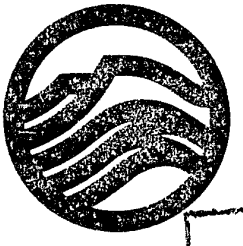
Contra
Costa
County



EMERGENCY COMMUNICATIONS CONSOLIDATION 911 STUDY

EXECUTIVE SUMMARY of the PHASE ONE REPORT

CONTRA COSTA COUNTY

EMERGENCY COMMUNICATIONS CONSOLIDATION (911) STUDY

EXECUTIVE SUMMARY

of the

PHASE I REPORT

Prepared by :

CONTRA COSTA COUNTY PUBLIC WORKS DEPARTMENT

EMERGENCY COMMUNICATIONS CONSOLIDATION (911) STUDY TEAM

WILLARD W. WEHE - PROJECT MANAGER

DAVID L. HOLCOMBE - ASSISTANT PROJECT MANAGER

Prepared under the sponsorship of the Board of Supervisors of the County of Contra Costa and funded by Grant G-2780 of the Criminal Justice Agency under provisions of the Law Enforcement Assistance Administration.

April 3, 1978

PREFACE

The County of Contra Costa, in response to requests from the Emergency Telephone System Committee, Cities, Districts, Law Enforcement and Fire Safety Agencies, is sponsoring a study of methods of improving emergency communications systems used by public safety agencies in the County. It is titled the Emergency Communications Consolidation and 911 Study. To conduct this study the County hired a project team; Mr. Willard W. Wehe, a communications system designer, and Mr. David L. Holcombe, a computer applications specialist and cost analyst. As an independent research group, the team is equally responsible and dedicated to all public safety agencies in the County.

The Study Team has prepared this Phase I report setting forth four improved emergency communications system alternatives, with each alternative being complete in terms of preliminary design, engineering, organizational structure, costs and funding considerations. The report is in sufficient depth and detail to be the basis for decision as to what avenue of improvement will be taken by the County and its public service agencies.

The problem of emergency communications and dispatch has concerned cities, districts and the County for a number of years. In 1972, Booz-Allen and Hamilton Management Consultants, under a grant from the Criminal Justice Agency of Contra Costa County, conducted a Countywide study on Police Services. Communications was a major area of study. This study indicated that the fragmented communications "systems" operated by the County's law enforcement agencies resulted in significant duplication of personnel and equipment resources and underutilization of communications personnel in local law enforcement agencies. In addition, such decentralized systems do not lend themselves well to to incorporation of the Emergency Telephone Number 911.

Assembly Bill 515, dated August, 1972, and Assembly Bill 416, signed into law in July, 1976, mandated the installation of the three-digit emergency telephone number 911 by December, 1984. This new telephone number provides easier access to emergency services by citizens and is being installed on a national basis. However, in a complex County such as Contra Costa, installation requires complex and costly engineering and/or some degree of consolidation of public safety - police, fire and emergency medical communications systems. Prior to this study, there has only been minimal research into methods of establishing 911 service in the County.

Each of the County's agencies has been contacted by the State Division of Communications and given suggestions as to how 911 service could be established. In 1974 the Criminal Justice Agency of Contra Costa County engaged a professional communications consulting firm, Aerospace Corporation, to provide a

description of methods for providing 911 service to the public through the use of regional law enforcement dispatch centers. Five options were identified and set forth ranging from a single Countywide facility to five dispersed geographically located centers. The current study is based largely on the findings of the Aerospace and the earlier Booz-Allen and Hamilton reports, but places greater emphasis on the engineering and other requirements needed to implement 911 service.

The Emergency Communications Consolidation and 911 Study completes the preliminary engineering and estimated costs required for each of the alternative dispatching plans. It does this in two phases. Phase I explores the options spelled out in the earlier studies with full detail and documentation and provides advantages and disadvantages of each option. This allows each agency to determine which plan best suits their needs. Phase II of the Study will be the development of the option chosen into a fully engineered final design ready for implementation.

Public safety agencies of Contra Costa County have needed improvements to their emergency communications systems for more than a decade. This need, coupled with the State of California law requiring submission of a final plan by July 1, 1978 showing how 911 service is to be provided, indicates that it is time to reach a decision as to which dispatch system alternative is to be adopted. It is recognized that if Proposition 13, the Jarvis Gann Initiative, passes, there is serious doubt that any city or county in California can comply with the 911 mandate. It is essential that all agencies rendering public safety services reach agreement on a plan concerning the number of Public Safety Answering Points (PSAPs), the type of operating organization, the method of funding and the police radio frequency plan which will best serve the public.

The Emergency Communications Consolidation and 911 Study Team is available to every agency to participate in presentations and to help in the evaluation process.

Very truly yours,

ARTHUR G. WILL
County Administrator

ACKNOWLEDGMENTS

The Phase I report presented by the Study Team could not have been completed without the assistance of service chiefs of the police and fire services and their staffs, who unstintingly provided their time and effort to collect statistics and information - often at great personal inconvenience. While the Study Team accepts full responsibility for the accuracy of all data analysis, the overall success of the project this far is due to the interest and cooperation of the public safety agencies.

In providing background information and an awareness of past courses of action relative to public safety, communications officers of the County Departments of Public Works, Administrator, and the Sheriff have been of inestimable value to the Study Team. Without their help, a great deal of time would have been spent in acquiring facts that were immediately available through these departments.

The report would not have been accurate without the extensive aid provided by service representatives and engineers of the Pacific Telephone Company. Determining costs of the 911 systems studied would have been much more difficult without the aid of the telephone company's staff.

Interpretations of the State of California law governing emergency telephone systems was generously provided by the State General Services Agency Division of Communications 911 program manager and staff. Constant examination of the Phase I report during its creation has assured that all alternative dispatch centers comply with State requirements.

