
TX Antenna Height:
Transmit Pwr. (watts):
ERP (watts):
Power Source:
Receive (MHz): 151.025

RX Antenna Height:

Combiner Manufacturer:
Multicoupler Manufacturer:
Twr. Top Amp: ☐ Yes ☑ No
# of Channels:
Model:
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MTR 2000
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz)
Receive (MHz): 155.955
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer: TELEWAVE
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MTR2000
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 453.425
Receive (MHz): 458.425
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: TELEWAVE
# of Channels: 2
Multicoupler Manufacturer: TELEWAVE
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Model: GM300
Call Sign:
Transmit (MHz)
TX Antenna Height:
Transmit Pwr. (watts):
ERP (watts):
Power Source: ASTRON PS
Receive (MHz):

RX Antenna Height:

Combiner Manufacturer:
Multicoupler Manufacturer:
Twr. Top Amp: ☐ Yes ☐ No
# of Channels:
Model:
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: KENWOOD
Model:
Call Sign:
Transmit (MHz) 488.6125
TX Antenna Height:
Transmit Pwr. (watts):
ERP (watts):
Power Source: ASTRON
Receive (MHz): 491.6125

RX Antenna Height:

Combiner Manufacturer: TELEWAVE
Multicoupler Manufacturer: TELEWAVE
Twr. Top Amp: ☐ Yes ☑ No
# of Channels: 2
Model:
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: KENWOOD

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source:

Transmit (MHz)

Receive (MHz): 491.9125

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer: TELEWAVE

Model:

Twr. Top Amp: ☐ Yes ☐ No

Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: KENWOOD

Transmit Pwr. (watts):

Model:

ERP (watts):

Call Sign:

Power Source: ASTRON PS

Transmit (MHz)

Receive (MHz): 491.4375

TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:

# of Channels:

Multicoupler Manufacturer: TELEWAVE

Model:

Twr. Top Amp: ☐ Yes ☑ No

Manuf:

Radio Condition

GOOD

Site Name	Site Type
TOURQUOISE	RF/MW

Survey Date	Surveyors	Observed Position (NAD83)	
9/17/2008	JKNOWLES	Latitude(N)	Longitude(W)

POTS: ☑ Yes ☐ No

Telco T1's: NO

Has Fiber: ☐ Yes ☑ No

Site Access

Parking Adequate: ☑ Yes ☐ No

Fencing / Gate: ☑ Yes ☐ No **Type:** GOOD, CHAINLINK

Fire Suppression: ☐ Yes ☑ No **Type:**

Smoke Alarm: ☑ Yes ☐ No

Emergency Lighting: ☐ Yes ☑ No

Comments: SHELTER AND GENERATOR HAVE BEEN TAGED

Site Description

Compound room for additional shelter: NO ROOM FOR ANOTHER SHELTER

Other Tower(s) / Comments: ☑ Yes ☐ No

SECOND TOWER IN SECOND COMPOUND

Building Design Description

Manufacturer: FIBREBOND WEST
Model #:
Outside Diminsions: 10 X 20
Prefab./Built on Site: PREFAB
Wall Construction: CEMENT
Roof Construction: RUBBER
Floor Composition: TILE
Comments:

Outside Grounding System Description

WITH GROUND WELL

Generator

Manufacturer: ONAN **Model #:** **Phase:**
Capacity: **KVA:**

Transfer Switch Manufacturer: ONAN **Model #:** LTD-3378498
Volts: 240 **Amps:** 200
Comments:

Fuel System

Fuel Type: DIESEL **# of Tanks:** 1
Tank Size (gallons): **Comments:**
In-Ground / Above Ground: IN-GROUND

TOWER INFORMATION

Tower Height: 50
Manufacturer:
Model #:
ASR Registration:
Verticle Cable Ladder: ☑ Yes ☐ No
Tower Paint: ☑ Good ☐ Poor NO PAINT
Tower Type: MONOPOLE
# of Legs: 1
Lighting: NONE
Climbing: ☐ Ladder ☑ Cable
Ground System Type: SINGLE POINT
Ground Sys. Condition: (Comments - Rate) ☐ Great ☑ Good ☐ Average ☐ Poor

Transmission Cable Ground

	Twr. Bottom	Building Entry	Near Antenna	Comments:
MW:	YES	YES		
MW:	YES	YES		
MW:	YES	YES		
Coax:	YES	YES		
Coax:	YES	YES		
Coax:	YES	YES		

Roof Mount Access: 3 ANTENNA MOUNTED ON ROOF

Additional Comments:

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 200 **Volts:** 120/240 **Phase:** 1

Comments: ROOM IS 9 X 19

HVAC

Manufacturer: BARD **Model #:** WA360-A05

Cooling Tons: 3 **# of Units:** 1

Description: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

Grounding System

System Type: HALO

Description:

Surge Suppression Devices: 1

Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

UPS System

Manufacturer: BEST POWER **Model #:** FE

# of Units: 1 **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Describe Floor Space:

Transmission Line Entry

Total Ports: 5 **# of Ports Used:** 5

Description / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

5 - 4" PORTS

Additional Comments:

LAND MOBILE RADIO INFORMATION

Manufacturer:	MA/COM	**Transmit Pwr. (watts):**	
Model:	EDACS MASTR III	**ERP (watts):**	
Call Sign:		**Power Source:**	
Transmit (MHz)	867.6250	**Receive (MHz):**	822.6250
TX Antenna Height:			

RX Antenna Height:

Combiner Manufacturer:	dbSPECTRA	**# of Channels:**	8
Multicoupler Manufacturer:		**Model:**	
Twr. Top Amp:	☐ Yes ☑ No	**Manuf:**	

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer:	MA/COM	**Transmit Pwr. (watts):**	
Model:	EDACS MASTR III	**ERP (watts):**	
Call Sign:		**Power Source:**	
Transmit (MHz)	867.1000	**Receive (MHz):**	822.1000
TX Antenna Height:			

RX Antenna Height:

Combiner Manufacturer:	dbSPECTRTRA	**# of Channels:**	8
Multicoupler Manufacturer:		**Model:**	
Twr. Top Amp:	☐ Yes ☑ No	**Manuf:**	

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MA/COM
Transmit Pwr. (watts):
Model: EDACS MASTR III
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 866.7500
Receive (MHz): 821.7500
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: dbSPECTRA
# of Channels: 8
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MA/COM
Transmit Pwr. (watts):
Model: EDACS MASTR III
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 866.1000
Receive (MHz): 821.1000
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: dbSPECTRA
# of Channels: 8
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: QUANTAR
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 868.4125
Receive (MHz): 823.4126
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: QUANTAR
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 859.4625
Receive (MHz): 814.4625
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MA/COM
Transmit Pwr. (watts):
Model: EDACS MASTR III
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 860.7125
Receive (MHz): 815.7125
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: dbSPECTRA
# of Channels: 8
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MA/COM
Transmit Pwr. (watts):
Model: EDACS MASTR III
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 868.6125
Receive (MHz): 823.6125
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: dbSPECTRA
# of Channels: 8
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MA/COM
Transmit Pwr. (watts):
Model: EDACS MASTR III
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz) 868.8625
Receive (MHz): 822.8625
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer: dbSPECTRA
# of Channels: 8
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

LAND MOBILE RADIO INFORMATION

Manufacturer: MOTOROLA
Transmit Pwr. (watts):
Model: MTR2000
ERP (watts):
Call Sign:
Power Source:
Transmit (MHz)
Receive (MHz):
TX Antenna Height:

RX Antenna Height:

Combiner Manufacturer:
# of Channels:
Multicoupler Manufacturer:
Model:
Twr. Top Amp: ☐ Yes ☑ No
Manuf:

Radio Condition

GOOD

MICROWAVE / FIBER EQUIPMENT INFORMATION

Comments:

Radio Configuration:
Manufacturer: GLENAYRE
Model #: 4T-6
MW Owner: RICHMOND
Analog: ☐ Yes ☑ No
Digital, DS1 Capacity
Frequency Band:

Main Ant. Height:

Main Ant. Diameter:

Diversity Ant. Height

Diversity Ant. Dia.:

Multiplexer Manuf.: **Model #:**

Multiplexer Type: **Capacity:**

Chan. Band Manuf.: **Model #:**

Alarm Sys. Manuf.: **Model #:**

Alarm Sys. Type:

Dehydrator: ☑ Yes ☐ No

Router / Switch Manufacturer: **Model #:**

MW Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

---

DC Charger Volts: **Amps:**

Condition:

Type:

Amp/Hr. Rating: **Volts:**

Condition:

FOT. Manufacturer: **Model #:**

FOT. Owner: **Capacity:**

System Configuration

Interface Cards	Number of Cards	Unused Slots

FOT. Condition / Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Site Name	Site Type
WALNUT CREEK	**DISPATCH**

Survey Date	Surveyors	Observed Position (NAD83)	
9/15/2006	JKNOWLES	Latitude(N)	Longitude(W)

POTS: ☑ Yes ☐ No

Telco T1's: YES

Has Fiber: ☐ Yes ☑ No

Site Access

Parking Adequate: ☐ Yes ☑ No

Fencing / Gate: ☐ Yes ☑ No **Type:**

Fire Suppression: ☑ Yes ☐ No **Type:** FM-200

Smoke Alarm: ☑ Yes ☐ No

Emergency Lighting: ☑ Yes ☐ No

Comments:

Site Description

Compound room for additional shelter: NO

Other Tower(s) / Comments: ☐ Yes ☑ No

NO TOWER ON SITE

Building Design Description

Manufacturer:
Model #:
Outside Diminsions: 250 X 200
Prefab./Built on Site: BUILT ON SITE
Wall Construction: BLOCK
Roof Construction: RUBBER
Floor Composition: CONCRETE
Comments:

Outside Grounding System Description

UNKNOWN

Generator

Manufacturer: CUMMINGS **Model #:** **Phase:**
Capacity: **KVA:**

Transfer Switch Manufacturer: **Model #:**
Volts: **Amps:**
Comments:

Fuel System

Fuel Type: DIESEL **# of Tanks:** 1
Tank Size (gallons): **Comments:**
In-Ground / Above Ground: IN-GROUND

EQUIPMENT ROOM INFORMATION

Electrical Panel Power Rating: **Amps:** 225 **Volts:** 120/240 **Phase:** 1
Comments: 15 RACKS, 8 CABINETS

HVAC

Manufacturer: **Model #:**
Cooling Tons: **# of Units:**
Description: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

Grounding System

System Type: LINEAR
Description:
Surge Suppression Devices: 2
Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

UPS System

Manufacturer: MITSUBISHI **Model #:** 2033A

# of Units: 1 **kVA:** **Batt. Capacity**

Condition / Comments: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

Alarm

Manufacturer: **Model #:**

Type / Condition /Comments: **(Rate)** ☐ Great ☐ Good ☐ Average ☐ Poor

Describe Floor Space:

Transmission Line Entry

Total Ports: **# of Ports Used:**

Description / Comments: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

ENTRY THROUGH CONDUIT

Additional Comments:

DISPATCH CENTER INFORMATION

Center Name: ANTIOCH
Surveyor: Jknowles
Site Type: DISPATCH
Survey Date: 9/18/2008
County: Contra Costa
Revisit:

Adequate Air Conditioning ☑ Yes ☐ No **Model #:**

Equipment Room Details: 6 RACKS-2 CABINETS, - 10 X 14, ROOM IS FULL
2 CABINETS, 15 X 15, ROOM HAS ADOUT 8 FT OF SPACE FOR MORE EQUIPMENT

Dispatch Room Description 30 X 20 FULL

Raised Computer Flooring: ☑ Yes ☐ No

Pwr. distribution Units: ☐ Yes ☑ No

Grounding System: (Rate) ☐ Great ☐ Good ☐ Average ☑ Poor

System Type:

Equipment Grounding Description:

Surge Suppression Devices:

Comments:

UPS System: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

Manufacturer: EPE TECHNOLOGIES **Model #:** EPS-2000

# of Units: 1 **kVA:** **Battery Capacity:**

Condition and Comments:

Logging Recorder Manuf.: DICTAPHONE **Model #:**

Channel Capacity: 32 **# of Channels Used:** 10

Comments:

Fire Station Alerting Make **Model:**

Paging: **Model:**

Netclock: **Model:**

# of Dispatch Only Positions: 5 **# of Call Taker Only Positions**

# of Supervisor Positions: **# of Spare Positions:** 1

Control Stations	Location	Qty

Agencies Dispatched: ANTIOCH PD, BRENTWOOD

Notes:

Mobile Data Equipment **Make** **Model #:**

Console Equip. Type gold elite

Incoming Circuits (connectivity):

Central Electronics Equipment

Manufacturer: **Model #:**

Notes:

Racks:

Dispatch/Radio Position **# of Positions** 6

- ☑ **Monitor**
- ☑ **Mouse**
- ☑ **Desktop**
- ☑ **Headset**
- ☑ **Footswitch**
- ☐ **PBX/KTS Telephone Se**

Console Make:

Console Model #

Notes: MONITOR- SECURITY CAM

Monitors	Application
Monitor 1	RADIO
Monitor 2	PHONE
Monitor 3	CAD
Monitor 4	CAD
Monitor 5	CAD

Control Station

Call Taker Position	# of Positions	Monitors	Application
☐ Monitor		Monitor 1	
☐ Mouse		Monitor 2	
☐ Desktop		Monitor 3	
☐ Headset		Monitor 4	
☐ Footswitch		Monitor 5	
☐ PBX/KTS Telephone Se		Control Station	

Console Make:

Console Model #

Notes:

Supervisor Position	# of Positions	Monitors	Application
☐ Monitor		Monitor 1	
☐ Mouse		Monitor 2	
☐ Desktop		Monitor 3	
☐ Headset		Monitor 4	
☐ Footswitch		Monitor 5	
☐ PBX/KTS Telephone Se		Control Station	

Console Make:

Console Model #

Notes:

Customer Premise Equipment:

Computer Terminals and Moniters

CAD:	☑ Yes	☐ No	**State Criminal Database**	☑ Yes	☐ No
Federal NCIC	☑ Yes	☐ No	**Alarm**	☐ Yes	☐ No
Security Video Monitor	☑ Yes	☐ No	**System Manager**	☐ Yes	☐ No

Notes:

Other Miscellanous Equipment: 6 20" DISPLAYS, 2 32" DISPLAYS, FAX

DISPATCH CENTER INFORMATION

Center Name: CCC SHERIFF
Surveyor: JKNOWLES
Site Type: DISPATCH
Survey Date: 9/16/2008
County: CONTRA COSTA
Revisit:

Adequate Air Conditioning ☑ Yes ☐ No **Model #:**

Equipment Room Details: 24-RACKS, 6 CABINETS, 20 X 40
SEVER ROOM -7 CABNETS, 20 x

