



SOLANO COUNTY GRAND JURY

2014 - 2015

Fire Protection

Communication Consolidation

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Summary

The 2014-2015 Grand Jury has looked into the history and investigated the feasibility of consolidating Solano County fire agency resources.

Fire agencies consolidation on a countywide level is an elusive goal. Within the Solano County fire community, collaboration in the acquisition of specialized communication equipment encourages a level of inter-agency cohesiveness and county wide quality of service that fire agencies strive to provide.

Municipal administrations are continually expected to improve services and reduce expenses. Consolidating fire services is one means of accomplishing both.

The absence of such a system cost lives and untold millions of dollars in disasters.

Solano County does not have a system that allows multiple first responder agencies to communicate effectively with each other.

As a national plan to unify communications for emergency responders is implemented, a path to “consolidation” may be evolving.

Introduction /Background

Public Safety services in a community are typically the most costly. Law enforcement and fire services are the usual recipients of the largest share of taxes and fees levied on residents and businesses. Fire services, due to the similarities of protocols and procedures, are often looked at as having the most likely potential for consolidation to save money in a region or county. Solano County Local Agency Formation Commission (LAFCO) began a process to determine if, and how, fire protection agencies might be consolidated. Solano County officials are in the process of determining the viability of consolidation.

Solano County has been considering consolidating fire agency resources for over thirty years. Opportunities for consolidation have worked well in areas where small communities have joined as a necessity because of limited tax base. Mergers have also been accomplished in large metropolitan areas where city borders are distinguishable only by lines drawn on a map and each have had fire departments with similar functions and responsibilities.

Historically, Solano County consolidation difficulties have persisted partly because municipal development occurred independently when cities were more geographically isolated. An early State Capitol, the City of Benicia, was a regional powerhouse in the 1800's and flourished in its heyday independent of the rest of the county. Vallejo came of age and grew during the Second World War primarily as a naval center. Fairfield grew because of the strategic importance of Travis Air Force Base and both Vacaville and Dixon flourished because of their agricultural significance. Rio Vista and Suisun City were more often described as communities conveniently suited more for residents than as business or industrial locations. Cities have established histories of independent growth and have long established public services. Some cities have become imbedded in their own organizational structures and practices.

METHODOLOGY

REVIEWED

- National Fire Protection Association Report: The Oakland/Berkeley Hills Fire October 20, 1991
- Donahue, Amy, and Robert Tuohy, "Lessons We Don't Learn: A Study of the Lessons of Disasters, Why We Repeat Them, and How We Can Learn Them" Homeland Security Affairs 2, Article 4 (July 2006) <https://hsaj.org/articles/167>

Studies and Municipal Service Reviews (MSR):

- 1994 Warner Group Study: "Public Safety Interoperability"
- 2002 Feasibility Study: RCC Consultants
- 2011 Consolidated Dispatch Feasibility Study AECOM Consultants
- 2006 LAFCO Municipal Service Review: Fire Districts
- 2014 LAFCO Municipal Service Review: Fire Districts/with Review to Cities

Solano County Grand Jury Reports:

- 2002-03 "Public Safety Radio Interoperability"
- 2003-04 "Emergency Services County and cities of Solano"
- 2004-05 "Solano County Emergency Services: A Patchwork of Protection"
- 2007-08 "Solano County Fire Protection Districts"

Interviewed

- City Fire Chiefs
- Solano Fire District Chiefs
- City Police Chiefs

- Members of Solano County LAFCO
- Member of the Solano County Office of Emergency Services
- Member of the Solano County Board of Supervisors
- Member of the Solano County Administration

Toured

- Solano County Sheriff's Dispatch/Office of Emergency Services (OES)

Statement of Facts

Consolidation of Service: Considering a unified Solano County Fire Dispatch Center

Recent discussions of fire communication consolidation surfaced because of a potential relocation of the Sheriff's Communication and Dispatch Center/Office of Emergency Services from its present site, near the county courthouse, to a more appropriate spot near Claybank Rd and Airbase Parkway in Fairfield. The Solano Fire Chief's Association considers the potential new site as an opportunity. Plans for a proposed new building could be drawn to accommodate a consolidated fire dispatch center. County officials are in the process of initiating formal discussions on the subject.

More so than with police agencies, fire operations and emergency responder procedures within Solano County are alike. They describe functions and protocols that are similar, and which for individual agencies differ primarily with population densities and open landscape/urban landscape mixes.

Consolidation of fire dispatch to one location has been analyzed in the documents and studies cited in the methodology section of this report. The scenarios considered ranged from partial mergers to full consolidation of all county and city dispatch centers. Except for the outdated financial details described in the 2011 AECOM Feasibility Study, costing \$140,000, the basic findings and potential benefit conclusions remain the same.