Many others contributed to the production of the Phase I report, and more importantly, to the concept of improved public safety communication for the County and its agencies. Emergency medical providers; ambulance operators, hospital administrators - public and private, revealed important communications shortcomings and requirements. Communications Directors of sister counties were most helpful in supplying facts and data which the Study Team used for validity cross-checking. Engineers from Stanford Research Institute and Booz-Allen and Hamilton were very cooperative in suggesting sources of additional information.

The most important acknowledgment should go to the Contra Costa County Criminal Justice Agency, who was instrumental in channeling Law Enforcement Assistance Administration funds to finance the Study. The Phase I report, as well as the entire Study, was made possible through Grant Number G-2780-1-76, as authorized by the Federal Government under provisions of the Omnibus Crime Control and Safe Streets Act of 1968 through the California Council on Criminal Justice.

April 3, 1978

Willard W. Wehe
David L. Holcombe

Concord, California

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COMPARISON OF ALTERNATIVES

STUDY TEAM RECOMMENDATIONS

EXECUTIVE SUMMARY

In the early seventies, the County's law enforcement service chiefs, realizing that their police radio systems needed improvement and that they were required to establish 911 service, requested an LEAA funded study to provide a sense of direction. Booz-Allen-Hamilton completed their Police Services Study in 1973. This was followed by a shorter work by the Aerospace Corporation. Both studies indicated that improvement of the police radio system was necessary and that one good alternative would be consolidation.

The need still existed to establish 911 service and neither of the prior studies was definitive enough to use as an absolute guideline for system overhaul, so another study of a specialized nature was requested in early 1976. This was the Communications Consolidation and 911 Study - also LEAA funded, but with a specific charge of researching four alternative methods of providing 911 service, three of which adopt the idea of consolidation.

The Study Team has found that existing police dispatch facilities require substantial re-engineering in order to be fully supportive of field units. There is little ability to talk car-to-car and if a departmental unit is away from its base station, it has no back-up police communication. None of the law agencies have made use of the computer for assisting dispatchers, although four departments now have the equipment to proceed. There is a lack of security at most of the dispatch centers. Only three have protection for the dispatchers.

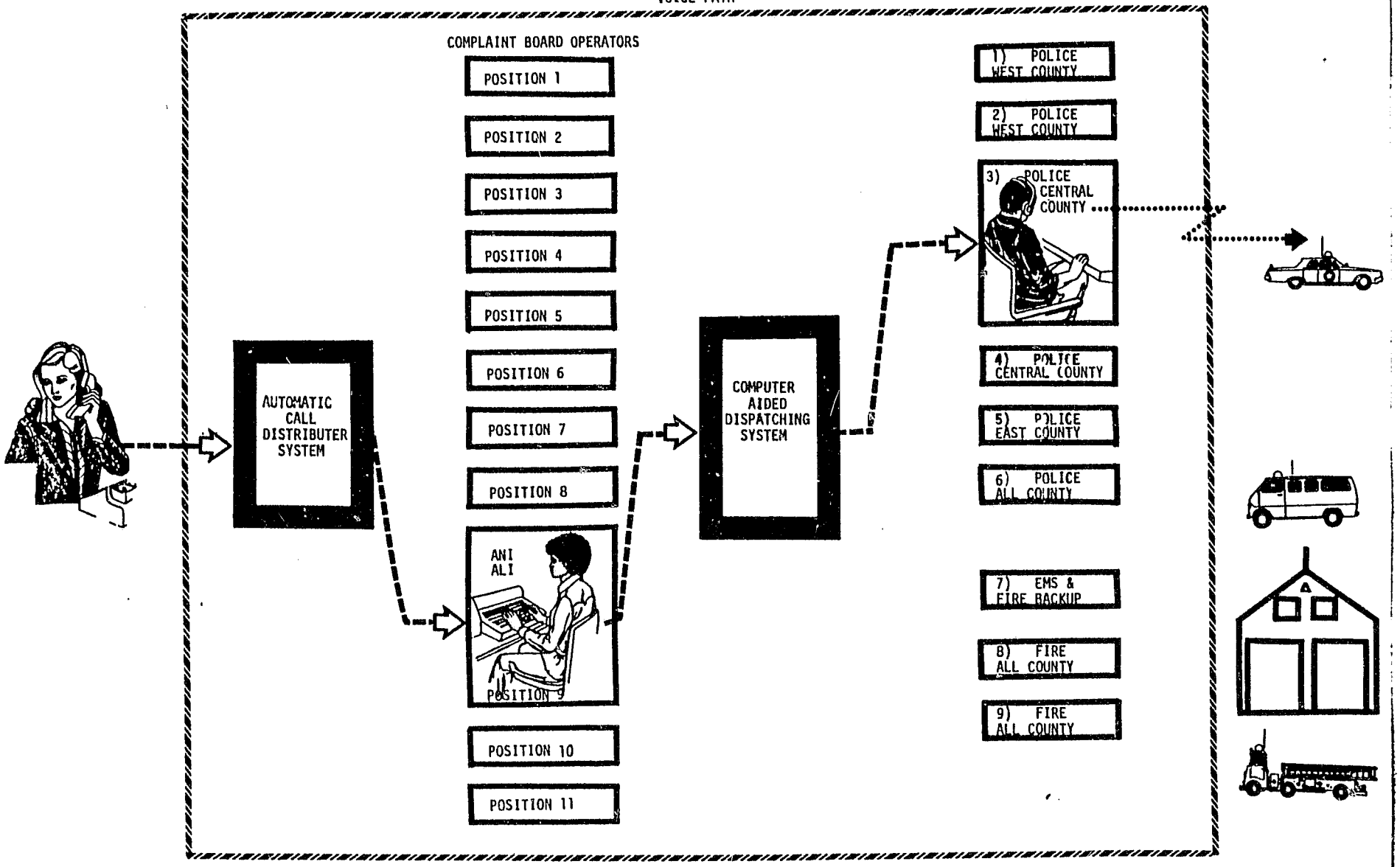
The fire service, perhaps due to the district configuration, has an existing communications plan that supports multi-agency mutual aid functions and has embarked on a plan to acquire even more fire radio channels. Fire operates in the low band, or 46mHz range, and it is still possible to add channels. Only one of the fire districts has plans for a computer aided dispatch system; however, these plans are fully funded and a system is being acquired of sufficient capacity as to be the backbone for the entire County fire service forces.