Dispatch Room Description 30 X 60

Raised Computer Flooring: ☑ Yes ☐ No

Pwr. distribution Units: ☑ Yes ☐ No

Grounding System: (Rate) ☐ Great ☐ Good ☑ Average ☐ Poor

System Type: LINEAR

Equipment Grounding Description:

Surge Suppression Devices:

Comments:

UPS System: (Rate) ☐ Great ☑ Good ☐ Average ☐ Poor

Manufacturer: EMERSON **Model #:** AP51A

# of Units: 1 **kVA:** 80 **Battery Capacity:**

Condition and Comments: GOOD

Logging Recorder Manuf.: CAPTURE **Model #:**

Channel Capacity: **# of Channels Used:**

Comments:

Fire Station Alerting Make **Model:**

Paging: **Model:**

Netclock: SPECRA COM **Model:**

# of Dispatch Only Positions: 15 **# of Call Taker Only Positions**

# of Supervisor Positions: 2 **# of Spare Positions:** 8

Control Stations	**Location**	**Qty**

Agencies Dispatched:

Notes:

Mobile Data Equipment **Make** **Model #:**

Console Equip. Type

Incoming Circuits (connectivity):

Central Electronics Equipment

Manufacturer: MOTOROLA **Model #:**

Notes:

Racks: 8

Dispatch/Radio Position **# of Positions** 23

- ☑ **Monitor**
- ☑ **Mouse**
- ☑ **Desktop**
- ☑ **Headset**
- ☑ **Footswitch**
- ☐ **PBX/KTS Telephone Se**

Console Make:

Console Model #

Notes:

Monitors	**Application**
Monitor 1	RADIO/COMM
Monitor 2	CAD
Monitor 3	CAD
Monitor 4	MAPPING-NOT USE, BAD GIS
Monitor 5	PHONE

Control Station

Call Taker Position	# of Positions	Monitors	Application
☐ Monitor		Monitor 1	
☐ Mouse		Monitor 2	
☐ Desktop		Monitor 3	
☐ Headset		Monitor 4	
☐ Footswitch		Monitor 5	
☐ PBX/KTS Telephone Se		Control Station	

Console Make:

Console Model #

Notes:

Supervisor Position	# of Positions 2	Monitors	Application
☑ Monitor		Monitor 1	RADIO/COMM
☑ Mouse		Monitor 2	CAD
☑ Desktop		Monitor 3	CAD
☑ Headset		Monitor 4	MAPPING-NOT USE, BAD GIS
☑ Footswitch		Monitor 5	PHONE
☐ PBX/KTS Telephone Se		Control Station	

Console Make: MOTOROLA

Console Model # GOLD ELITE

Notes:

Customer Premise Equipment:

Computer Terminals and Moniters

CAD:	☑ Yes	☐ No	**State Criminal Database**	☑ Yes	☐ No
Federal NCIC	☑ Yes	☐ No	**Alarm**	☑ Yes	☐ No
Security Video Monitor	☐ Yes	☑ No	**System Manager**	☐ Yes	☐ No

Notes:

Other Miscellanous Equipment:

DISPATCH CENTER INFORMATION

Center Name: CONCORD PD
Surveyor: JKNOWLES
Site Type: DISPATCH
Survey Date: 9/16/2008
County: CONTRA COSTA
Revisit:

Adequate Air Conditioning ☑ Yes ☐ No **Model #:**

Equipment Room Details: 3 CABINETS - 1 RACK, HAS BIG DESK IN ROOM, ROOM IS 12 X 10
1 RACK, 2 CABINETS, AND UPS ROOM IS 10 X 12

Dispatch Room Description ROOM IS 30 X 20, LITTLE SPACE AVAILABLE

Raised Computer Flooring: ☑ Yes ☐ No

Pwr. distribution Units: ☐ Yes ☑ No

Grounding System: (Rate) ☐ Great ☐ Good ☐ Average ☑ Poor

System Type:

Equipment Grounding Description: DISPATCH EQUIPMENT NOT GROUNDED

Surge Suppression Devices:

Comments:

UPS System: **(Rate)** ☐ Great ☐ Good ☑ Average ☐ Poor

Manufacturer: LIEBERT **Model #:**

# of Units: **kVA:** **Battery Capacity:**

Condition and Comments:

Logging Recorder Manuf.: **Model #:**

Channel Capacity: **# of Channels Used:**

Comments:

Fire Station Alerting Make **Model:**

Paging: **Model:**

Netclock: **Model:**

# of Dispatch Only Positions: 7 **# of Call Taker Only Positions**

# of Supervisor Positions: **# of Spare Positions:**

Control Stations	**Location**	**Qty**

Agencies Dispatched: CONCORD, CLAYTON

Notes:

Mobile Data Equipment **Make** **Model #:**

Console Equip. Type

Incoming Circuits (connectivity):

Central Electronics Equipment

Manufacturer: MOTOROLA **Model #:**

Notes:

Racks:

Dispatch/Radio Position **# of Positions** 7

- ☑ **Monitor**
- ☑ **Mouse**
- ☑ **Desktop**
- ☑ **Headset**
- ☑ **Footswitch**
- ☑ **PBX/KTS Telephone Se**

Console Make:

Console Model #

Notes:

Monitors	**Application**
Monitor 1	RADIO
Monitor 2	CAD
Monitor 3	GIS
Monitor 4	CAD
Monitor 5	PHONE

Control Station

Call Taker Position	# of Positions	Monitors	Application
☐ Monitor		Monitor 1	
☐ Mouse		Monitor 2	
☐ Desktop		Monitor 3	
☐ Headset		Monitor 4	
☐ Footswitch		Monitor 5	
☐ PBX/KTS Telephone Se		Control Station	

Console Make:

Console Model #

Notes:

Supervisor Position	# of Positions	Monitors	Application
☐ Monitor		Monitor 1	
☐ Mouse		Monitor 2	
☐ Desktop		Monitor 3	
☐ Headset		Monitor 4	
☐ Footswitch		Monitor 5	
☐ PBX/KTS Telephone Se		Control Station	

Console Make:

Console Model #

Notes:

Customer Premise Equipment:

Computer Terminals and Moniters

CAD:	☑ Yes	☐ No	**State Criminal Database**	☑ Yes	☐ No
Federal NCIC	☑ Yes	☐ No	**Alarm**	☑ Yes	☐ No
Security Video Monitor	☑ Yes	☐ No	**System Manager**	☐ Yes	☐ No

Notes:

Other Miscellanous Equipment: FAX, 3 - 27" TVs,

DISPATCH CENTER INFORMATION

Center Name: CONSOLIDATED FIRE
Surveyor: JKNOWLES
Site Type: DISPATCH
Survey Date: 9/16/2008
County: CONTRA COSTA
Revisit:

Adequate Air Conditioning ☑ Yes ☐ No **Model #:**

Equipment Room Details: 3 ROOM, 5 CABINETS-SERVER ROOM - 10 X 15
7 RACKS, 1 CABINET - SECOND ROOM - 15 X 20
5 RACKS - THIRD ROOM - 12 X 10

Dispatch Room Description 40 X 30

Raised Computer Flooring: ☑ Yes ☐ No

Pwr. distribution Units: ☑ Yes ☐ No

Grounding System: (Rate) ☐ Great ☐ Good ☑ Average ☐ Poor

System Type:

Equipment Grounding Description:

Surge Suppression Devices:

Comments:

UPS System: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

Manufacturer: BEST POWER **Model #:** FE

# of Units: 1 **kVA:** **Battery Capacity:**

Condition and Comments:

Logging Recorder Manuf.: NICE LOG RECORDER **Model #:**

Channel Capacity: 64 **# of Channels Used:**

Comments: P25 COMPLIANT

Fire Station Alerting Make ZETRON **Model:**

Paging: **Model:**

Netclock: **Model:**

# of Dispatch Only Positions: 9 **# of Call Taker Only Positions**

# of Supervisor Positions: **# of Spare Positions:**

Control Stations	Location	Qty

Agencies Dispatched:

Notes:

Mobile Data Equipment **Make** **Model #:**

Console Equip. Type GOLDEN ELITE

Incoming Circuits (connectivity): 6 TRUNKS

Central Electronics Equipment

Manufacturer: MOTOROLA **Model #:**

Notes:

Racks:

Dispatch/Radio Position **# of Positions** 9

- ☑ **Monitor**
- ☑ **Mouse**
- ☑ **Desktop**
- ☑ **Headset**
- ☑ **Footswitch**
- ☑ **PBX/KTS Telephone Se**

Console Make:

Console Model #

Notes:

Monitors	Application
Monitor 1	RADIO
Monitor 2	CAD
Monitor 3	PHONE
Monitor 4	
Monitor 5	
Control Station	

Call Taker Position	# of Positions	Monitors	Application
☐ Monitor		Monitor 1	
☐ Mouse		Monitor 2	
☐ Desktop		Monitor 3	
☐ Headset		Monitor 4	
☐ Footswitch		Monitor 5	
☐ PBX/KTS Telephone Se		Control Station	

Console Make:

Console Model #

Notes:

Supervisor Position	# of Positions	Monitors	Application
☐ Monitor		Monitor 1	
☐ Mouse		Monitor 2	
☐ Desktop		Monitor 3	
☐ Headset		Monitor 4	
☐ Footswitch		Monitor 5	
☐ PBX/KTS Telephone Se		Control Station	

Console Make:

Console Model #

Notes:

Customer Premise Equipment:

Computer Terminals and Moniters

CAD:	☑ Yes	☐ No	**State Criminal Database**	☐ Yes	☐ No
Federal NCIC	☐ Yes	☐ No	**Alarm**	☑ Yes	☐ No
Security Video Monitor	☐ Yes	☐ No	**System Manager**	☐ Yes	☐ No

Notes:

Other Miscellanous Equipment: 4-42" MONITORS

DISPATCH CENTER INFORMATION

Center Name: PINOLE PD
Surveyor: JKNOWLES
Site Type: DISPATCH
Survey Date: 9/16/2008
County: CONTRA COSTA
Revisit:

Adequate Air Conditioning ☑ Yes ☐ No **Model #:**

Equipment Room Details: 1 RACK, 1 CABINET, BULT IN SHELVES, DESK. ROOM IS 10 BY 15, BUT NEED TO BE ORGANIZED

Dispatch Room Description

Raised Computer Flooring: ☐ Yes ☑ No

Pwr. distribution Units: ☐ Yes ☑ No

Grounding System: (Rate) ☐ Great ☐ Good ☐ Average ☑ Poor

System Type:

Equipment Grounding Description: POOR

Surge Suppression Devices:

Comments:

UPS System: (Rate) ☐ Great ☐ Good ☑ Average ☐ Poor

Manufacturer: BEST POWER **Model #:** FE

# of Units: **kVA:** **Battery Capacity:**

Condition and Comments:

Logging Recorder Manuf.: DICTAPHONE **Model #:**

Channel Capacity: **# of Channels Used:**

Comments:

Fire Station Alerting Make **Model:**

Paging: **Model:**

Netclock: **Model:**

# of Dispatch Only Positions: 2 **# of Call Taker Only Positions**

# of Supervisor Positions: **# of Spare Positions:** 1

Control Stations	Location	Qty

Agencies Dispatched:

Notes:

Mobile Data Equipment **Make** **Model #:**

Console Equip. Type

Incoming Circuits (connectivity):

Central Electronics Equipment

Manufacturer: **Model #:**

Notes:

Racks:

Dispatch/Radio Position **# of Positions** 3

- ☑ **Monitor**
- ☑ **Mouse**
- ☑ **Desktop**
- ☑ **Headset**
- ☑ **Footswitch**
- ☐ **PBX/KTS Telephone Se**

Console Make: ERICSSON

Console Model # ERICSSON

Notes: GIS BAD

Monitors	Application
Monitor 1	SECURITY CAMS
Monitor 2	RADIO
Monitor 3	CAD
Monitor 4	GIS
Monitor 5	PHONE

Control Station

Call Taker Position	# of Positions	Monitors	Application
☐ Monitor		Monitor 1	
☐ Mouse		Monitor 2	
☐ Desktop		Monitor 3	
☐ Headset		Monitor 4	
☐ Footswitch		Monitor 5	
☐ PBX/KTS Telephone Se		Control Station	

Console Make:

Console Model #

Notes:

Supervisor Position	# of Positions	Monitors	Application
☐ Monitor		Monitor 1	
☐ Mouse		Monitor 2	
☐ Desktop		Monitor 3	
☐ Headset		Monitor 4	
☐ Footswitch		Monitor 5	
☐ PBX/KTS Telephone Se		Control Station	

Console Make:

Console Model #

Notes:

Customer Premise Equipment:

Computer Terminals and Moniters

CAD:	☑ Yes	☐ No	**State Criminal Database**	☑ Yes	☐ No
Federal NCIC	☑ Yes	☐ No	**Alarm**	☑ Yes	☐ No
Security Video Monitor	☑ Yes	☐ No	**System Manager**	☐ Yes	☐ No

Notes:

Other Miscellanous Equipment:

DISPATCH CENTER INFORMATION

Center Name: PLEASANT HILL PD
Surveyor: JKNOWLES
Site Type: DISPATCH
Survey Date: 9/15/2008
County: CONTRA COSTA
Revisit:

Adequate Air Conditioning ☑ Yes ☐ No **Model #:**

Equipment Room Details: 5 RACKS, 2 CABINETS,

Dispatch Room Description 25 X 30, ALSO IS THE RESEPTION FOR PD DEPARTMENT

Raised Computer Flooring: ☑ Yes ☐ No

Pwr. distribution Units: ☐ Yes ☑ No

Grounding System: (Rate) ☐ Great ☐ Good ☐ Average ☑ Poor

System Type:

Equipment Grounding Description:

Surge Suppression Devices:

Comments:

UPS System: **(Rate)** ☐ Great ☑ Good ☐ Average ☐ Poor

Manufacturer: BEST POWER **Model #:** FE

# of Units: 1 **kVA:** **Battery Capacity:**

Condition and Comments:

Logging Recorder Manuf.: **Model #:**

Channel Capacity: **# of Channels Used:**

Comments:

Fire Station Alerting Make **Model:**

Paging: **Model:**

Netclock: SPECTRA COM **Model:** GPS5283

# of Dispatch Only Positions: 3 **# of Call Taker Only Positions** 4

# of Supervisor Positions: **# of Spare Positions:**

Control Stations	Location	Qty

Agencies Dispatched:

Notes:

Mobile Data Equipment **Make** **Model #:**

Console Equip. Type GOLD ELITE

Incoming Circuits (connectivity):

Central Electronics Equipment

Manufacturer: MOTOROLA **Model #:**

Notes:

Racks:

Dispatch/Radio Position **# of Positions** 3

- ☑ **Monitor**
- ☑ **Mouse**
- ☑ **Desktop**
- ☑ **Headset**
- ☑ **Footswitch**
- ☑ **PBX/KTS Telephone Se**