Current Structure of Dispatch Service

Six of Solano County's independent Fire Districts contract with the Sheriff's Office for dispatch services. All city dispatch services for fire are provided by respective city law enforcement dispatch centers. No city fire department operates or maintains a separate fire dispatch center.

There is a considerable amount of redundancy. The Fairfield Police Department, Suisun City Police Department and the Solano County Sheriff's Office each operates and maintains separate law enforcement/fire dispatch centers within a one and one-half mile radius of each other. The cities of Vallejo and Benicia have a similar situation, each operating dispatch centers in relative

close proximity. The City of Vacaville operates its own independent law enforcement/fire dispatch center. The cities of Dixon and Rio Vista contract with the Sheriff's Office for dispatch services.

Potential Benefits of Consolidation:

Consolidation of fire dispatch services is one of the ways available for government to provide constituents with better quality service and at the same time reduce costs.

Advantages of merging fire dispatch facilities include:

- Reduced overhead costs
- Shared Administration (*see Glossary – Joint Power Authority*)
- Merged employee positions
- Common facility
- Shared equipment and maintenance costs
- Improvement in emergency response time during medium and large incidents
- Shared costs for training and operations
- Reduction in radio dispatch duplication
- Community and firefighter safety would improve
- Costs would be reduced over a period of time

Alameda, Sacramento, Marin, Contra Costa, and Santa Clara counties have been successful in consolidating fire services.

Fire dispatch consolidations have occurred in Monterey, San Francisco, Santa Cruz, Shasta, Stanislaus and Yolo counties.

Why consolidation has not occurred in Solano County:

There are problems encountered with mergers and consolidations:

1. Consolidation means that a city administration will relinquish direct control over fire dispatch.
2. City officials are concerned with the complexities involving merging employee wage, health and pension benefits. Some merged employees get a raise and/or others take a pay cut. Union contracts come into play.
3. Opposition comes also from individual city police departments who now control city fire/police communications as it would affect budget revenues and loss of trained personnel. Financial investments made by a city to the hiring and training processes along with the outlay for extensive background checks would be lost if fire dispatch jobs

are merged away to another agency. The process of acquiring replacement dispatchers along with the background checks and job training required is expensive and time consuming.

4. Participating cities would have to share the financial expense of the consolidated center apportioned according to total calls received.

A Joint Powers Authority (JPA) is a considered model to lead a consolidation and administer that new consolidated agency. A JPA administration for a consolidated dispatch center requires equal involvement from all participating agencies. City managers and city councils have failed to demonstrate any actions toward consolidation.

It was also pointed out during this inquiry that the establishment of a JPA, although recommended by many of the cited reports, cannot compel city participation and thus could not necessarily begin a consolidation process.

As a result, dispatch consolidation is at an impasse. These issues have remained the same for years, the fire community for, and the cities basically against, consolidation.

Mutual Aid

A major piece of a preparation scenario is the concept of 'mutual aid'. Mutual aid is a reliance on other emergency responders to lend assistance across jurisdictional boundaries. When first responder resources are overwhelmed, other city or county fire agencies are called in and lend whatever assistance is necessary. For mutual aid events the public has expectations of fire agency cooperation that is not apparent until an emergency arises.

Firefighters and paramedics are the primary emergency responders for communities. Both professional and volunteer fire agencies are obliged to continually assess and upgrade their abilities to perform in a variety of disaster scenarios. After-incident reports of responses to such large events as the 1989 Loma Prieta earthquake are carefully analyzed in order to improve tactical response planning and training. This is done so future occurrences can be better prepared for and that deployment of resources be more effectively managed.

Radio Communication is Critical

The reality of multiple agencies responding to the many simultaneous aspects of a single event is highly challenging. The coordination of fire suppression, rescue, evacuation and medical involvement with continuing evaluation of all ongoing aspects requires well thought out preparation. A common thread in after- incident reports of a majority of large mutual aid situations is the unreliability of inter-agency radio communications.

Lack of common radio frequencies among responders and overloading of command channel frequencies are found numerous times in the reports. Events such as the 1991, Oakland Hills/Berkeley Fire, 1995 the Oklahoma City terrorist bombing, 2001, “Twin Towers” disaster, and the 2005 Hurricane Katrina response describe such problems. Reading the after-incident analyses of these events one gets a look at the overwhelming confusion and uncertainty that is too often the reality of multiple agencies confronting a large scale event.

Rapid establishment of a single command center with common communication ability, that is, an ability to communicate with all personnel during a crisis, is critical. Analyses of these mutual aid types of events describe situations when multiple confusing sources of directives, along with inability to communicate have led to avoidable injury and tragic loss of life among responders and civilians. Directives going out from and responses being received back to a single source is the ideal. In a disaster when mutual aid is required, the lack of a means of common, shared communications can defeat the intent of emergency response.