California State Law requires 911 service to be established by 1984, but in the interim there are certain actions that must be taken. Of principal importance is the filing, by July 1, 1978, of a final service plan. This time frame is common knowledge among the service chiefs and has served to stimulate thinking and planning of how not only 911 service is to be provided, but how future dispatching is to be done.

EXHIBIT A
EMERGENCY COMMUNICATIONS COMPLEX

PROPOSED OPERATION SYSTEM

VOICE PATH



EXECUTIVE SUMMARY (Cont'd)

The principal value of 911 is the reduction of time between the discovery of the incident and the call for aid. This time loss cannot be measured accurately, but is known to exceed the time it takes for a police or fire unit to arrive at the scene in most cases. The problem is that everyone uses the telephone to call for help and rarely does the caller have the correct number. In many cases, the caller dials the telephone operator, "0".

Telephone operators in the early days of telephone network design, were usually located nearby at one of the central offices. No longer. For the entire "415" calling area there are only ten operator locations and only one of them is in Contra Costa County. This means that the operator no longer has intimate knowledge of the area where the call is coming from. Dialing "0" for assistance is not satisfactory.

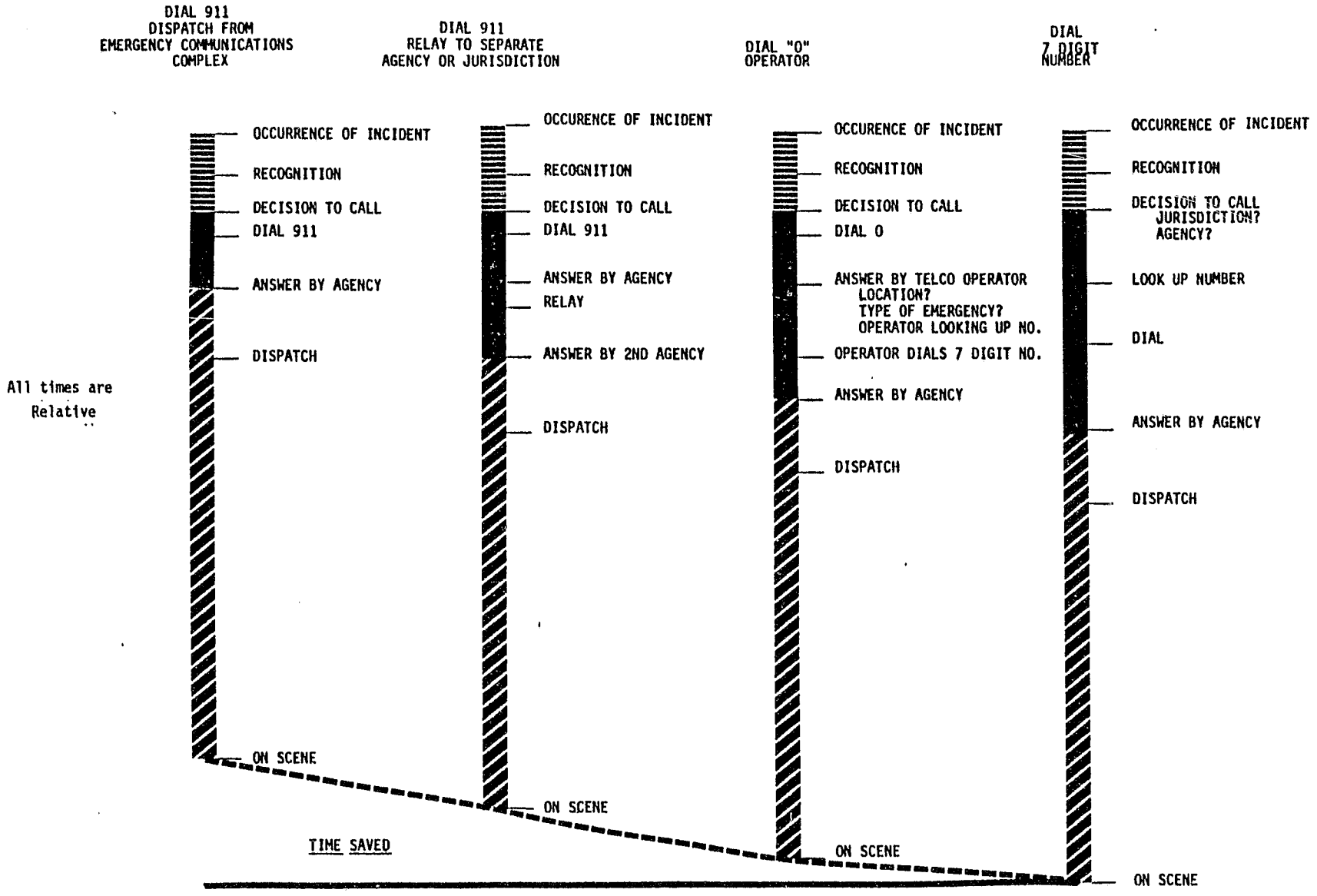
In a developed area such as Contra Costa County, it is difficult to establish 911 service because of the boundary mismatch problem. There is no match between city boundaries and telephone exchanges. Therefore, with many jurisdictions, there is no simple way to route the 911 call to the correct agency.