Monitors **Application**

Monitor 1 PHONE
Monitor 2 CAD
Monitor 3 RADIO
Monitor 4
Monitor 5
Control Station

Console Make:

Console Model #

Notes:

Call Taker Position **# of Positions** 4

- ☑ **Monitor**
- ☑ **Mouse**
- ☑ **Desktop**
- ☑ **Headset**
- ☑ **Footswitch**
- ☑ **PBX/KTS Telephone Se**

Monitors **Application**

Monitor 1 CAD
Monitor 2
Monitor 3
Monitor 4
Monitor 5
Control Station

Console Make:

Console Model #

Notes:

Supervisor Position	# of Positions	Monitors	Application
☐ Monitor		Monitor 1	
☐ Mouse		Monitor 2	
☐ Desktop		Monitor 3	
☐ Headset		Monitor 4	
☐ Footswitch		Monitor 5	
☐ PBX/KTS Telephone Se		Control Station	

Console Make:

Console Model #

Notes:

Customer Premise Equipment:

Computer Terminals and Moniters

CAD:	☑ Yes	☐ No	**State Criminal Database**	☑ Yes	☐ No
Federal NCIC	☑ Yes	☐ No	**Alarm**	☑ Yes	☐ No
Security Video Monitor	☑ Yes	☐ No	**System Manager**	☐ Yes	☐ No

Notes:

Other Miscellanous Equipment:

DISPATCH CENTER INFORMATION

Center Name: RICHMOND PD/FD
Surveyor: JKNOWLES
Site Type: DISPATCH
Survey Date: 9/17/2008
County: CONTRA COSTA
Revisit:

Adequate Air Conditioning ☑ Yes ☐ No **Model #:**

Equipment Room Details: 5 RACKS, 9 CABINETS, 10 X 40

Dispatch Room Description 40 X 45, OPEN FLOOR PLAN

Raised Computer Flooring: ☑ Yes ☐ No

Pwr. distribution Units: ☑ Yes ☐ No

Grounding System: (Rate) ☐ Great ☐ Good ☑ Average ☐ Poor

System Type: LINER

Equipment Grounding Description: EQUIPMENT GROUNDED TO UNDER RAISED FLOOR

Surge Suppression Devices:

Comments:

UPS System: (Rate) ☐ Great ☐ Good ☑ Average ☐ Poor

Manufacturer: BEST POWER **Model #:** UNITY360

# of Units: 1 **kVA:** **Battery Capacity:**

Condition and Comments:

Logging Recorder Manuf.: PYXIS **Model #:** MAXPRO

Channel Capacity: 32 **# of Channels Used:** 12

Comments:

Fire Station Alerting Make	ZETRON	**Model:**	
Paging:		**Model:**	
Netclock:	SPECTRACOM	**Model:**	NETCLOCK/2

# of Dispatch Only Positions:	6	**# of Call Taker Only Positions**	2
# of Supervisor Positions:		**# of Spare Positions:**	

Control Stations	**Location**	**Qty**

Agencies Dispatched:

Notes:

Mobile Data Equipment **Make** **Model #:**

Console Equip. Type MA/COM

Incoming Circuits (connectivity): 8 TRUNCKS

Central Electronics Equipment

Manufacturer: MA/COM **Model #:**

Notes:

Racks:

Dispatch/Radio Position	**# of Positions** 6	**Monitors**	**Application**
☑ **Monitor**		**Monitor 1**	PHONE
☑ **Mouse**		**Monitor 2**	cad
☑ **Desktop**		**Monitor 3**	CAD
☑ **Headset**		**Monitor 4**	CAD
☑ **Footswitch**		**Monitor 5**	RADIO
☐ **PBX/KTS Telephone Se**		**Control Station**	

Console Make:

Console Model #

Notes:

Call Taker Position	**# of Positions** 2	**Monitors**	**Application**
☑ **Monitor**		**Monitor 1**	CAD
☑ **Mouse**		**Monitor 2**	PHONE
☑ **Desktop**		**Monitor 3**	
☑ **Headset**		**Monitor 4**	
☑ **Footswitch**		**Monitor 5**	
☐ **PBX/KTS Telephone Se**		**Control Station**	

Console Make:

Console Model #

Notes:

Supervisor Position	# of Positions	Monitors	Application
☐ Monitor		Monitor 1	
☐ Mouse		Monitor 2	
☐ Desktop		Monitor 3	
☐ Headset		Monitor 4	
☐ Footswitch		Monitor 5	
☐ PBX/KTS Telephone Se		Control Station	

Console Make:

Console Model #

Notes:

Customer Premise Equipment:

Computer Terminals and Moniters

CAD:	☑ Yes	☐ No	**State Criminal Database**	☑ Yes	☐ No
Federal NCIC	☑ Yes	☐ No	**Alarm**	☑ Yes	☐ No
Security Video Monitor	☑ Yes	☐ No	**System Manager**	☐ Yes	☐ No

Notes:

Other Miscellanous Equipment:

DISPATCH CENTER INFORMATION

Center Name: SAN RAMON VALLEY FIRE
Surveyor: JKNOWLES
Site Type: DISPATCH
Survey Date: 9/16/2008
County: CONTRA COSTA
Revisit:

Adequate Air Conditioning ☑ Yes ☐ No **Model #:**

Equipment Room Details: 13 RACKS, NO OPEN RACKS,

Dispatch Room Description 25 X 30 ROOM DOES HAVE SPACE

Raised Computer Flooring: ☐ Yes ☑ No

Pwr. distribution Units: ☑ Yes ☐ No

Grounding System: (Rate) ☐ Great ☐ Good ☐ Average ☑ Poor

System Type: LINEAR

Equipment Grounding Description:

Surge Suppression Devices: NO

Comments:

UPS System: (Rate) ☐ Great ☐ Good ☑ Average ☐ Poor

Manufacturer: LIBERT **Model #:** NFINITY

# of Units: 1 **kVA:** **Battery Capacity:**

Condition and Comments:

Logging Recorder Manuf.: NICE **Model #:**

Channel Capacity: **# of Channels Used:**

CONFIDENTIAL

Comments:

Fire Station Alerting Make		**Model:**	
Paging:		**Model:**	
Netclock:	SPECTRACOM	**Model:**	NETCLOCK/GPS 9283

# of Dispatch Only Positions:	3	**# of Call Taker Only Positions**	
# of Supervisor Positions:	1	**# of Spare Positions:**	

Control Stations	**Location**	**Qty**

Agencies Dispatched: SRVF

Notes:

Mobile Data Equipment **Make** **Model #:**

Console Equip. Type

Incoming Circuits (connectivity):

Central Electronics Equipment

Manufacturer: MOTOROLA **Model #:**

Notes:

Racks:

Dispatch/Radio Position	**# of Positions** 3	**Monitors**	**Application**
☑ **Monitor**		**Monitor 1**	PHONE
☑ **Mouse**		**Monitor 2**	CAD
☑ **Desktop**		**Monitor 3**	CAD
☑ **Headset**		**Monitor 4**	CAD
☑ **Footswitch**		**Monitor 5**	RADIO
☑ **PBX/KTS Telephone Se**		**Control Station**	

Console Make:

Console Model #

Notes:

Call Taker Position	**# of Positions**	**Monitors**	**Application**
☐ **Monitor**		**Monitor 1**	
☐ **Mouse**		**Monitor 2**	
☐ **Desktop**		**Monitor 3**	
☐ **Headset**		**Monitor 4**	
☐ **Footswitch**		**Monitor 5**	
☐ **PBX/KTS Telephone Se**		**Control Station**	

Console Make:

Console Model #

Notes:

Supervisor Position	**# of Positions** 1	**Monitors**	**Application**
☑ **Monitor**		**Monitor 1**	PHONE
☑ **Mouse**		**Monitor 2**	CAD
☑ **Desktop**		**Monitor 3**	CAD
☑ **Headset**		**Monitor 4**	CAD
☑ **Footswitch**		**Monitor 5**	RADIO
☑ **PBX/KTS Telephone Se**		**Control Station**	

Console Make:

Console Model #

Notes:

Customer Premise Equipment:

Computer Terminals and Moniters

CAD:	☑ Yes	☐ No	**State Criminal Database**	☐ Yes	☐ No
Federal NCIC	☐ Yes	☐ No	**Alarm**	☑ Yes	☐ No
Security Video Monitor	☑ Yes	☐ No	**System Manager**	☐ Yes	☐ No

Notes:

Other Miscellanous Equipment: FAX,

DISPATCH CENTER INFORMATION

Center Name: WALNUT CREEK
Surveyor: JKNOWLES
Site Type: DISPATCH
Survey Date: 9/15/2008
County: CONTRA COSTA
Revisit:

Adequate Air Conditioning ☑ Yes ☐ No **Model #:**

Equipment Room Details: 15 RACKS, 8 CABINETS

Dispatch Room Description 19 X 25

Raised Computer Flooring: ☑ Yes ☐ No

Pwr. distribution Units: ☑ Yes ☐ No

Grounding System: (Rate) ☐ Great ☐ Good ☑ Average ☐ Poor

System Type: LINEAR

Equipment Grounding Description:

Surge Suppression Devices:

Comments:

UPS System: (Rate) ☐ Great ☑ Good ☐ Average ☐ Poor

Manufacturer: MITSUBISHI **Model #:** 2033A

# of Units: 1 **kVA:** **Battery Capacity:** 30

Condition and Comments:

Logging Recorder Manuf.: DICTAPHONE **Model #:**

Channel Capacity: **# of Channels Used:**

CONFIDENTIAL

Comments:

Fire Station Alerting Make		**Model:**	
Paging:		**Model:**	
Netclock:	SPECTRACOM	**Model:**	NETCLOCK/GPS

# of Dispatch Only Positions:	6	**# of Call Taker Only Positions**	
# of Supervisor Positions:		**# of Spare Positions:**	

Control Stations	**Location**	**Qty**

Agencies Dispatched:

Notes:

Mobile Data Equipment **Make** **Model #:**

Console Equip. Type

Incoming Circuits (connectivity):

Central Electronics Equipment

Manufacturer: **Model #:**

Notes:

Racks:

Dispatch/Radio Position	**# of Positions** 6	**Monitors**	**Application**
☑ **Monitor**		**Monitor 1**	PHONE
☑ **Mouse**		**Monitor 2**	CAD
☑ **Desktop**		**Monitor 3**	CAD
☑ **Headset**		**Monitor 4**	CAD
☑ **Footswitch**		**Monitor 5**	RADIO
☐ **PBX/KTS Telephone Se**		**Control Station**	

Console Make:

Console Model #

Notes:

Call Taker Position	**# of Positions**	**Monitors**	**Application**
☐ **Monitor**		**Monitor 1**	
☐ **Mouse**		**Monitor 2**	
☐ **Desktop**		**Monitor 3**	
☐ **Headset**		**Monitor 4**	
☐ **Footswitch**		**Monitor 5**	
☐ **PBX/KTS Telephone Se**		**Control Station**	

Console Make:

Console Model #

Notes:

Supervisor Position	# of Positions	Monitors	Application
☐ Monitor		Monitor 1	
☐ Mouse		Monitor 2	
☐ Desktop		Monitor 3	
☐ Headset		Monitor 4	
☐ Footswitch		Monitor 5	
☐ PBX/KTS Telephone Se		Control Station	

Console Make:

Console Model #

Notes:

Customer Premise Equipment:

Computer Terminals and Moniters

CAD:	☑ Yes	☐ No	**State Criminal Database**	☑ Yes	☐ No
Federal NCIC	☑ Yes	☐ No	**Alarm**	☑ Yes	☐ No
Security Video Monitor	☑ Yes	☐ No	**System Manager**	☐ Yes	☐ No

Notes:

Other Miscellanous Equipment:

Appendix C

Surveyor Results

Appendix C – Surveyor Results

In order to identify current problems and the future radio system needs of Contra Costa and Alameda Counties, an online survey was used to obtain this critical information. This appendix summarizes the results of the On-line Survey. Although the number of participants from each agency was not sufficient to make definitive statements, the trends reported in the online survey align with the information that was reported during group agency meetings and provide a snap shot of the existing problems with the aging radio systems in both counties. A list of the survey questions is provided in SECTION C.6.

C.1 Survey Reported Radio Problems

Alameda County and Contra Costa users, dispatchers and technical points of contact were asked to participate in an online survey that captured some information about their current communication systems. TABLES C-1 and C-2 summarize the problems for trunked and conventional radio systems for Alameda County. TABLES C-3 and C-4 summarize the problems for trunked and conventional for Contra Costa County. The tables indicate the level or seriousness of the perceived problems. Problems are listed in order of "overall" severity and are also ranked by discipline: fire, law enforcement, and all others.

C.2 Radio Problem Descriptions

The problem areas summarized in TABLES C-1 through C-4 are defined below. The headings listed below correspond to the "Problem" Column of Tables C-1 through C-4. Two separate lists of problems are shown below, one for trunked radio systems and one for conventional radio systems. Although there are many similarities between the two lists, some of the problems are unique to each type of radio system.

Problem Descriptions for Trunked Radio Systems (Tables C-1 and C-3):

Capacity -- The system has insufficient capacity to support traffic associated with peak or emergency conditions.

Complex Operation -- The radio is complicated to operate or the radio user needs to know the characteristics of the system, which could cause difficulty if the user is in a high-pressure situation.

Dispatcher Access -- For whatever reason, the dispatcher or the user cannot gain access to each other on a routine basis. Either the user must compete for the dispatcher's time, or the dispatcher has no way to contact the user.

Equipment Maintainability -- Maintenance is inadequate on user equipment (including consoles and desk top units); the user regularly needs to return to get the same thing fixed.

Indoor Portable Operation -- Portable units cannot reliably be used in the system, particularly indoors.

Interference -- Users from your own or other localities interfere and step on the local users. This either overrides critical communications or forces messages to be repeated.

Interoperability -- The system does not allow users the ability to communicate between agencies within the jurisdiction.

Limited Coverage -- Dead spots regularly occur, particularly between dispatcher and user.

Outdoor Portable Operation -- Portable units cannot reliably be used in the system, particularly outdoors.

Regional Interoperability -- The system does not allow users the ability to communicate between agencies outside of the jurisdiction.

System Busies – The user has to wait to gain access to the radio system, not because someone is using the talkgroup, but because a channel is not available.

System Reliability -- There are frequent breakdowns of old or poorly maintained infrastructure equipment.

Talk Group Congestion -- On your radio system, too much unrelated chatter from other users is heard; user tends to turn volume down unless they specifically need to call someone, and thus cannot be reached.

Problem Descriptions for Conventional Radio Systems (Tables C-2 and C-4):

Capacity -- The system has insufficient capacity to support traffic associated with peak or emergency conditions.