Solano County Emergency responders - Multiple Frequencies

Within Solano County there are five independent fire districts responsible for unincorporated areas and seven city fire agencies. A military fire unit based at Travis Air Force Base and the State organization, Cal Fire, which has range and wild land responsibilities and a fire unit from California Medical Facility, Solano round out the list of regional responders. All agencies will assist under mutual aid agreements if needed.

Two or three different districts or agencies might respond to a major emergency incident. Not all responders in Solano County share a common radio frequency. Communication in some situations becomes a challenge. For example:

- City of Benicia Fire Department uses VHF
- City of Dixon Fire Department uses 800 MHz
- City of Fairfield Fire Department uses 800 MHz
- Rio Vista/Delta Fire Department uses VHF
- City of Suisun City Fire Department uses VHF
- City of Vacaville Fire Department uses 800 MHz
- City of Vallejo Fire Department uses UHF

The five County Fire Protection Districts; Cordelia, Dixon, Montezuma, Suisun and Vacaville use 156.000 MHz and all contract with the Solano County Sheriff for dispatch service.

Each of these radio frequency bands contains multiple frequencies.

Incidents where communications have to be directed through different dispatch centers are the reality with the present arrangement of city and fire district radio communications.

Developments at the National Level

Innovation in technology:

In the 1990s' a series of national disasters (ones listed above as well as others) had exposed the limitation of emergency radio communications for mutual aid purposes. The federal government began a process to develop digital radio for secure network purposes. "Project 25" is the name given to a collaborative effort by federal agencies and communications companies to develop standards to enable secure emergency radio interoperability. Public safety administrators across the country have been complying with the standards and acquiring the equipment necessary to implement the changes.

The Motorola APX7000 radio, for example, is a type of the hand held, P25 compliant, all channel radio that has become available. This radio has the capacity to receive and respond across all emergency channels used in the County and the State. Rather than have to affect any current radio operations, acquisition of this all-band capacity radio overcomes the need for individual cities to change their operational radio frequencies. All cities can retain what they use currently but with the addition of this radio equipment would have the ability to coordinate with any outside agency in a mutual response situation.

Grants and funding sources to alleviate the costs of the hand-held radios are available through the State and Federal Governments. Vallejo Fire Department has recently received fourteen of these radios from Solano County Office of Emergency Services (OES). The radios were purchased with money from a grant obtained by OES. City of Vallejo Fire Department can now communicate directly with county fire districts as well as the County Sheriff's dispatch center and any of Solano County's fire and law enforcement departments.

Other Solano Public Safety agencies have also been acquiring P25 compliant radios as federally mandated change-over dates approach. Vacaville and Fairfield City Managers have begun to coordinate their efforts to acquire compatible equipment as implementation of the national communication standards come due.

Change over to a common radio type has brought about a major improvement in mutual aid responder communication. This allows contemplation of the advantages of a "shared services" consolidation which was discussed in detail in the 2011 AECOM Report and both the 2006 and 2014 LAFCO Municipal Service Reports.

Shared Services:

In a shared services consolidation, major communications components are shared among multiple agencies. Typically this includes the Computer Aided Dispatch (CAD), Geographical Information System (GIS) mapping, and Records Management System (RMS). In a shared services consolidation, these critical systems are maintained in a single location and all dispatch centers access these systems via Internet Protocol (IP) interface. *(See Glossary)*

Another type of shared services consolidation is where all agencies agree to use a common vendor for CAD, RMS and radio consoles. In this type of shared services environment, many of the dispatch centers maintain their own CAD and RMS servers, but they are configured in a way that facilitates a common operating picture among all dispatch centers.

Information and management systems with P25 levels of security and which have the ability to interface seamlessly are being obtained by fire departments nationwide. When equipment is upgraded at “end of life” dates, opportunities to purchase common use equipment presents itself.

Costs and the overall number of systems to be purchased and maintained can be reduced. Shared services also offer the advantage of a shared technical support. Another advantage is the increased interoperability and operational awareness among agencies. In a shared services environment, it is possible for participating agencies to see a common operating picture, to see at once, all emergency response assets.

Currently, almost all dispatch centers in Solano County use different equipment for CAD and little effort is made to coordinate with adjacent agencies. Even in the case where different dispatch centers use the same CAD vendor, systems not interfaced or interconnected have problems sharing data. This is particularly troublesome when multiple dispatch centers are directing fire departments and rescue squads to the same incident. In addition, different RMS systems are used throughout the county which do not interface or communicate with each other.