A dispatch center that receives all calls for service from citizens of the entire County processes these calls and dispatches the correct police, fire or emergency medical service agency, can operate very efficiently. It is also the ideal way to establish 911 service. The economies are chiefly through a more constant rate of use of dispatching personnel, which means that fewer complaint board operators and dispatchers are needed.

The single consolidated dispatch center concept does not enjoy overwhelming acceptance for two reasons: danger of losing the center and losing all communications, and loss of local control of an important part of a police and fire department activity. The ultimate sensitivity is whether a service chief will allow professional communicators to receive calls from his citizens and transmit them to his field units, realizing that the communicators are not under his direct control. The question must be answered before any progress can be made toward using a consolidated dispatch center. There are precedents; Santa Clara and Monterey Counties both function efficiently and have proven themselves.

EXHIBIT B

Estimated Comparative Time Savings Attributable to Telephone System Design



SOURCE: OFFICE OF TELECOMMUNICATIONS POLICY

Contra Costa County has unique geographical divisions. In a sense, there are three self-contained areas. This has suggested that consolidated dispatch centers could be developed for all-County, for West and East-Central, or three centers for West, East and Central. Technically, this is possible. The rate of use of dispatchers changes quickly - the greatest saving is with one center, and there is a problem with the Sheriff's Department who, naturally, does not want their forces split and controlled by more than one center.

While the fire service chiefs have taken steps to acquire more radio frequencies and improve their systems, the police chiefs only now realize that there is room for improvement. It is late and very difficult to acquire police channels. Only two options exist: utilize UHF (ultra high frequency) channels formerly assigned to television broadcasting, or attempt on a share basis to obtain more UHF channels in the more commonly used part of the spectrum.

UHF TV channels are available only if action is taken quickly, but their use requires a complete changeout of all radio equipment in the County. The TV frequency is just high enough so that none of the existing radio gear will be re-usable. This is expensive, but is the only plan that includes the Sheriff's Department with its need for County-wide area coverage.

Plan Two is based on the fact that over half of the County's police agencies now use UHF equipment in the 460mHz band and that with some adroit engineering and sharing, more channels may be acquired so that the entire County will have car-to-car, car-to-station communication, no matter where a vehicle is located.

An operating organization is needed to run any plan for consolidated dispatch centers. This organization must have provision for immediate input from a system user so that difficulties with calls, levels of service and other matters can have a hearing and be resolved. The organization must be responsive to its participants.

Findings of the Study Team indicate that the two most plausible administrative structures for an Emergency Communication Complex are a County Department of Communications or a Joint Powers Authority. Both have been used as organizational umbrellas for multi-agency dispatch complexes throughout the nation.

A Department of Communications of the County of Contra Costa is easy to create, requiring only an action by the Board of Supervisors, can be structured with an advisory board of dispatch center users to provide guidance and assist with policy and, in addition, can be a host for an engineering and maintenance support group. This plan is now the basis for the communications centers of Santa Clara and Monterey Counties.

The Joint Powers Authority has been used as a method of management in most of the Eastern consolidated dispatch centers. It is popular chiefly due to the high level of end user participation in setting policy. It has no direct taxing power and is not automatically recognized by the Federal Communications Commission.

A Communications Department, as an organ of local government, can apply for and hold federal radio licenses and through the County has taxing power. There is little to choose between the two organizations except the additional recognized power that the Department will have in dealing with State and Federal agencies on regulatory and funding matters.

There are cases where 911 service must be installed and the local governments cannot agree on the use of some degree of consolidation. Typical of this situation are the Counties of Orange and Los Angeles, both highly developed, both required to establish 911 service.

For these cases, the telephone companies have developed a mechanical solution to the boundary problem - called selective routing. It makes use of the telephone company central office computer to route the 911 call to the appropriate jurisdiction. Since most 911 calls are for police assistance, the call is first routed to the appropriate police agency who screens the call, services it if for police aid, and transfers it to a fire department if for fire assistance.

Selective routing is expensive, both in terms of the rental of complicated telephone central office equipment and the need to create and perpetually maintain a file for the telephone company showing the police and fire jurisdiction of every telephone in the County.

Economies of operation notwithstanding, selective routing will work well in Contra Costa County and in its elementary form is re-imbursable by the State of California under the 911 funding law.

From the earliest days of the project, the most often heard comment was: "who pays for the system?". This question transcends all concern over control, level of service, or type of managing organization. It is of crucial importance and applies to all 911 service plans including selective routing.

Three factors are generally used in cost apportioning multi-agency consolidations: assessed valuation, population, and rate of use or call volumes. None of these by themselves is fair, and a mix of the three becomes subjective and difficult to defend. It must be realized, however, that assessed valuation is the basis for paying for existing police and fire dispatch centers.

According to Interim Report Number Two of the Stanford Research Institute, commissioned by the County of Santa Clara, there is provision in Assembly Bill 2008 passed by the 1972-73 session of the State Legislature, for the transfer of a tax load in instances of "functional consolidation". Stanford researchers indicate that Article 8 functional consolidation is defined as the transfer, from one agency to another, of the responsibility for providing a service, as well as the responsibility for levying a tax to pay for it. AB 2008 also provides that the agency which surrenders the service, and consequently the fiscal responsibility, must reduce its property tax rate by the amount that was necessary to pay for the service in the last full year that it was retained. This enabling legislation has been used in the 1974 Stanford Research Institute report as the recommended method by which Santa Clara County should fund the improvement of its public safety communications facilities.