Channel Congestion -- Too many unrelated functions using the channel; user tends to turn volume down unless they specifically need to call someone, and thus cannot be reached.

Channel Unavailable -- Too many users on the channel; user cannot gain access when the situation requires communications with other units or with the dispatcher.

Complex Operation -- The radio is complicated to operate or the radio user needs to know the characteristics of the system, which could cause difficulty if the user is in a high-pressure situation.

Dispatcher Access -- For whatever reason, the dispatcher or the user cannot gain access to each other on a routine basis. Either the user must compete for the dispatcher's time, or the dispatcher has no way to contact the user.

Equipment Maintainability -- Maintenance is inadequate on user equipment (including consoles and desk top units); the user regularly needs to return to get the same thing fixed.

Indoor Portable Operation -- Portable units cannot reliably be used in the system, particularly indoors.

Interference -- Users from your own or other localities interfere and step on the local users. This either overrides critical communications or forces messages to be repeated.

Interoperability -- The system does not allow users the ability to communicate between agencies within the jurisdiction.

Limited Coverage -- Dead spots regularly occur, particularly between dispatcher and user.

Mobile to Mobile -- Users cannot talk between mobile units more than a short distance.

Outdoor Portable Operation -- Portable units cannot reliably be used in the system, particularly outdoors.

Regional Interoperability -- The system does not allow users the ability to communicate between agencies outside of the jurisdiction.

System Reliability -- There are frequent breakdowns of old or poorly maintained infrastructure equipment.

Rating Scale:

0 - No problem identified.

1 - Identified problem, currently not of concern. May become a concern in the future.

2 - Occasionally a problem which affects some operations but is generally worked around.

3 - Regularly a problem, operations are routinely affected to the extent there is a loss of operational efficiency.

4 - Frequently a problem, frequently affects operations, compromises the ability of the user to fulfill his mission.

5 - Critical concern, usually affects operations, potential compromise to safety of user or of citizen.

C.3 EBRCS Radio System Requirements

Alameda and Contra Costa County member agency users, dispatchers and technical points of contact were asked to participate in an online survey that captured their needs in the new radio system. These results are shown in TABLE C-5. Needs are listed in order of “overall” importance and are also ranked by discipline: fire, law enforcement, and all others.

The online survey results indicate that users are very concerned with the following attributes in a new radio system:

- Power Backup
- Reliability/Failure Hierarchy
- Survivability
- Single Points of Failure
- Improved Voice Radio Coverage
- In-Building Coverage
- Staffing and Training
- Minimize Interference
- Emergency Alerting
- Operational Boundary Transparency
- Future Expansion
- Owner-Controlled Connectivity Network
- Interoperability with Adjacent Localities
- Recorder Operations

- Microwave Additional Capacity
- Centralized Maintenance
- Regional Connectivity

C.4 System Attribute Descriptions

The attributes summarized in TABLE C-5 are defined below. The headings listed below correspond to the "Ref" Column in Tables C-5.

Reference Column Descriptions:

a. **Improved Voice Radio Coverage:** The system shall provide a signal availability of 95 percent to/from mobile radios, with coverage evenly distributed over the service area for all operational functions.

b. **In-Building Coverage:** The system shall provide a signal availability of 95 percent to/from portables in building.

c. **Minimize Interference:** The system should minimize or eliminate interference.

d. **Increased Channel Capacity:** The system design shall include additional channels for current and future capacity. Additional channels are important to alleviate congestion on the dispatch and incident channels.

e. **On-Scene Fireground/Tactical Communications Channels:** Direct radio-to-radio frequencies (firegrounds) enable local incident communications in-building, below grade, and in other situations where repeated channels do not offer solid coverage.

f. **Monitored Firegrounds:** Fireground communications must be available to be monitored by dispatch, command personnel, or recording.

g. **Emergency Alerting:** The radios and system shall provide an emergency function for alerting dispatch and supervisors to the need for assistance.

h. **Workgroup Oriented Operation:** The system shall be organized with sufficient channels or talk-groups to allow departmental workgroups to have their own channel or talk group.

i. **Voice Security:** The system shall provide encrypted communications for users that need to prevent unauthorized interception of sensitive information.

j. **Operational Boundary Transparency:** System operation will be logical, with the focus on whom the user wants to call rather than where they are located. Changes in the user agencies' operational boundaries shall be transparent to radio users. The radio system shall allow any group or department to operate with full communications capability within the service area.

k. **One System Serves All Agencies:** Convenient, same-radio communications is important between all Public Safety agencies within the locality.

l. **Interoperability through Dispatch:** The radio system shall provide a connection between all dispatch operations allowing dispatchers to facilitate information flow between agencies through dispatch and incident command, rather than at the user level.

m. **Interoperability with Adjacent Localities:** The radio system design shall emphasize compatibility with radio systems in the adjacent localities to enable

public safety users to assist in adjacent counties (and vice versa) and communicate with users from other Public Safety agencies using their assigned radios.

n. **Interoperability with State Agencies:** The radio system design should emphasize compatibility with radio systems in use by the State to facilitate communications with State agencies.

o. **Interoperability with Federal Agencies:** While local agencies cannot operate radio on Federal channels, compatible equipment would facilitate Federal/local cooperative efforts if Federal users could communicate over the locality infrastructure.

p. **Person Location:** Dispatch can determine the location of a user (to his portable or mobile radio), useful for example when sending assistance.

q. **System Control:** The Locality is significantly more comfortable with the high level of system control that comes with exclusive use and system ownership.

r. **Text Messaging:** The mobiles and portable radios shall be capable of text messaging.

s. **Dual Band Operation:** The user radios need to operate on VHF and 700 / 800 MHz.

t. **Recorder Operations:** Logged audio is important for all dispatch and incident communications.

u. **Vehicle Location**: Automatic vehicle location (AVL) shall allow vehicles to be located by dispatch.

v. **Future Expansion**: The system shall be capable of future expansion in the number of channels and the number of users. System design shall incorporate expansion to the level of usage predicted for the next 15 years with only the addition of equipment.

w. **Owner-Controlled Connectivity Network:** The system shall be interconnected using a dedicated interconnecting backbone network, such as microwave or fiber. The goal is to maximize reliability, minimize use of leased carriers and associated costs, and maintain control of the network. Additionally, a dedicated, highly reliable network interconnecting all major radio locations is highly desired. This can be via microwave or fiber.

x. **Microwave Additional Capacity**: The network design shall include extra capacity, over and above the radio and mobile data needs, for other Locality uses.

y. **Regional Connectivity**: The system design shall provide infrastructure connectivity to adjacent areas.

z. **OTAP**: The system shall provide for Over-the-Air-Programming of radios.

aa. **OTAR:** The system shall provide for Over-the-Air-Rekeying of encrypted radios.

bb. **Over-the-Air-Reflash**: The system shall provide for over-the-air upgrades to operating software or new software versions for mobiles and portables.

cc. **Survivability**: The system shall be designed to survive in severe weather or emergency conditions. If dispatch points are shifted from their primary to a backup location, radio control shall be available at the backup location to the same degree it was available at primary dispatch.

dd. **Reliability/Failure Hierarchy**: The radio system and equipment must be designed such that single-mode failures do not perceptibly impact the routine operations of the system.

The following requirements shall apply to failure conditions:

- Channel failure: no operating impact due to failed voice channel.
- Site failure: no operating impact except reduced coverage area.
- Primary power failure: UPS backup shall be supplied for all communications equipment, and generator backup for the radio equipment.
- Console failures: Single console failure: use reserve console. Console common equipment failure: dispatchers operate co-located radio control station.
- Communications Center failure: Dispatch using radio control stations at a backup dispatch center.

ee. **Single Points of Failure**: The system shall, as much as practical, minimize single points of failure. This is accomplished through redundant equipment, multi-node network design, distributed processing, backup equipment, etc.

ff. **Power Backup**: All fixed radio equipment shall require backup power with automatic transfer, capable of handling 100 percent loading of radio equipment. An uninterruptible power system (UPS) shall be required for all communications equipment.

gg. **Staffing and Training**: The system vendor shall provide formal training for system administrators, supervisors, dispatchers, radio users, and maintenance technicians.

hh. **Centralized Maintenance**: The Locality / Agency prefers to centrally maintain and administer the radio system, dispatch systems, and user radios, either in-house or using a service shop. Centralized maintenance provides consistent and coordinated services for all user departments.

ii. **Competitive Procurement Process**: The overall system concept shall be available from more than one vendor allowing a competitive procurement process. Equipment shall be procured using open non-restrictive, competitive specifications. Award to be based on the most cost-effective system meeting the specified operational and functional requirements.

jj. **Commonality of Equipment**: A single vendor shall install and supply all required equipment; as much as possible, user equipment shall be similar in operation and maintenance requirements. The goal is to minimize spare parts inventory and multiple vendor training requirements.

kk. **Multiple Sources**: Compatible user equipment shall be available from multiple vendors. Competitive procurement of user equipment is more important than equipment commonality.

ll. **Phased Implementation**: As much as possible, system procurement and implementation shall occur on a phased basis, allowing costs to be spread over several years. The radio system shall be designed to add user groups to the system over time.

mm. **Tiered Subscriber Cost**: High-, mid-, and low-tier radio equipment with feature sets and costs matched to the user group shall be provided.

Users ranked the attributes utilizing the following scale:

Rating Scale:

0. Attribute is NOT IMPORTANT to the user.

1. Attribute is MINIMALLY IMPORTANT to the user.

2. Attribute is NICE TO HAVE, could enhance operations.

3. Attribute is USEFUL, will promote more efficient day to day operation.

4. QUITE IMPORTANT, lack could result in degradation of mission, injury, or loss of property.

5. CRITICAL, lack generally will result in injury, loss of property, or degradation of mission.

C.5 Additional Survey Comments

The survey respondents were given the opportunity to provide additional comments in a free form text format. These comments are provided in their unedited form in TABLES C-6 through C-9.

C.6 Survey Questions

This section presents the CTA Surveyor questions used for the EBRCSA survey. Each section contains a group of related questions, such as Current Trunked Radio System Assessment or Current Conventional Radio System Assessment.

User Information - Initial Questions

Note: These questions gather information about the survey participant.

Is your radio system Trunked or Conventional?

Trunked
Conventional

Your radio system is trunked if you use talk groups. Trunked systems are typically at 700, 800 or 900 MHz. Your radio system is conventional if you use channels or frequencies. Conventional radio systems are typically at high band, VHF or UHF frequencies.

Are you a manager or administrator of the radio system?

Yes
No

You manage or administer the radio system.

Do you use or carry a Pager in your work?

Yes
No

You carry a pager, or you send out pages over a paging system as a part of your work.

Do you use Mobile Data in your work (laptop or mobile data computer in your vehicle connected to the radio or via an "air card")?

Yes
No

Answer "Yes" if you use mobile data.

Do you have Mobile Data on your system?

Yes
No

Answer "Yes" if you use mobile data.

Are you a Dispatcher?

Yes
No

Are you a Supervisor?

Yes
No

Do you have mobile data on your system; that is, a laptop or mobile data computer in the vehicle either connected to the radio or via an "air card"?

Current Conventional Voice Radio System Assessment

This section will only be presented if the survey participant answers “Conventional” to the question “Is your radio system Trunked or Conventional?

Rating Scale and Problem Descriptions are shown in Section C-2:

Current Trunked Voice Radio System Assessment

This section will only be presented if the survey participant answers “Trunked” to the question “Is your radio system Trunked or Conventional?

Rating Scale and Problem Descriptions are shown in Section C-2:

Paging System

This section and the Current Paging System Assessment section will only be presented if the survey participant answers “Yes” to the question “Do you use a pager in your work?”

What Type of Paging System Do You Use?

Tone and Voice Pager
Digital pager
Other

Current Paging System Assessment

Rating Scale:

0. No problem identified.
1. Identified problem, currently not of concern. May become a concern in the future.
2. Occasionally a problem which affects some operations but is generally worked around.
3. Regularly a problem, operations are routinely affected to the extent there is a loss of operational efficiency.
4. Frequently a problem, frequently affects operations, compromises the ability of the user to fulfill his mission.
5. Critical concern, usually affects operations, potential compromise to safety of user or of citizen.
6. Don't Know, insufficient information available to answer this question.

Limited Coverage: With your current paging system, do you experience dead spots or have limited coverage?
Limited Coverage -- Dead spots regularly occur; can't receive a page.

Indoor Pager Operation: Do you receive your pages reliably, particularly indoors?
Indoor Pager Operation -- Pagers cannot generally and reliably be used in the system, particularly indoors.

Interference: If you have a tone & voice pager, do pages from another locality cause interference? (If you have a digital pager, please leave blank or answer "Don't Know").
Interference – Pages from other locations are heard and interfere, creating interference.

System Reliability: How reliable is your paging system?
Reliability -- Frequent breakdowns of old or poorly maintained equipment, generally infrastructure equipment.

Equipment Maintainability: Is maintenance on your pager adequate, or do you regularly need to get the same thing fixed?
Equipment Maintainability -- Maintenance is inadequate on paging (user) equipment; the user regularly needs to return to get the same thing fixed.

Mobile Data

The Mobile Data sections will only be presented if the survey participant answers "Yes" to the question "Do you use mobile data in your work?"

Mobile Data Information

Current Mobile Data Operations

Do you use mobile data on a radio system, a commercial (cellular) data service provider or both?

Your radio system may provide the ability to have mobile data. Mobile data may be provided by a commercial data services provider or cellular provider via an "air card."

Radio System
Commercial Data Service Provider

Both

If your mobile data is on a radio system, what is the frequency band?

Low Band
VHF
UHF
700 MHz
800 MHz
900 MHz
Other

What Type of Mobile Data Equipment Do You Use?

Laptops
Mobile Data Computers or Terminals
Other

If you selected "Other," please describe.

Mobile Data Applications

Does your mobile data system support GPS or Automatic Vehicle Location (AVL)?

Does your mobile data system support sending fingerprints?

Does your mobile data system support sending maps or geo-files?

Does your mobile data system support sending images?

Does your mobile data system support video?

Current Mobile Data Assessment

Rating Scale:
0. No problem identified.
1. Identified problem, currently not of concern. May become a concern in the future.
2. Occasionally a problem which affects some operations but is generally worked around.
3. Regularly a problem, operations are routinely affected to the extent there is a loss of operational efficiency.
4. Frequently a problem, frequently affects operations, compromises the ability of the user to fulfill his mission.
5. Critical concern, usually affects operations, potential compromise to safety of user or of citizen.
6. Don't Know, insufficient information available to answer this question.

Limited Data Coverage: When you use mobile data, do you experience areas of limited data coverage?
Limited Data Coverage Area -- Dead spots regularly occur,

Access: Can you gain access to the mobile data system when you need to?
Access -- User cannot gain access when the situation requires data communications.