Findings and Recommendations

Finding 1

Studies done over the past thirty years have recommended consolidation of fire agency resources.

Recommendation 1

Solano County Board of Supervisors take the lead to create a formal leadership group to implement a plan to consolidate fire agency resources.

Finding 2

City Fire Departments and Independent Fire Districts in the County have begun to collaborate in acquiring equipment in compliance with Federal mandates.

Recommendation 2

City Fire Departments and Independent Fire Districts implement a “shared consolidation” for the purpose of obtaining equipment, hardware, and software.

Finding 3

Fire communications consolidation will improve public safety.

Recommendation 3

Implement fire communications consolidation to enhance public safety.

Comments

Municipal administrations are continually expected to improve services and reduce expenses. Consolidating fire services is one means of accomplishing both. Accumulated studies and reports do little more than demonstrate lack of purpose and do not accomplish meaningful change. Actions are required.

When lives are at stake in emergency situations, the necessity of an efficient communications system for multiple agency first responders working together is vital. The absence of such a system cost lives and untold millions of dollars in disasters such as the 1989 Loma Prieta earthquake, the 1991 Oakland Hills fire, and the most notable, the 9/11 World Trade Center disaster in 2001. In earthquake zones like Solano County is in, the likelihood of a disaster is an ever present threat. Solano County does not have a system that allows multiple first responder agencies to communicate with each other effectively.

Glossary

Computer Aided Dispatch (CAD) CAD systems allow public safety operations and communications to be augmented by an automated system. It can include computer controlled emergency vehicle dispatch, vehicle status, incident reporting and information management. It is used for entry of incident information, recommend resources to be dispatched, track status of units to an incident, maintain records of calls and call times related to an incident and provide assorted records and reports for analysis and documentation.

Geographical Information Systems (GIS) GIS is a computer system that allows mapping, modeling and analyzing large amounts of data within a single database according to location. GIS gives the power to integrate information, create maps, visualize scenarios and develop effective solutions. “With the ability to place critical data such as resources, events, conditions, weather, assets and threats onto the actual geography of a disaster area, emergency managers now have the ability to make decisions based on realistic representation of the visual data.”

Internet Protocol (IP) IP is a name given to a means of how computers find and send information to one another. IP defines how communication from a digital address to another works. It has the task of delivering *packets* from the source host to a destination host based solely on IP addresses in the packet headers. IP also defines packet structures that encapsulate data to be delivered.

Joint Powers Authority (JPA) A JPA is an entity whereby two or more public authorities (e.g. local governments or districts) may jointly exercise any power common to all of them. Some local examples are: Community Action Partnership Solano (CAP Solano JPA) and /Solano Emergency Medical Services Cooperative (SEMSC). CAP Solano is a leadership group consisting of members of government agencies, from participating cities and the County, created to provide oversight and coordination of homeless and safety net services to the residents of Solano County. Its purpose is to develop and carry out strategies that help low-income and homeless people become self- sufficient.

Local Area Formation Commission (LAFCO) Solano County LAFCO is an agency whose role is to control urban sprawl and to encourage the orderly formation and development of local governmental agencies. LAFCO is responsible for coordinating logical and timely changes in local governmental boundaries, including annexations and detachments of territory, incorporations of cities, formations of special districts, and consolidations, mergers and dissolutions of districts as well as reviewing ways to reorganize, simplify and streamline governmental structure.

Municipal Service Review (MSR) A report produced in order for a LAFCO commission to study and evaluate core municipal services within a county. Required on a five year cycle, reports are used as a means of information for a LAFCO and the community it serves.

Record Management System (RMS) Record management system is an agency wide system that provides for the storage, retrieval, retention, manipulation, archiving and viewing of information, records, documents or files pertaining to departmental operations. An important part of the RMS is a computer program designed to enter and track appropriate data and provide management staff with information to manage the agency. RMS must interface with State and Federal databases so that automatic recording occurs. Statistics are gathered to provide state and national safety data.

Required Responses

Solano County Board of Supervisors (Finding All)

City of Benicia (Findings 2, 3)

City of Dixon (Findings 2, 3)

City of Fairfield (Findings 2, 3)

City of Rio Vista (Findings 2, 3)

City of Suisun City (Findings 2, 3)

City of Vacaville (Findings 2, 3)

City of Vallejo (Findings 2, 3)

Fire Districts:

Cordelia (Findings 2, 3)

Dixon (Findings 2, 3)

East Vallejo (Findings 2, 3)

Montezuma (Findings 2, 3)

Suisun (Findings 2, 3)

Vacaville (Finding 2, 3)

Courtesy Copies

Solano County Sheriff's Office

Solano County Office of Emergency Services