Initial costs, however, are considerable and it will take the full resources of all participants over several budget cycles to establish the Emergency Communications Complex. Since existing dispatch centers are now funded on the basis of assessed valuation, the levy for the construction of the Emergency Communications Complex could be on the same basis.

COMPARISONS AND RECOMMENDATIONS

Number of Public Safety Answering Points (PSAPs)

Alternative A - Single Dispatch Center (Chapter VII, Page 62)

Advantages:

1) Requires fewest number of personnel for operation

2) Least expense for maintenance of building and equipment

3) Best "rate of use" of dispatch personnel

4) Lowest expense for supervision

5) Simplified computer design and application

6) Highest degree of interservice coordination

7) Highest degree of interagency coordination

8) Least County-wide capital and operating expenditure

Disadvantages:

1) Greatest potential for damage to the center resulting in a loss of communications

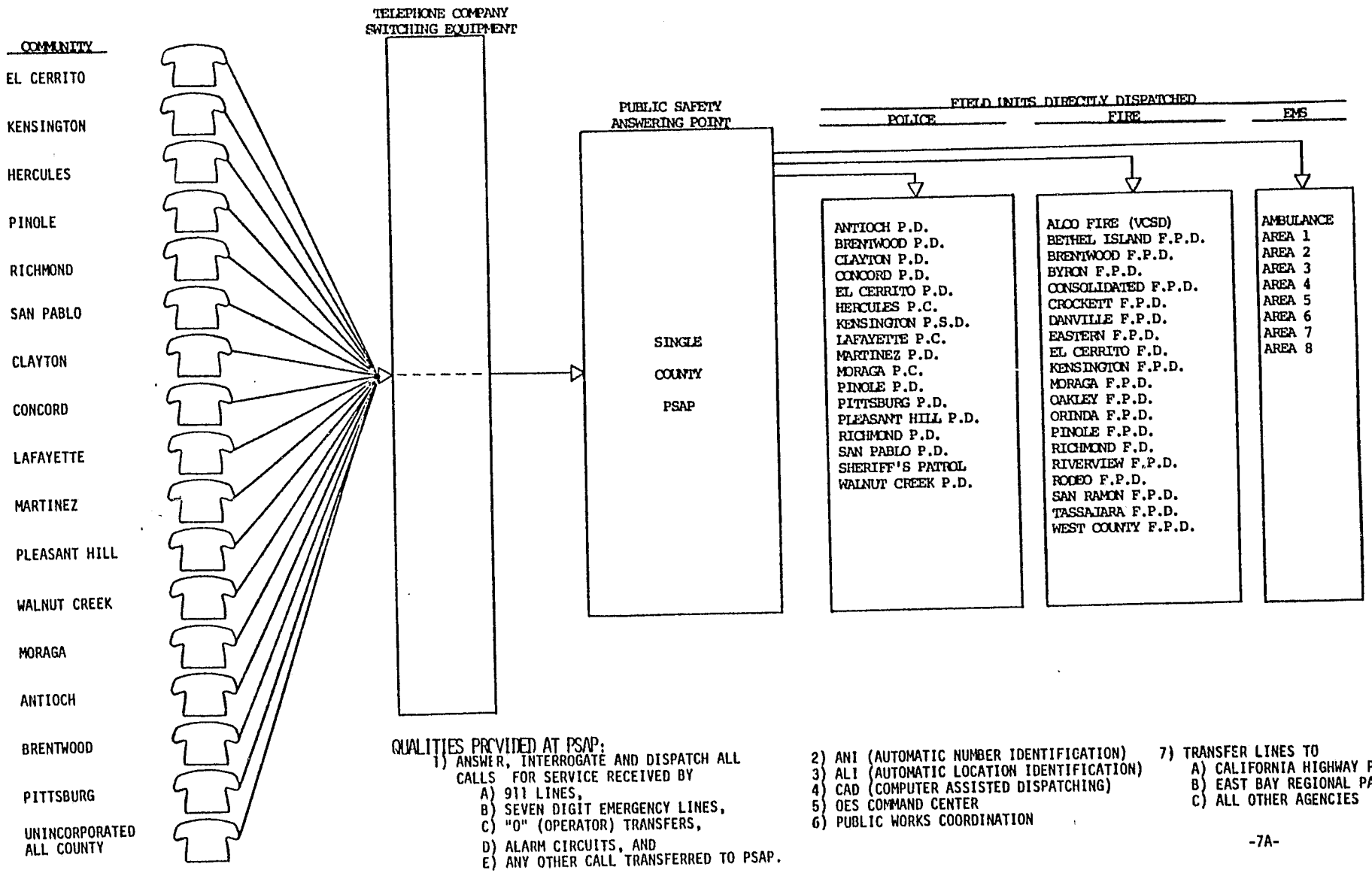
2) Greatest travel time for public safety administrators to coordinate operations during a disaster situation

3) Tendency to "even out" level of service, requiring smaller agencies to accept the policies of larger agencies

4) Greatest loss of local control

EXHIBIT C

CONTRA COSTA COUNTY
EMERGENCY COMMUNICATIONS CONSOLIDATION (911) STUDY
PRELIMINARY SINGLE CENTER CONCEPTUAL CONFIGURATION
OCTOBER 24, 1977



QUALITIES PROVIDED AT PSAP:

1) ANSWER, INTERROGATE AND DISPATCH ALL CALLS FOR SERVICE RECEIVED BY
   A) 911 LINES,
   B) SEVEN DIGIT EMERGENCY LINES,
   C) "0" (OPERATOR) TRANSFERS,
   D) ALARM CIRCUITS, AND
   E) ANY OTHER CALL TRANSFERRED TO PSAP.
2) ANI (AUTOMATIC NUMBER IDENTIFICATION)
3) ALI (AUTOMATIC LOCATION IDENTIFICATION)
4) CAD (COMPUTER ASSISTED DISPATCHING)
5) OES COMMAND CENTER
6) PUBLIC WORKS COORDINATION
7) TRANSFER LINES TO
   A) CALIFORNIA HIGHWAY PATROL
   B) EAST BAY REGIONAL PARKS
   C) ALL OTHER AGENCIES

COMPARISONS AND RECOMMENDATIONS (Cont'd)

Number of Public Safety Answering Points (PSAPs)

Alternative B - Two Dispatch Centers (Chapter VII, Page 75)

Advantages:

1) Can back each other up

2) Greater regional identification

3) Reduces reliance on long wire and microwave communications links

4) Reduced travel time for disaster communications teams

Disadvantages:

1) Greater cost

2) More personnel required

3) Need for construction and maintenance of two expensive buildings

Alternative C - Three Dispatch Centers (Chapter VII, Page 77)

Advantages:

1) Greatest degree of regional identification

2) Ability to back each other up

3) Utilizes shorter communications links

Disadvantages:

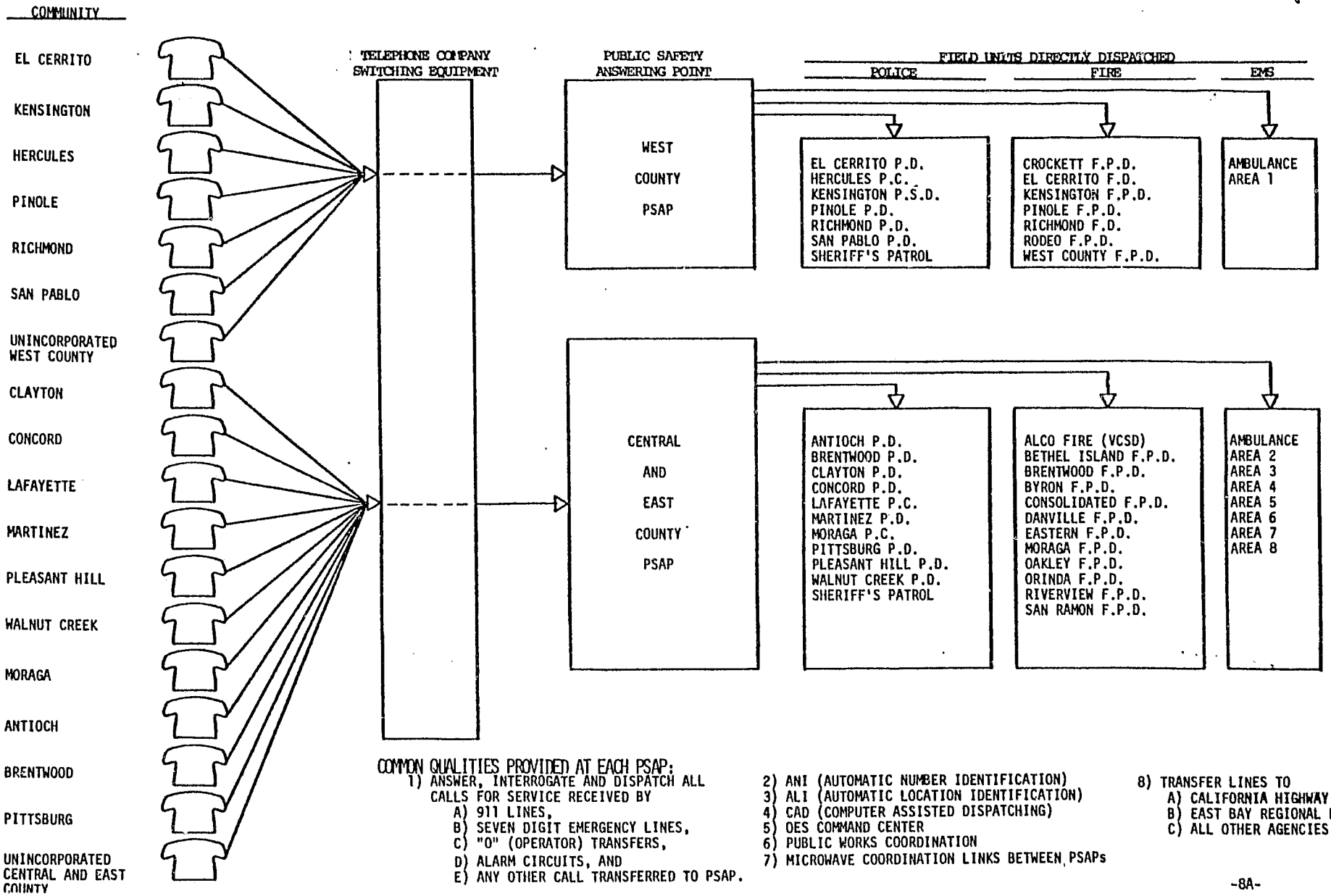
1) Highest cost of all consolidated plans

2) Lowest "rate of use" of dispatchers

3) Lowest degree of interservice and interagency coordination

EXHIBIT D

CONTRA COSTA COUNTY
EMERGENCY COMMUNICATIONS CONSOLIDATION (911) STUDY
PRELIMINARY TWO CENTER CONCEPTUAL CONFIGURATION
October 24, 1977