Capacity: Does the system have sufficient capacity to support mobile data during peak or emergency conditions?
Capacity -- The system has insufficient capacity to support traffic associated with peak or emergency conditions.

System Reliability: Are there frequent problems; does the equipment breakdown?
System Reliability -- Frequent breakdowns of old or poorly maintained equipment, including infrastructure equipment.

Complex Operation: How easy is it to operate the laptop, MDC or the mobile data application?
Complex Operation -- The mobile data application is complicated to use, which could cause difficulty if the user is in a high-pressure situation.

Dispatcher Access: Can you gain access to the dispatcher via the mobile data system?
Dispatcher Access -- For whatever reason, the dispatcher or the user cannot gain access to each other via the data system on a routine basis.

Equipment Maintainability: Is maintenance on your laptop or MDC adequate, or do you regularly need to get the same thing fixed?
Equipment Maintainability -- Maintenance is inadequate on user equipment; the user regularly needs to return to get the same thing fixed.

Data Speed: Does it take a long time to send or receive a message?
Data Speed—It takes a long time to send and / or receive a message, or the message has to be resent.

Current Dispatch Center - Assessment

The Dispatch Center section will only be presented if the survey participant answers "Dispatcher" to the question "Are you a Radio User or a Dispatcher?"

Rating Scale:
0. No problem identified.
1. Identified problem, currently not of concern. May become a concern in the future.
2. Occasionally a problem which affects some operations but is generally worked around.
3. Regularly a problem, operations are routinely affected to the extent there is a loss of operational efficiency.
4. Frequently a problem, frequently affects operations, compromises the ability of the user to fulfill his mission.
5. Critical concern, usually affects operations, potential compromise to safety of user or of citizen.
6. Don't Know, insufficient information available to answer this question.

Complex Operation: How difficult is it to operate your radio console on the system?
Complex Operation – The radio console is complicated to operate. This could cause difficulty in a high-pressure situation.

Paging Operation: If you send out pages, how cumbersome or difficult is it to send out a page on the system?
Complex Operation – The paging system is complicated to operate, which could cause difficulty in a high-pressure situation.

Dispatch Center Size: Does your dispatch center have sufficient space to comfortably house all necessary personnel for the current dispatch operation as well as space for expected growth?
Dispatch Center Size –The dispatch center has sufficient space to comfortably house the dispatchers, call-takers, management and supervision, and technical support for the current dispatch operation as well as space for expected growth.

Equipment Area Size: Does your dispatch center have sufficient space to comfortably house the equipment used to support the current dispatch operation as well as space for expected growth?
Equipment Area Size - The dispatch center has sufficient space to comfortably house the equipment used to support the current dispatch operation as well as space for expected growth. There is sufficient space for consoles, radios, telephones, and computers.

Expansion Capacity: Does your dispatch center have sufficient unused space to expand both the dispatching area and equipment space?

Radio Console System: Does the console system adequately interface with and support the radio system and is it easy to operate?
Radio Console System - The Console system adequately interfaces with and supports the radio system. Dispatchers easily operate the console system features. All controls and information readouts shall be clear and easily understood. The system supports headsets, foot controls, select and unselect audio, and other modern features.

CAD System: Does the CAD system adequately interface and support the records management system and is it easy to operate?
CAD System - The CAD system adequately interfaces and supports the records management system. The dispatchers easily operate the system features. All controls and information readouts are clear and easily understood. The technology makes the dispatch and call taking easier not more difficult. The system aids the dispatcher and call takers in answering calls, event locations, unit selection, report and incident numbering, and associative needs. Systems shall be designed for single entry and automation when possible to reduce work activities.

CPE System: Does the 911 telephone system (CPE) operate easily and seamlessly for all in-coming 911 calls and out-going transfers?
CPE System - The 911 telephone system (CPE) operates seamlessly all in-coming 911 calls and out-going transfers. All controls and information shall be easy to read and understandable. The system requires few buttons pushes in operations. PBX/Admin Telephones - The PBX telephone system operates seamlessly all in-coming administrative calls and all out-going telephone lines. All controls and information are easy to read and understandable. The system requires few buttons pushes in operations.

PBX/Admin Telephones: Does the PBX telephone system operate easily and seamlessly handles all in-coming administrative calls and all out-going telephone lines?
PBX/Admin Telephones - The PBX telephone system operates seamlessly. All in-coming administrative calls and all out-going telephone lines. All controls and information are easy to read and understandable. The system requires few buttons pushes in operations.

Furniture: Is the furniture a full featured design that allows raising and lowering the work positions, tilting work surfaces and management of the required cables and power cords?
Furniture - The furniture is a full featured design. The design allows raising and lowering the work positions, tilting work surfaces, management of the required cables and power cords. The design of the furniture assists the dispatcher and call takers with a convenient and comfortable layout.

Lighting: Is the dispatch center lighted in such a manner as to improve the operating environment, including individual controlled task lighting, natural light and/or windows, and in-direct lighting?

HVAC: Does the dispatch center have an effective heat and air conditioning system that provides for a wide range of temperature conditions, as well as provide for sufficient air movement?
HVAC - The dispatch center has an effective heat and air conditioning system that provides for a wide range of conditions, from chilly nights to hot days. Humidity is controlled. There is sufficient movement of air and infusion of fresh air to allow the dispatch area to have a non-stuffy atmosphere.

Reliability: Are the systems that support the dispatch operation reliable?
Reliability - The systems that support the dispatch operation shall be reliable. Failures shall be far between and the dispatcher shall have a sense of confidence that the systems will be running when needed.

Back-Up Provisions: Is there an alternative dispatch center that is capable, when staffed, of performing the emergency functions performed at the primary center?
Back-Up Provisions – An alternative dispatch center is maintained that is capable, when staffed, of performing the emergency functions performed at the primary center. The alternate center is separated sufficiently from the primary center to ensure the survivability of the alternate center.

Maintainability: When a system or device fails are the repairs quickly begun and performed?
Maintainability - In the rare occasions when a system or device fails the repairs are quickly begun and performed. Overall there is a high confidence level that the system will be kept running.

Parking: Is there an easily accessible, well-lighted and secure parking facility?
Parking - The Dispatch center has easy outside parking access with mass transit and traffic access. The parking lot shall be well lighted and secure.

Internal Facilities: Does the dispatch center have adequate break areas, restrooms, and quiet rooms?
Internal Facilities - The dispatch center is designed with adequate break areas, restrooms, and quiet rooms. The restrooms are located near to but not in the dispatch area. There are un-recorded telephones for personal use.

Security: Is there controlled access to the Dispatch Center using locked doors and closed circuit cameras for entrance controls?
Security - The Dispatch center is designed with controlled access to the Center using locked doors and closed circuit cameras for entrance controls. The exterior of the facility is well lighted and secure.

Dispatch Center Condition: Is the Dispatch Center neat, clean and organized?

Equipment Area Condition: The equipment area is neat and clean; the equipment is installed in a professional manner.

Radio Equipment – Current Quantities

The Radio Equipment sections will only be presented if the survey participant answers "Yes" to the question "Are you a manager or administrator of the radio system?"

Current Radios in Operation (Not Including Spares)

For each equipment category, enter the total number of units you operate (not including spares) for each frequency band.

Equipment Type	*Low Band*	*VHF*	*UHF*	*Dual Band 700 / 800 MHz*	*800 MHz*	*900 MHz*
Mobiles						
Portables						
Desktop or Control Stations						

Min: 0
Max: 9999

Current Spare Radios in Inventory

For each equipment category, enter the total number of spare units you have in inventory for each frequency band.

Equipment Type	*Low Band*	*VHF*	*UHF*	*Dual Band 700 / 800 MHz*	*800 MHz*	*900 MHz*
Mobiles						
Portables						
Desktop or Control Stations						

Min: 0
Max: 9999

Mobile Data Equipment – Quantities

The Mobiles Data Equipment sections will only be presented if the survey participant answers “Yes” to the questions “Are you a manager or administrator of the radio system?” and “Do you have Mobile Data on your system?

Current Equipment in Operation (Not Including Spares)

Please enter the number of current laptops or MDCs you have in operation (not including spares).

Min: 0
Max: 9999

Current Spare Equipment in Inventory

Please enter the number of spare laptops or MDCs you have in inventory.

Min: 0
Max: 9999

Immediate Needs

Are the radio equipment quantities you entered in the previous section sufficient for your current staffing needs?

Immediate Radio Equipment Needs

This section will only be presented if the survey participant answers "Yes" to the previous question.

For each equipment category, enter the total number of units you need today for each frequency band.

Equipment Type	*Low Band*	*VHF*	*UHF*	*Dual Band 700 / 800 MHz*	*800 MHz*	*900 MHz*
Mobiles						
Spare Mobiles						
Portables						
Spare Portables						
Desktop or Control Stations						
Spare Desktop or Control Stations						

Min: 0
Max: 9999

Additional Mobile Data Needs

Additional Laptops or MDCs: Please enter the number of additional laptops or MDCs you need today but do not have (not including spares).

Additional Spare Laptops or MDCs: Please enter the number of additional laptops or MDCs you need in inventory but do not have today.

Min: 0
Max: 9999

Radio Equipment – Forecasted Quantities

Enter the percentage increase in the quantities of user equipment estimated to be needed 5, 10 and 15 years from now. For example, if you currently have 500 mobiles, 300 portables, and 20 desktop stations, and you enter 10 (percent), this means you would need 50 more mobiles, 30 more portables, and 2 more Desktop stations in 5 years. This is a rough estimate, and so will be applied across each radio type (mobiles, portables, control stations). Note that the range is 0% to 1000%, allowing for no increase to up to 10 times as many radios as currently in place. It would be unusual for increases over 50%, unless you are expecting significant growth, or planning consolidation with other Agencies on a shared system, for example

	5 Years	*10 Years*	*15 Years*
What percentage increase in equipment do you forecast for 5, 10, and 15 years out?			

Interoperability Continuum – Governance

The Interoperability sections will only be presented if the survey participant answers "Yes" to the question "Are you a manager or administrator of the radio system?"

SAFECOM Interoperability Continuum - Governance

Governance
A common governing structure for solving interoperability issues will improve the policies, processes, and procedures of any major project by enhancing communication, coordination, and cooperation, establishing guidelines and principles, and reducing any internal jurisdictional conflicts. This group should consist of local, tribal, state, and federal entities as well as representatives from all pertinent public safety disciplines within the identified region. A formal governance structure is critical to the success of interoperability planning.

Rating Scale
1- Individual Agencies Working Independently
2- Informal Coordination Between Agencies
3- Key Multi-Discipline Staff Collaboration on a Regular Basis
4- Regional Committee Working with a Statewide Communications Interoperability Plan Framework
5- Don't Know

Please select the response that best describes your interoperability governance structure with other disciplines within your own jurisdiction or locality.

Please select the response that best describes your interoperability governance structure with other agencies outside your jurisdiction or locality.

Please select the response that best describes your interoperability governance structure between state and local government.

Please select the response that best describes your interoperability governance structure between federal and local government.

Interoperability Continuum – Standard Operating Procedures

SAFECOM Interoperability Continuum - Standard Operating Procedures

Standard Operating Procedures
Standard Operating Procedures (SOPs) are formal written guidelines or instructions for incident response. SOPs typically have both operational and technical components. Established SOPs enable emergency responders to sucessfully coordinate an incident response across disciplines and jurisdictions. Clear and effective SOPs are essential in the development and deployment of any interoperable communications system.

Rating Scale
1- Individual Agency SOPs
2- Joint SOPs for Planned Events
3- Joint SOPs for Emergencies
4- Regional Set of Communications SOPs

5- National Incident Management (NIMS) Integrated SOPs
6- Don't Know

Please select the response that best describes your Standard Operating Procedures for interoperability with other disciplines within your own jurisdiction or locality.

Please select the response that best describes your Standard Operating Procedures for interoperability with agencies outside your jurisdiction or locality.

Please select the response that best describes your Standard Operating Procedures for interoperability between state and local government.

Please select the response that best describes your Standard Operating Procedures for interoperability between federal and local government.

Interoperability Continuum – Technology - Voice

SAFECOM Interoperability Continuum – Technology - Voice

Technology
Although technology is a critical tool for improving Interoperability, it is not the sole driver of an optimal solution. Success in each of the other elements is essential to its proper use an implementation, and should drive technology procurement. Technology is highly dependent upon existing infrastructure within a region. Multiple technology solutions may be required to support large events.

Rating Scale
1- Swap Radios
2- Gateway
3- Shared Channels
4- Proprietary Shared Systems
5- Standards-based Shared Systems
6- Don't Know

Please select the response that best describes the technology or your means of interoperability with other disciplines within your own jurisdiction or locality.

Please select the response that best describes the technology or your means of interoperability with other agencies outside your own jurisdiction or locality.

Please select the response that best describes the technology or your means of interoperability between state and local government.

Please select the response that best describes your interoperability governance structure between federal and local government.

Interoperability Continuum – Technology – Data

SAFECOM Interoperability Continuum – Technology Data

Technology
Although technology is a critical tool for improving Interoperability, it is not the sole driver of an optimal solution. Success in each of the other elements is essential to its proper use an implementation, and should drive technology procurement. Technology is highly dependent upon existing infrastructure within a region. Multiple technology solutions may be required to support large events.

Rating Scale
1- Swap Files
2- Common Applications
3- Custom-Interfaced Applications
4- One-Way Standards-based Sharing
5- Two-Way Standards-based Sharing
6- Don't Know

Please select the response that best describes the technology or your means of data interoperability with other disciplines within your own jurisdiction or locality.

Please select the response that best describes the technology or your means of data interoperability with other agencies outside your own jurisdiction or locality.

Please select the response that best describes the technology or your means of data interoperability between state and local government.

Please select the response that best describes the technology or your means of data interoperability between federal and local government.

Interoperability Continuum – Training and Exercises

SAFECOM Interoperability Continuum - Training & Exercises

Training & Exercises
Proper training and regular exercises are critical to the implementation and maintenance of a successful interoperability solution. Implementing effective training and exercise programs to practice communications interoperability is essential for ensuring that the technology works and responders are able to effectively communicate during emergencies.

Rating Scale
1- General Orientation on Equipment
2- Single Agency Tabletop Exercises for Key Field and Support Staff
3- Multi-agency Tabletop Exercises for Key Field and Support Staff
4- Multi-agency Full Functional Exercises Involving All Staff
5- Regular Comprehensive Regional Training and Exercises
6- Don't Know

Please select the response that best describes your interoperability training and exercises with other disciplines within your own jurisdiction or locality.

Please select the response that best describes your training and exercises for interoperability with agencies outside of jurisdiction.

Please select the response that best describes your training and exercises for interoperability between state and local government.

Please select the response that best describes your training and exercises for interoperability between federal and local government.

Interoperability Continuum – Usage

SAFECOM Interoperability Continuum – Usage

Usage
Usage refers to how often interoperable communications technologies are used. Success in this element is contingent upon progress and interplay among the other four elements on the Interoperability Continuum.

Rating Scale
1- Planned Events
2- Localized Emergency Incidents
3- Regional Incident Management
4- Daily Use Throughout Region
5- Don't Know

Please select the response that best describes how often you use interoperability with other disciplines within your own jurisdiction or locality.

Please select the response that best describes how often you use interoperability with other agencies outside your jurisdiction.

Please select the response that best describes how often you use interoperability between state and local government.

Please select the response that best describes how often you use interoperability between federal and local government.

Voice Interoperability Assessment

In this Voice Interoperability Assessment section, you will be asked to describe how your interoperability, using voice radio, with other Agencies. There are four groups of questions - interoperable communications within your jurisdiction, between jurisdictions, with State agencies, and with Federal agencies.

Please answer all questions to the best of your ability.

Clicking on any Question will provide "Help" in this screen. Click in the response field to the right of the Question to provide your response.

You can change any response.

Current Interoperability

The section asks who you have interoperability with currently, within your jurisdiction or locality, outside your jurisdiction or locality, with state agencies and with federal agencies.

What disciplines within your jurisdiction do you currently have interoperability with?

Select all that apply – Disciplines within your jurisdiction that your Agency currently has interoperability with. If you do not have interoperability with any other disciplines, check "None".

Law Enforcement - Sheriff
Law Enforcement - Police

Law Enforcement - Tribal
Fire
EMS
Emergency Management
Hospitals
Correctional Facilities
Local Public Works
Other Local Government
Other Tribal Government
Other
None

What disciplines outside your jurisdiction do you currently have interoperability with?

Select all that apply – Disciplines outside your jurisdiction that your Agency currently has interoperability with. If you do not have interoperability with any other disciplines, check "None".

Law Enforcement - Sheriff
Law Enforcement - Police
Law Enforcement - Tribal
Fire
EMS
Emergency Management
Hospitals
Correctional Facilities
Local Public Works
Other Local Government
Other Tribal Government
Other
None

What State Agencies are you currently able to communicate with? (List must be customized for applicable state)
Select all that apply - State Agencies that your Agency communicates with. If you do not communicate with any State Agencies, check "None".

State Police
Fish and Game
Homeland Security
Dept. of Agriculture
Dept. of Commerce
Corrections
Health
Emergency Management
Human Services
Information Technologies
National Guard
Transportation Dept.
Other
None

What Federal Agencies are you currently able to communicate with?
Select all that apply - Federal Agencies that your agency communicates with. If you do not communicate with any Federal Agencies, check "None".

Alcohol, Tobacco, and Firearms
Bureau of Land Management

Drug Enforcement Administration
Dept of Interior
Dept of Homeland Security
Environmental Protection Agency
Federal Bureau of Investigation
National Parks Service
Natural Resource Conservation Service
Secret Service
Transportation Security Agency
US Dept of Agriculture
US Forest Service
US Fish and Wildlife Service
US Marshals
US Postal Service
Other
None

If you selected "Other" for having interoperability with any local, state or federal disciplines or agencies, please enter the agencies here.
List the specific disciplines that you have interoperability with that are not listed above.

Need Interoperability

What disciplines in your jurisdiction do you need to communicate with, but cannot?
Select all that apply – Disciplines that your Agency is not currently able to interoperate with. If you do not communicate with any other disciplines, check "None".

Law Enforcement - Sheriff
Law Enforcement - Police
Law Enforcement - Tribal
Fire
EMS
Emergency Management
Hospitals
Correctional Facilities
Local Public Works
Other Local Government
Other Tribal Government
Other
None

What disciplines outside of your jurisdiction do you need to communicate with, but cannot?
Select all that apply – Disciplines that your Agency is not currently able to interoperate with. If you do not communicate with any other disciplines, check "None".

Law Enforcement - Sheriff
Law Enforcement - Police
Law Enforcement - Tribal
Fire
EMS
Emergency Management
Hospitals
Correctional Facilities
Local Public Works
Other Local Government
Other Tribal Government
Other

None

What State Agencies or disciplines do you need to communicate with, but cannot? (List must be customized for applicable state)
Select all that apply - State Agencies that your Agency is not currently able to interoperate with. If you do not communicate with any other disciplines, check "None".

State Police
Fish and Game
Homeland Security
Dept. of Agriculture
Dept. of Commerce
Corrections
Health
Emergency Management
Human Services
Information Technologies
National Guard
Transportation Dept.
Other
None

What Federal Agencies or disciplines do you need to communicate with, but cannot? (List must be customized for applicable state)
Select all that apply – Federal Agencies that your Agency is not currently able to interoperate with. If you do not communicate with any other disciplines, check "None".

Alcohol, Tobacco, and Firearms
Bureau of Land Management
Drug Enforcement Administration
Dept of Interior
Dept of Homeland Security
Environmental Protection Agency
Federal Bureau of Investigation
National Parks Service
Natural Resource Conservation Service
Secret Service
Transportation Security Agency
US Dept of Agriculture
US Forest Service
US Fish and Wildlife Service
US Marshals
US Postal Service
Other
None

If you selected "Other" for needing interoperability with any local, state or federal disciplines or agencies, please enter the agencies here.
List the specific Agencies that you communicate with (interoperations) that have not been selected above.

Interoperability Methods

What Methods Do You Use for Communications or Interoperability with Other Agencies Within Your Jurisdiction?

Select the Methods you use for Communications with other Agencies within your Jurisdiction. Please read the Drop-Down list items carefully before making your

selection. A "shared radio system" is where multiple agencies share a common frequency band and agree on common channels.

Radio on a Shared System
Shared Frequency or Channel
Portable Radio Cache
Second Radio or Radio Swap
Local Mutual Aid Channel
Government Mutual Aid
State Fire Aid
Law Enforcement Assistance Channel
Gateway or Bridge
Console Patch
Hard Patch (e.g. through a Control Station)
Dispatch has Desktop or Control Station
Shared Database
Cell phone or Nextel
Indirect via Land Line
Indirect via Runner
Other
None

What Methods Do You Use for Communications or Interoperability with Other Agencies Outside Your Jurisdiction or Locality?
Select the Methods you use for Communications with other Agencies with other Jurisdictions. Please read the Drop-Down list items carefully before making your selection. A "shared radio system" is where multiple agencies share a common frequency band and agree on common channels.

Radio on a Shared System
Shared Frequency or Channel
Portable Radio Cache
Second Radio or Radio Swap
Local Mutual Aid Channel
Government Mutual Aid
State Fire Aid
Law Enforcement Assistance Channel
Gateway or Bridge
Console Patch
Hard Patch (e.g. through a Control Station)
Dispatch has Desktop or Control Station
Shared Database
Cell phone or Nextel
Indirect via Land Line
Indirect via Runner
Other
None

What Methods Do You Use for Communications or Interoperability with State Agencies?
Select the Methods you use for Communications with State Agencies. Please read the Drop-Down list items carefully before making your selection. A "shared radio system" is where multiple agencies share a common frequency band and agree on common channels.

Radio on a Shared System
Local Mutual Aid Channel
Government Mutual Aid
State Fire Aid

Portable Radio Cache
Second Radio or Radio Swap
Law Enforcement Assistance Channel
Gateway or Bridge
Console Patch
Hard Patch (e.g. through a Control Station)
Dispatch has Desktop or Control Station
Shared Database
Cell phone or Nextel
Indirect via Land Line
Indirect via Runner
Other
None

What Methods Do You Use for Communications or Interoperability with Federal Agencies?

Select the Methods you use for Communication with Federal Agencies. Please read the Drop-Down list items carefully before making your selection. A "shared radio system" is where multiple agencies share a common frequency band and agree on common channels.

Radio on a Shared System
Local Mutual Aid Channel
Government Mutual Aid
State Fire Aid
Portable Radio Cache
Second Radio or Radio Swap
Law Enforcement Assistance Channel
Gateway or Bridge
Console Patch
Hard Patch (e.g. through a Control Station)
Dispatch has Desktop or Control Station
Shared Database
Cell phone or Nextel
Indirect via Land Line
Indirect via Runner
Other
None

If "Other" was selected for an interoperability method, please describe it here.

Future Radio System Requirements

This section contains features and functionality desired in a Radio Communications System. Please rate the importance of the following system attributes to your Agency for a future radio system.

These system attributes are characteristics that COULD be emphasized in a new system design.

Please rate each attribute according to importance for your operation using the rating scale defined below. "Click" on the button to select your desired response. Please answer all questions to the best of your ability. You can change any response.

Rating Scale:
0. Attribute is NOT IMPORTANT to the user.
1. Attribute is MINIMALLY IMPORTANT to the user.

2. *Attribute is NICE TO HAVE, could enhance operations.*
3. *Attribute is USEFUL, will promote more efficient day to day operation.*
4. *QUITE IMPORTANT, lack could result in degradation of mission, injury, or loss of property.*
5. *CRITICAL, lack generally will result in injury, loss of property, or degradation of mission.*
6. *Don't Know, insufficient information available to answer this question.*

Radio Coverage

Improved Voice Radio Coverage: The system should provide radio coverage evenly distributed over the service area for all operational functions. The goal is for there to be no dead spots.
The system shall provide a signal availability of 95 percent to/from mobile radios, with coverage evenly distributed over the service area for all operational functions.

In-Building Coverage: The radio system should provide in-building coverage in the metropolitan areas and in other areas where appropriate.
The system shall provide a signal availability of 95 percent to/from portables in building.

Minimize Interference: The system should minimize or eliminate interference.

Radio Voice Operations

Increased Channel Capacity: The system design shall include additional channels for current and future capacity. Additional channels are important to alleviate congestion on the dispatch and incident channels.

On-Scene Fireground/Tactical Communications Channels: The system design should include licensed simplex frequencies for use by fire departments on-scene.
Direct radio-to-radio frequencies (firegrounds) enable local incident communications in-building, below grade, and in other situations where repeated channels do not offer solid coverage.

Monitored Firegrounds: The system design should provide a means or routing fireground channels to dispatch. *Fireground communications must be available to be monitored by dispatch, command personnel, or recording.*

Emergency Alerting: The radios and system shall provide an emergency function for alerting dispatch and supervisors to the need for assistance.

Workgroup Oriented Operation: The system shall be organized with sufficient channels or talk groups to allow departmental workgroups to have their own channel or talk group.

Voice Security: The system shall provide encrypted communications for users that need to prevent unauthorized interception of sensitive information.

Operational Boundary Transparency: The radio system design shall utilize multiple tower sites, and to the extent possible, automatically switch to the correct site, transparent to the radio user.
System operation will be logical, with the focus on whom the user wants to call rather than where they are located. Changes in the user Agencies' operational boundaries shall be transparent to radio users. The radio system shall allow any group or department to operate with full communications capability within the service area.

One System Serves All Agencies: One radio system shall support all Public Safety agencies including all Law Enforcement, Fire agencies and Emergency Medical Service agencies. It may also support Public Service agencies.

Convenient, same-radio communications is important between all Public Safety agencies within the Locality.

Interoperability through Dispatch: The radio system shall provide a connection between all dispatch operations allowing dispatchers to facilitate information flow between agencies through dispatch and incident command, rather than at the user level.

Interoperability with Adjacent Localities: The radio system design shall emphasize compatibility with radio systems in the adjacent localities to enable public safety users to assist in adjacent counties (and visa versa) and communicate with users from other Public Safety agencies using their assigned radios.

Interoperability with State Agencies: The radio system design should emphasize compatibility with radio systems in use by the State to facilitate communications with State agencies.

Interoperability with Federal Agencies: The radio system design shall emphasize compatibility with radio systems in use by the Federal agencies operating in the locality. *While local agencies cannot operate radio on Federal channels, compatible equipment would facilitate Federal/local cooperative efforts if Federal users could communicate over the locality infrastructure.*

Person Location: The radio system shall include radio location technology to map the location of user radios.
Dispatch can determine the location of a user (to his portable or mobile radio), useful for example when sending assistance.

System Control: The Locality is significantly more comfortable with the high level of system control that comes with exclusive use and system ownership.

Text Messaging: The mobiles and portable radios shall be capable of text messaging.

Dual Band Operation: The user radios need to operate on both VHF and 700 / 800 MHz.

Recorder Operations: The system design shall provide the capability of recording audio for all Public Safety agencies using the system.
Logged audio is important for all dispatch and incident communications.

Dispatch Operations

Increased Dispatch Channel Capacity: The system shall provide for sufficient channels for dispatch operations.

Dispatch Capacity: The dispatch system shall provide sufficient consoles and dispatcher positions so that a dispatcher can be contacted whenever one is needed.

Dispatch Coverage: Users can contact dispatchers via radio from anywhere in the operational area.

Mobile Data Functions

One Mobile Data Network Serves All Agencies: One mobile data system shall support all Public Safety agencies.
A common system is important for compatibility and to avoid duplication of equipment, operation, and maintenance.

Cross CAD Interconnection: The system design shall include a means of exchanging information across different CAD systems.
CAD information exchange is important for information database sharing.

Mobile Data Criticality: The mobile data system is equally important to public safety communication as the voice radio system.
The mobile data system will be designed to meet the same critical communications standards as the voice radio system.

Vehicle Location: Automatic vehicle location (AVL) shall allow vehicles to be located by by dispatch.
Unit location information can assist dispatch in selecting units for incident response and by incident commanders for checking location status of assigned units.

EMS Telemetry: The mobile data radio network shall support telemetry of EMS patient data.
This function is needed in the vehicle while en route and patient-side in the field.

High-Speed Broadband Service: The system design shall include locations with access to wireless broadband service. *High bandwidth service is important for advanced surveillance applications, exchange of bulky files, access to bandwidth intensive Locality information, and laptop maintenance.*

Mobile Applications: The mobile data system shall be designed around an application set suitable for routine law enforcement and fire operations.
These capabilities typically include:

- *CAD dispatch*
- *Records access*
- *Unit status*
- *Sheriff civil process*
- *In-car mapping*
- *Messaging*
- *Email*
- *State and National Queries*
- *Access to electronically stored reference materials*
- *Other law, fire, public service specific applications*
- *Fingerprints*
- *Image Files (Mug Shots)*

Advanced Mobile Applications: The mobile data system shall include capacity and capability for advanced applications for law enforcement and fire operations.
Advanced capabilities include:

- *Video Surveillance*
- *Field biometrics*
- *Mobile access to many types of Locality information*
- *Larger photos*
- *Field citations*
- *Field reports*

Access Locality / Agency Information: The mobile data radio network shall provide access to Locality GIS information.
Transfer of this type information tends to require significant bandwidth and may be offered over wireless broadband or be provided as local MDC or laptop files.