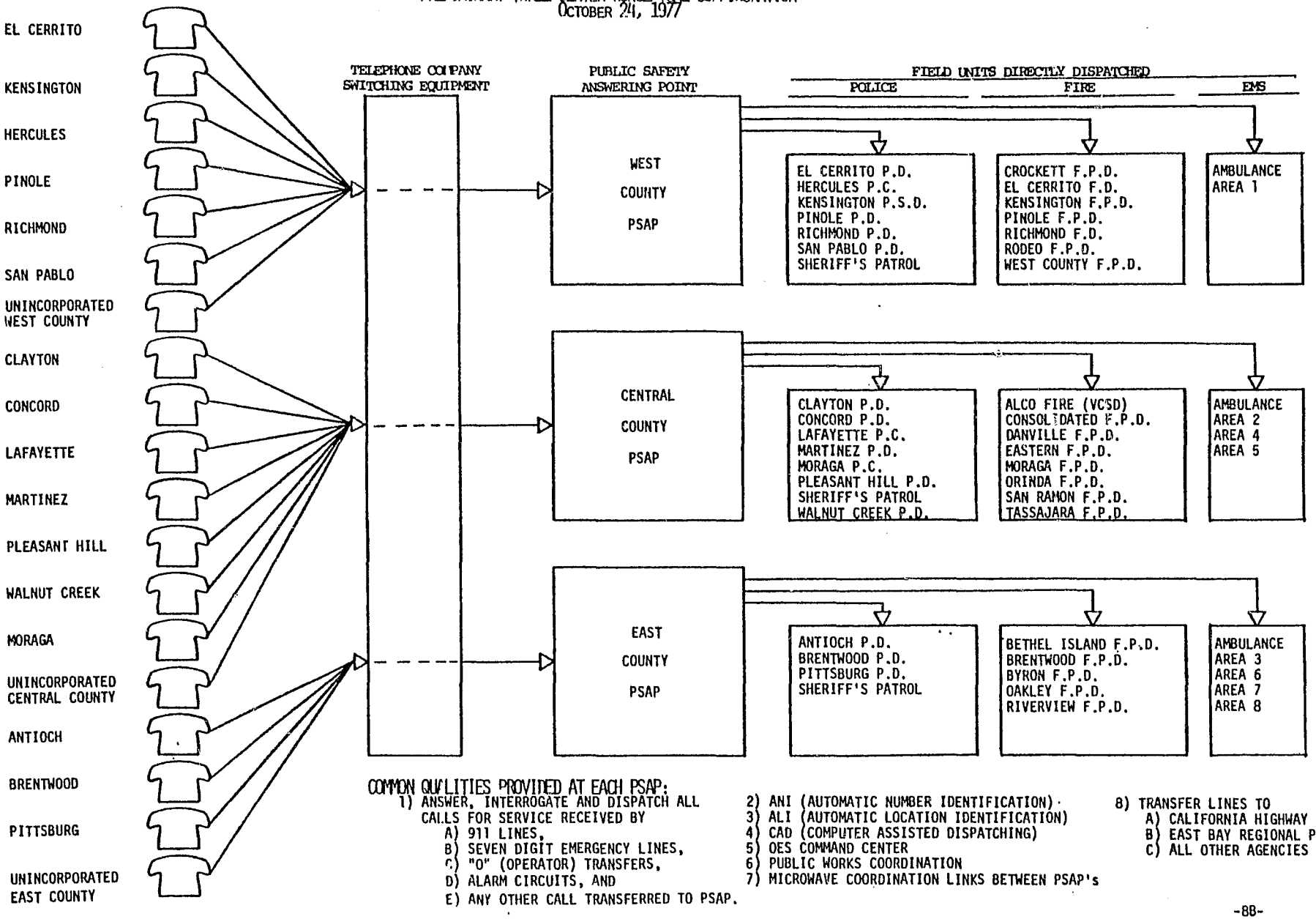


COMMON QUALITIES PROVIDED AT EACH PSAP:

1) ANSWER, INTERROGATE AND DISPATCH ALL CALLS FOR SERVICE RECEIVED BY
   A) 911 LINES,
   B) SEVEN DIGIT EMERGENCY LINES,
   C) "0" (OPERATOR) TRANSFERS,
   D) ALARM CIRCUITS, AND
   E) ANY OTHER CALL TRANSFERRED TO PSAP.
2) ANI (AUTOMATIC NUMBER IDENTIFICATION)
3) ALI (AUTOMATIC LOCATION IDENTIFICATION)
4) CAD (COMPUTER ASSISTED DISPATCHING)
5) OES COMMAND CENTER
6) PUBLIC WORKS COORDINATION
7) MICROWAVE COORDINATION LINKS BETWEEN PSAPs
8) TRANSFER LINES TO
   A) CALIFORNIA HIGHWAY PATROL
   B) EAST BAY REGIONAL PARKS
   C) ALL OTHER AGENCIES

EXHIBIT E

CONTRA COSTA COUNTY
EMERGENCY COMMUNICATIONS CONSOLIDATION (911) STUDY
PRELIMINARY THREE CENTER CONCEPTUAL CONFIGURATION
OCTOBER 24, 1977



COMMON QUALITIES PROVIDED AT EACH PSAP:

1) ANSWER, INTERROGATE AND DISPATCH ALL CALLS FOR SERVICE RECEIVED BY
   A) 911 LINES,
   B) SEVEN DIGIT EMERGENCY LINES,
   C) "O" (OPERATOR) TRANSFERS,
   D) ALARM CIRCUITS, AND
   E) ANY OTHER CALL TRANSFERRED TO PSAP.
2) ANI (AUTOMATIC NUMBER IDENTIFICATION)
3) ALI (AUTOMATIC LOCATION IDENTIFICATION)
4) CAD (COMPUTER ASSISTED DISPATCHING)
5) OES COMMAND CENTER
6) PUBLIC WORKS COORDINATION
7) MICROWAVE COORDINATION LINKS BETWEEN PSAP's
8) TRANSFER LINES TO
   A) CALIFORNIA HIGHWAY PATROL
   B) EAST BAY REGIONAL PARKS
   C) ALL OTHER AGENCIES