Paging and Alerting Operations

Private Personnel Paging: The radio infrastructure shall include a private paging system and pagers for alerting individuals and groups of users in any agency.
Private paging helps assure rapid and reliable paging using dedicated equipment with guaranteed capacity.

Fire Station Alerting: The radio infrastructure shall include equipment for alerting individual fire stations.

Paging over Cellular: The paging system shall include a means of delivering pages over secondary path through commercial wireless service to cellular phones or PDA devices.
This capability provides a backup paging service and also out-of-town paging.

Infrastructure Capabilities

Future Expansion: The system shall be capable of future expansion in the number of channels and the number of users. *System design shall incorporate expansion to the level of usage predicted for the next 15 years with only the addition of equipment.*

Owner-Controlled Connectivity Network: The system shall be interconnected using a dedicated interconnecting backbone network, such as microwave or fiber.
The goal is to maximize reliability, minimize use of leased carriers and associated costs, and maintain control of the network. Additionally, a dedicated, highly reliable network interconnecting all major radio locations is highly desired. This can be via microwave or fiber

Microwave Additional Capacity: The network design shall include extra capacity, over and above the radio and mobile data needs, for other Locality uses.

Regional Connectivity: The system design shall provide infrastructure connectivity to adjacent areas.

OTAP: The system shall provide for Over-the-Air-Programming of radios.
The radios shall be capable of being reprogrammed over-the-air.

OTAR: The system shall provide for Over-the-Air-Rekeying of encrypted radios.

Over-the-Air-Reflash: The system shall provide for over-the-air upgrades to operating software or new software versions for mobiles and portables.

Reliability and Availability

Survivability: The system shall be designed to survive in severe weather or emergency conditions.
If dispatch points are shifted from their primary to a backup location, radio control shall be available at the backup location to the same degree it was available at primary dispatch.

Reliability/Failure Hierarchy: The radio system and equipment must be designed such that single-mode failures do not perceptibly impact the routine operations of the system.
The following requirements shall apply to failure conditions:

- *Channel failure: no operating impact due to failed voice channel.*
- *Site failure: no operating impact except reduced coverage area.*
- *Primary power failure: UPS backup shall be supplied for all communications equipment, and generator backup for the radio equipment.*

- *Console failures: Single console failure: use reserve console. Console common equipment failure: dispatchers operate co-located radio control station. Communications Center failure: Dispatch using radio control stations at a backup dispatch center.*

Single Points of Failure: The system shall, as much as practical, minimize single points of failure.
This is accomplished through redundant equipment, multi-node network design, distributed processing, backup equipment, etc.

Power Backup: All fixed radio equipment shall require backup power with automatic transfer, capable of handling 100 percent loading of radio equipment. An uninterruptible power system (UPS) shall be required for all communications equipment.

Training and Maintenance

Staffing and Training: The system vendor shall provide formal training for system administrators, supervisors, dispatchers, radio users, and maintenance technicians.

Centralized Maintenance: The Locality / Agency prefers to centrally maintain and administer the radio system, dispatch systems, and user radios, either in-house or using a service shop.
Centralized maintenance provides consistent and coordinated services for all user departments.

Cost and Procurement

Competitive Procurement Process: The overall system concept shall be available from more than one vendor allowing a competitive procurement process.
Equipment shall be procured using open non-restrictive, competitive specifications. Award to be based on the most cost-effective system meeting the specified operational and functional requirements.

Commonality of Equipment: A single vendor shall install and supply all required equipment; as much as possible, user equipment shall be similar in operation and maintenance requirements.
The goal is to minimize spare parts inventory and multiple vendor training requirements.

Multiple Sources: Compatible user equipment shall be available from multiple vendors. Competitive procurement of user equipment is more important than equipment commonality.

Phased Implementation: As much as possible, system procurement and implementation shall occur on a phased basis, allowing costs to be spread over several years. The radio system shall be designed to add user groups to the system over time.

Tiered Subscriber Cost: High-, mid-, and low-tier radio equipment with feature sets and costs matched to the user group shall be provided.
The initial cost of user radios is a prime concern in the evaluation of proposed alternatives.

Radio System Needs

What radio system Features or Technologies do you need that you don't have today?

Mobile Data System Needs

What mobile data Features or Technologies do you need that you don't have today?

Value Added Comments

In this Additional Comments section of the survey, please provide any additional comments by typing them in the answer field to the right of the question. Your answers will be helpful in the overall communication system study. After completing this section, please proceed by clicking the Next button.

Voice Radio System

What is working well today?
Describe the aspects of the Communications System which are working well today.

Which areas need the most improvement?
Describe the areas which need the most improvement.

Additional related comments
Please provide any additional related comments.

Mobile Data System

What is working well today?
Describe the aspects of the Communications System which are working well today.

Which areas need the most improvement?
Describe the areas which need the most improvement.

Additional related comments
Please provide any additional related comments.

9-1-1 System

What is working well today?
Describe the aspects of the Communications System which are working well today.

Which areas need the most improvement?
Describe the areas which need the most improvement.

Additional related comments
Please provide any additional related comments.

Table C-1
Alameda County
Trunked Radio Problems

Problems	Overall	Fire	Law Enforcement
Regional Interoperability:	3.9	5.0	3.8
Limited Coverage:	2.6	2.0	2.6
Equipment Maintainability:	2.2	1.0	2.3
System Busies:	2.1	1.0	2.2
System Reliability:	2.1	5.0	1.8
Capacity:	1.9	1.0	2.0
Indoor Portable Operation:	1.9	0.0	2.1
Interference:	1.8	0.0	2.0
Interoperability:	1.8	0.0	1.9
Talk Group Congestion:	1.5	0.0	1.6
Outdoor Portable Operation:	1.1	0.0	1.2
Dispatcher Access:	0.9	2.0	0.8
Complex Operation:	0.4	0.0	0.5

0 : No problem identified.
1 : Identified problem, currently not of concern. May become a concern in the future.
2 : Occasionally a problem, affects some operations but is generally worked around.
3 : Regularly a problem, operations are routinely affected to the extent there is a loss of operational efficiency.
4 : Frequently a problem, frequently affects operations, compromises the ability of the user to fulfill his mission.
5 : Critical concern, usually affects operations, potential compromise to safety of user or of citizen.

Table C-2
Alameda County
Conventional Radio Problems

Problems	Overall	Fire	Law Enforcement	Other
Regional Interoperability:	2.6	0.6	3.6	4.0
Indoor Portable Operation:	2.4	1.8	2.9	2.5
Limited Coverage:	2.1	1.5	2.7	2.3
Interoperability:	1.8	0.3	2.7	3.0
Interference:	1.7	1.7	1.9	1.3
Mobile to Mobile:	1.5	0.4	2.0	2.5
Outdoor Portable Operation:	1.3	1.0	1.0	2.5
Channel Congestion:	1.1	1.1	1.1	1.3
Channel Unavailable:	1.0	0.8	1.2	1.0
Capacity:	0.9	0.5	0.8	2.0
Equipment Maintainability:	0.8	0.3	1.0	1.7
System Reliability:	0.7	0.3	0.9	1.3
Dispatcher Access:	0.3	0.0	0.3	1.0
Complex Operation:	0.1	0.0	0.1	0.3

0 : No problem identified.
1 : Identified problem, currently not of concern. May become a concern in the future.
2 : Occasionally a problem, affects some operations but is generally worked around.
3 : Regularly a problem, operations are routinely affected to the extent there is a loss of operational efficiency.
4 : Frequently a problem, frequently affects operations, compromises the ability of the user to fulfill his mission.
5 : Critical concern, usually affects operations, potential compromise to safety of user or of citizen.

Table C-3
Contra Costa County
Trunked Radio Problems

Problem	Overall	Fire	Law Enforcement	Other
Regional Interoperability:	3.2	2.7	3.7	2.0
Limited Coverage:	3.1	2.7	3.4	2.0
Indoor Portable Operation:	2.9	2.8	3.1	2.0
Equipment Maintainability:	2.7	3.8	2.2	2.0
System Reliability:	2.6	2.2	2.8	2.0
Interference:	2.3	1.8	2.5	4.0
Interoperability:	2.1	1.3	2.6	1.0
System Busies:	2.0	2.7	1.8	0.0
Outdoor Portable Operation:	1.6	1.5	1.7	1.0
Capacity:	1.2	1.2	1.3	1.0
Talk Group Congestion:	0.9	1.7	0.6	0.0
Dispatcher Access:	0.8	0.7	1.0	0.0
Complex Operation:	0.4	0.3	0.5	0.0

0: No problem identified
1: Identified problem, currently not a concern. May become a concern in the future.
2: Occasionally a problem, operations but is generally worked around.
3: Regularly a problem, operations are routinely affected to the extent there is a loos of operational efficiency.
4: Frequently a problem, frequently affects operations, compromises the ability of the user to fulfill his mission.
5: Crtical concern, usually affects operations, potential compromise to safety of user or of citizen.

Table C-4
Contra Costa County
Conventional Radio Problems

Problem	Overall	Fire	Law Enforcement
Regional Interoperability:	2.7	5.0	1.5
Limited Coverage:	1.8	2.0	1.7
Indoor Portable Operation:	1.3	2.0	1.0
Interoperability:	1.0	1.0	1.0
Channel Unavailable:	0.3	0.0	0.3
Channel Congestion:	0.3	0.0	0.3
Interference:	0.3	1.0	0.0
Mobile to Mobile:	0.0	0.0	0.0
Outdoor Portable Operation:	0.0	0.0	0.0
System Reliability:	0.0	0.0	0.0
Capacity:	0.0	0.0	0.0
Complex Operation:	0.0	0.0	0.0
Dispatcher Access:	0.0	0.0	0.0
Equipment Maintainability:	0.0	0.0	0.0

0: No problem identified
1: Identified problem, currently not a concern. May become a concern in the future.
2: Occasionally a problem, operations but is generally worked around.
3: Regularly a problem, operations are routinely affected to the extent there is a loos of operational efficiency.
4: Frequently a problem, frequently affects operations, compromises the ability of the user to fulfill his mission.
5: Crtical concern, usually affects operations, potential compromise to safety of user or of citizen.

Table C-5
EBRCSA
System Attribute Ranking

Ref	Attributes	Overall	Fire	Law Enforcement	Other
ff	Power Backup	4.9	4.9	4.9	5.0
dd	Reliability/Failure Hierarchy	4.9	4.8	4.9	5.0
cc	Survivability	4.8	4.8	4.9	4.8
ee	Single Points of Failure	4.8	4.8	4.9	5.0
a	Improved Voice Radio Coverage	4.8	4.6	4.9	4.8
b	In-Building Coverage	4.7	4.6	4.7	4.6
gg	Staffing and Training	4.6	4.4	4.7	4.4
c	Minimize Interference	4.6	4.5	4.6	4.6
g	Emergency Alerting	4.5	4.6	4.5	4.2
j	Operational Boundary Transparency	4.4	4.3	4.5	3.8
v	Future Expansion	4.4	4.1	4.5	4.0
w	Owner-Controlled Connectivity Network	4.2	4.2	4.3	4.0
m	Interoperability with Adjacent Localities	4.2	4.3	4.2	3.8
t	Recorder Operations	4.1	4.1	4.2	3.2
x	Microwave Additional Capacity	4.1	3.8	4.2	4.2
hh	Centralized Maintenance	4.1	4.3	3.8	4.8
y	Regional Connectivity	4.0	3.8	4.1	3.6
l	Interoperability through Dispatch	3.9	3.9	4.0	3.4

Ratings
0 - Attribute is NOT IMPORTANT to the user.
1 - Attribute is MINIMALLY IMPORTANT to the user.
2 - Attribute is NICE TO HAVE, could enhance operations.
3 - Attribute is USEFUL, will promote more efficient day to day operation.
4 - QUITE IMPORTANT, lack could result in degradation of mission, injury, or loss of property.
5 - CRITICAL, lack generally will result in injury, loss of property, or degradation of mission.

Note: To identify further information about an attribute, look up the Ref column in Section C-4.

Table C-5 (Continued)
EBRCSA
System Attribute Ranking

Ref	Attributes	Overall	Fire	Law Enforcement	Other
h	Workgroup Oriented Operation	3.9	3.9	3.9	4.2
e	On-Scene Fireground / Tactical Communications Channels	3.8	4.4	3.5	4.3
z	OTAP	3.8	3.9	3.8	3.8
jj	Commonality of Equipment	3.7	3.4	3.8	3.7
aa	OTAR	3.7	3.5	3.8	3.8
u	Vehicle Location	3.7	3.9	3.7	2.8
d	Increased Channel Capacity	3.7	3.6	3.8	3.8
s	Dual Band Operation	3.6	4.1	3.4	3.6
bb	Over-the-Air-Reflash	3.6	3.7	3.6	3.6
f	Monitored Firegrounds	3.6	4.4	3.1	3.5
ii	Competitive Procurement Process	3.6	3.8	3.6	3.5
mm	Tiered Subscriber Cost	3.5	3.4	3.7	4.0
n	Interoperability with State Agencies	3.5	4.1	3.4	2.8
kk	Multiple Sources	3.4	3.7	3.3	3.8
ll	Phased Implementation	3.4	2.9	3.4	4.3
k	One System Serves All Agencies	3.3	3.3	3.3	2.8
p	Person Location	3.3	3.3	3.4	2.0
i	Voice Security	3.2	1.6	4.1	2.2
q	System Control	2.7	2.8	2.5	3.8
o	Interoperability with Federal Agencies	2.6	2.8	2.6	2.0
r	Text Messaging	2.1	2.1	2.2	2.0

Ratings
0 - Attribute is NOT IMPORTANT to the user.
1 - Attribute is MINIMALLY IMPORTANT to the user.
2 - Attribute is NICE TO HAVE, could enhance operations.
3 - Attribute is USEFUL, will promote more efficient day to day operation.
4 - QUITE IMPORTANT, lack could result in degradation of mission, injury, or loss of property.
5 - CRITICAL, lack generally will result in injury, loss of property, or degradation of mission.

Note: To identify further information about an attribute, look up the Ref column in Section C-4.

Table C-6
Alameda County 911 Dispatch Center

Submission Id	Locality Type	Locality Name	Agency Discipline	Agency Name	Other Agency Name	What is working well today?	Which areas need the most improvement?	Additional related comments
2360	County	Alameda	Law Enforcement	Law Enforcement				
2372	County	Alameda	Fire	Fire		Today, so far everything. Tommorow is a different day.... (sorry).	Typical lack of funding to provide appropriate number of qualified dispatch personnel 24/7/365.	Typical dispatch issues related to too few dispatchers doing too much work. Example might be one dispatcher serving entire PD and FD for a period of time. That's an avoidable accident waiting to happen.
2373	County	Alameda	Law Enforcement	Law Enforcement				
2382	County	Alameda	Law Enforcement	Law Enforcement				
2406	County	Alameda	Fire	Fire		No comment	No Comment	
2418	County	Alameda	Law Enforcement	Law Enforcement		Dispatch Consoles are all very reliable.	Intermittent radio issues and delay for repair. Dead spots for patrol officers using handpacks.	Overall the reliability of our current system is poor. Any time repairs are scheduled, we're left with the possibility of not having a reliable radio system; our current County Radio Repair technicians often leave us wondering if the whole system is going to fail. In general, we have too much issues with bleedover, squealing and squelching.
2420	County	Alameda	Fire	Fire		NA	NA	NA
2428	County	Alameda	Other	Other	GSA			
2434	County	Alameda	Fire	Fire				
2436	County	Alameda	Law Enforcement	Law Enforcement		CAD to Telco connections work well	Too many keyboards mice in play	
2447	County	Alameda	Law Enforcement	Law Enforcement			space for future growth	
2452	County	Alameda	Law Enforcement	Law Enforcement		In general this system has better coverage and capabilities	The current trunking system (primary equipment) as it impacts dispatch centers is rapdily getting to old to maintain. We need to install a new system with growth potential	
2470	County	Alameda	Law Enforcement	Law Enforcement				
2479	County	Alameda	Law Enforcement	Law Enforcement			overall reliabilty must be improved with all systems.	
2480	County	Alameda	Law Enforcement	Law Enforcement				

Table C-7
Alameda County Voice System

Submission Id	Locality Type	Locality Name	Agency Discipline	Agency Name	Other Agency Name	What is working well today?	Which areas need the most improvement?	Additional related comments
2352	County	Alameda	Law Enforcement	Law Enforcement			Coverage	
2354	County	Alameda	Fire	Fire		The VHF system.	Our primary communications system (800Mhz), has passed the point of obsolesence and is now limping along on what limited parts can be found. We need a new, stable radio system from top to bottom. It needs to be P25 compatible and of comparable or higher quality in all ways than our current system. Improvements in coverage area are mandatory with a new system where our new system has entire buildings that we cannot communicate within.	
2357	County	Alameda	Fire	Fire				
2360	County	Alameda	Law Enforcement	Law Enforcement		We continue to be able to communicate.	Resolving dead zone areas & spotty reception/transmission areas. Some interference.	
2372	County	Alameda	Fire	Fire		The simplistic (and reliable) VHF radio system in our small jurisdiction (one sq mile).	Age of equipment (which is soon to be replaced) and an inadequate amount of immediately available backup hardware.	Forward looking plans related to interoperability with neighboring mutual aid jurisdictions are guesstimates at best due to the fact we have no idea when they may start using a compatable (700/800 mhz?) system. This is compounded by a different county immediately to our north and a city (Berkeley) to our south which is apparently not interested in participating in the two county comm plan. Why spend $ to upgrade to a (700/800 mhz) system when your neighboring mutual aid jurisdictions don't? We do want to do the right thing today without realizing 5 years from today we spent money buying technology we still aren't using in day to day operations. We do hope the results of this survey shine a bright light on this subject and help to make it clear how today's dollars are best spent.
2373	County	Alameda	Law Enforcement	Law Enforcement		ease of use for all users.	coverage	
2382	County	Alameda	Law Enforcement	Law Enforcement				
2388	County	Alameda	Fire	Fire		The VHF radio system	Our primary communications system (800Mhz), has passed the point of obsolesence and is now limping along on what limited parts can be found. We need a new, stable radio system from top to bottom. It needs to be P25 compatible and of comparable or higher quality in all ways than our current system. Improvements in coverage area are mandatory with a new system where our new system has entire buildings that we cannot communicate within.	
2406	County	Alameda	Fire	Fire		everything is up for the most part and operational, but that can change at a moments notice.	Coverage, reliability and system support with people who understand fire operations.	

Table C-7 (Continued)
Alameda County Voice System

Submission Id	Locality Type	Locality Name	Agency Discipline	Agency Name	Other Agency Name	What is working well today?	Which areas need the most improvement?	Additional related comments
2418	County	Alameda	Law Enforcement	Law Enforcement		Dispatch Consoles are all very reliable.	Intermittent radio issues and delay for repair. Dead spots for patrol officers using handpacks.	Overall the reliability of our current system is poor. Any time repairs are scheduled, we're left with the possibility of not having a reliable radio system; our current County Radio Repair technicians often leave us wondering if the whole system is going to fail. In general, we have too much issues with bleedover, squealing and squelching.
2420	County	Alameda	Fire	Fire				
2423	County	Alameda	Law Enforcement	Law Enforcement				
2428	County	Alameda	Other	Other	GSA	microwave backbone	phasing on simulcast	
2434	County	Alameda	Fire	Fire			Dead Spots	Too much air traffic.
2436	County	Alameda	Law Enforcement	Law Enforcement		In general system is functional.	Removal of dead zones, interference issues. elimination of single points of failure	In general the system is functional today, capacity for interoperability and increased reliability of coverage are key points
2447	County	Alameda	Law Enforcement	Law Enforcement			dead spots and garbled transmissions	
2452	County	Alameda	Law Enforcement	Law Enforcement		overall, there is an improved coverage area	all current equipment needs to be replaced, repairs are becoming too difficult	
2453	County	Alameda	Law Enforcement	Law Enforcement		Nothing	reception and ability to transmit	
2470	County	Alameda	Law Enforcement	Law Enforcement			reliability	
2477	County	Alameda	Law Enforcement	Law Enforcement		In the coverage area communication is good	Need broader range of coverage	None
2479	County	Alameda	Law Enforcement	Law Enforcement			We do not have good in building coverage; we constantly have background noise and small areas with no, or very little, coverage.	
2480	County	Alameda	Law Enforcement	Law Enforcement		Other than the need for more channels and improved interoperability, our system is	We need more channels	Your survey mentioned being able to sustain a weather emergency but not an earthquake. It will be of critical importance for you all to consider system survivability in an earthquake.

Table C-8
Contra Costa 911 Dispatch Center

Submission Id	Locality Type	Locality Name	Agency Discipline	Agency Name	Other Agency Name	What is working well today?	Which areas need the most improvement?	Additional related comments
2361	County	Contra Costa	Law Enforcement	Law Enforcement				
2374	County	Contra Costa	Law Enforcement	Law Enforcement		Telephone System. Minimal, if any, interuptions to emergency communications has been experienced. Superior support that is both timely and efficient. Resolutions to problems are implemented quickly. Knowledgable support and excellent problem reporting system in place that prioritizes and responds to problems appropriately.		
2381	County	Contra Costa	Fire	Fire		Calls are dispatched in a timely manner., EMD dispatch., Knowledge and ability of dispatchers.,		
2389	County	Contra Costa	Law Enforcement	Law Enforcement		Our Vesta 911 system is new and works well. Our dispatch center badly needs to be upgraded and re-configured. It's too small and the furniture is not ergonomically correct.	integration between admin phones and 911 phones. we currently have two different systems that are configured to work together but there are some issues with transferring to VoiceMail,etc. It works but is confusing.	
2393	County	Contra Costa	Law Enforcement	Law Enforcement		N/A, we do not have a dispact center.		
2395	County	Contra Costa	Law Enforcement	Law Enforcement				
2404	County	Contra Costa	Fire	Fire				
2407	County	Contra Costa	Other	Other	County Connection			
2415	County	Contra Costa	Law Enforcement	Law Enforcement			Recently puchased a new CAD system and we need to get a number of bugs fixed. Continued practice using the system.	
2419	County	Contra Costa	Fire	Fire		VERY RELAIBLE		
2421	County	Contra Costa	Fire	Fire		very reliable and robust diaptch infrastructure	Equipment is aging	
2422	County	Contra Costa	Fire	Fire			We need dedicated Fire dispatchers	
2425	County	Contra Costa	Law Enforcement	Law Enforcement		Center is great.	None	
2426	County	Contra Costa	Law Enforcement	Law Enforcement				

Table C-9
Contra Costa County Voice System

Submission Id	Locality Type	Locality Name	Agency Discipline	Agency Name	Other Agency Name	What is working well today?	Which areas need the most improvement?	Additional related comments
2345	County	Contra Costa	Law Enforcement	Law Enforcement		overal clarity of transmissions	Uniform, uniterrupted coveragae	none
2346	County	Contra Costa	Fire	Fire				
2350	County	Contra Costa	Law Enforcement	Law Enforcement			Radio area coverage. Immediate interoperability with area agencies	
2353	County	Contra Costa	Law Enforcement	Law Enforcement			Our system has a default built in wherein if the system loses power, there is still some coverage. Unfortunately, that "some coverage" does not include the agencies we dispatch for. We have tried to get cooperation from the host agency, but have been unable to get them to see the importance of maintaining radios for everyone by splitting the default.	
2355	County	Contra Costa	Law Enforcement	Law Enforcement		System works well overall	Additional channels we are maxing out our current system	
2356	County	Contra Costa	Other	Other	Department of Information Technology - Telecom Radio	VHF coverage analog is working well for our Fire dept.	North and East County coverage. In building coverage County wide.	..
2358	County	Contra Costa	Law Enforcement	Law Enforcement		The radio system works fine most of the time, but when it fails, it fails completely. This happens more frequently than it should.	Radio dead spots have been a problem since the inception of the radio system. This has never been addressed by system administrators.	
2361	County	Contra Costa	Law Enforcement	Law Enforcement		coverage.	simulcast boadcasting.	
2362	County	Contra Costa	Other	Other	DoIT	The radio systems that are currently in place in Contra Costa County work well.	A few of the VHF frequencies that the Sheriff's Department and Fire Departments use have interference issues. It would be an improvement if these frequencies could be replaced with clear frequencies.	Interoperabilty. It's quite the buzzword these days. This word has been thrown around a lot in order to justify Alameda and Contra Costa Counties build a new regional radio system. The current design is dangerously flawed and expensive. There is a single point of failure in this design. The proposed system is underdesigned. The vendor keeps coming back with "new and improved" design versions in order to achive what is already in place with the current radio systems. This is a "buyer beware" radio system that has been proposed. The vendor that has been chosen to build this digital radio system, once the vendor has equipment in place will have the agencies involved "by the balls" as it were. By his own admission, the vendor is "trying to get his foot in the door" in Contra Costa County. Once the County is married to this system, there would be no turning back. I could go on and on. I do not have enough time to do so. Just remember Alameda County needs a new radio system. Contra Costa County does not.
2363	County	Contra Costa	Law Enforcement	Law Enforcement		Line of sight tragnsmission.	Dead spot due to geography.	None
2374	County	Contra Costa	Law Enforcement	Law Enforcement		Day to day normal operations of radio system work ok	More time efficient support of Radio systems is needed. The ability to recognize problem, identify cause and provide a quick solution to communication problems associated with this system is essential and currently lacking. Quick resolution to problems associated to systems is imparative to emergency operations.	The telephone system, on the other hand, has been supported well by vendors ensuring that essential communication is always available. They are a great model for communication systems in public safety.

Table C-9 (Continued)
Contra Costa County Voice System

Submission Id	Locality Type	Locality Name	Agency Discipline	Agency Name	Other Agency Name	What is working well today?	Which areas need the most improvement?	Additional related comments
2378	County	Contra	Fire	Fire		All systems working well		
2381	County	Contra Costa	Fire	Fire		Dispatch, Quick and efficient response to questions and/or problems., Maintenance, Coverage and clarity, Ability for statewide communications	Coverage within large buildings or garages (commercial type structures), All local fire agencies should be on the same system!, Single source purchasing with discounts available to group members.	
2389	County	Contra Costa	Law Enforcement	Law Enforcement		our system works fairly well within our city.	coverage,quality and ability to talk to other agencies. Ability to talk from inside a building, programming and GPS location. We live in a hilly area where coverage is sometimes a problem.	
2392	County	Contra Costa	Law Enforcement	Law Enforcement				
2393	County	Contra Costa	Law Enforcement	Law Enforcement		We are members of the West County Radio Consortium. This allows us to communicate freely with a few surrounding agencies.	Ability to communicate freely with all surrounding agencies.	
2394	County	Contra	Fire	Fire		VHF signal continuity	System redesign forcing expensive future investment.	
2395	County	Contra Costa	Law Enforcement	Law Enforcement			Maintenance and Coverage	
2398	County	Contra Costa	Fire	Fire		Radio coverage is quite good - we do have a few weak spots but over all good	Weak signal spots	
2404	County	Contra	Fire	Fire		The existing system works well		
2407	County	Contra Costa	Other	Other	County Connection	Both AVL and CAD screens work well part time. The system gets overloaded and fades out from time to time.	To clear up the dead spots thruout the system.	
2410	County	Contra Costa	Law Enforcement	Law Enforcement		When the Richmond system is up, and as long as we stay in or close to our City the regular communications are good.	The ability to speak with the Sheriffs Office and Highway Patrol, as well as with fire in a major event. Also radio coverage is terrible going east, we have to switch to cell phones.	
2413	County	Contra Costa	Law Enforcement	Law Enforcement				
2415	County	Contra Costa	Law Enforcement	Law Enforcement		Have local control and sufficient capacity.	Coverage and communicating with multiple jurisdictions.	
2416	County	Contra Costa	Other	Other	District Attorney Investigations	Dispatchers, agencies sharing equipment.	Update of equipment and expansion of capabilities to communicate with more agencies on various radio systems. Portability of MDC unit(s) for our small investigative unit.	
2419	County	Contra Costa	Fire	Fire		Completely Interoperable with all Contra Costa area local, state, and federal fire assets.	Interoperability with Alameda County, more tactical channels	
2421	County	Contra Costa	Fire	Fire		System is interoperable with all, Local, State and Federal fire partner agencies.	Not enough tactical channels and Dispatch is not on the Tac channels.	
2422	County	Contra Costa	Fire	Fire		The County VHF/MDC system	our 800 system, accountability for system failures, increased training in the dispatch centers. Dedicated Fire dispatchers	Short term use equipment for site failures. aka portable repeater to get the system back up and running while fixes occur.
2425	County	Contra Costa	Law Enforcement	Law Enforcement		We have a system that works for us but not well for contact with others who have different systems (ie 800 mhz)	ability to talk to all governmental agencies, first law enforecment second everyone else	
2426	County	Contra Costa	Law Enforcement	Law Enforcement		Voice radio, data system and data sharing	Interopabilty we need to be able to talk to all publuic safety to include public works ect...in the region....roaming	
2445	County	Contra Costa	Law Enforcement	Law Enforcement		Overall reliability of system in place.	Emergency notification buttons on portables, wi-fi in vehicles, and improved communication mechanisms with allied agencies to improve interoperability.	
2451	County	Contra Costa	Law Enforcement	Law Enforcement		all	coverage	none
2456	County	Contra Costa	Law Enforcement	Law Enforcement		general communications	battery life and dead spots	
2473	County	Contra Costa	Law Enforcement	Law Enforcement				

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