COMPARISONS AND RECOMMENDATIONS (Cont'd)

Number of Public Safety Answering Points (PSAPs)

Alternative C - Three Dispatch Centers

Disadvantages: (Cont'd)

4) Requires construction and maintenance of three high cost buildings

5) Most difficult of consolidation plans to utilize computer aided dispatching

6) Most complex and expensive supervision structure

Alternative D - Station Selective Routing (See Chapter VI, Page 51)

Advantages:

1) Maximum control over selection of dispatching personnel

2) Greatest degree of independence from other departments

3) Minimum initial capital outlay

Disadvantages:

1) No economies in reduction of personnel

2) Least degree of interservice of coordination

3) Least degree of interdepartment coordination

4) Requires each agency to provide for computer aided dispatching individually at great expense

5) Totally dependent on telephone company equipment to route calls

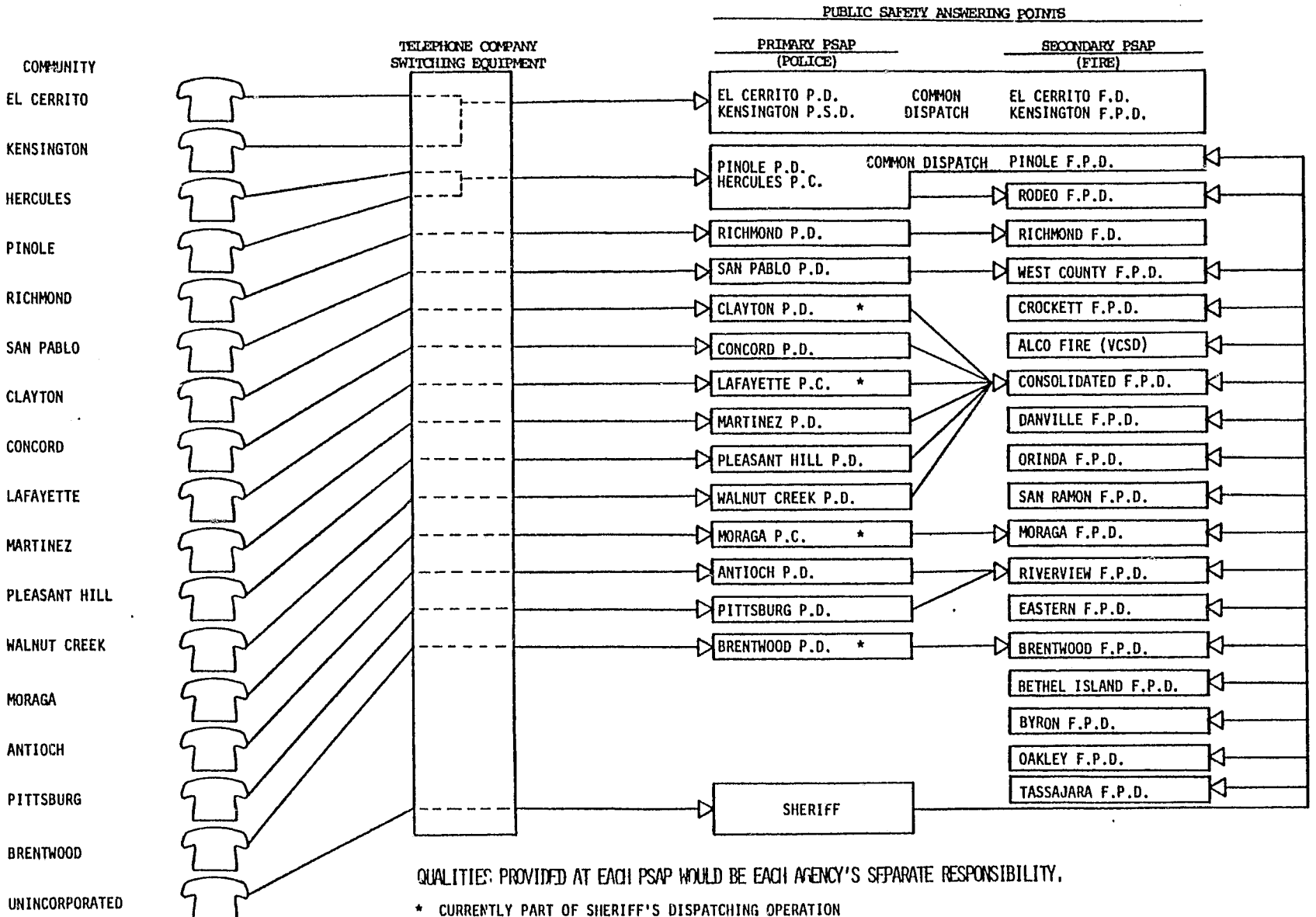
6) Highest ongoing costs of all plans

7) Every fire service call must be transferred

8) Need to develop and maintain ARG (Automatic Routing Guide) file

EXHIBIT F

CONTRA COSTA COUNTY
EMERGENCY COMMUNICATIONS CONSOLIDATION (911) STUDY
SELECTIVE ROUTING CONCEPTUAL CONFIGURATION
OCTOBER 24, 1977



QUALITIES PROVIDED AT EACH PSAP WOULD BE EACH AGENCY'S SEPARATE RESPONSIBILITY.

* CURRENTLY PART OF SHERIFF'S DISPATCHING OPERATION

COMPARISONS AND RECOMMENDATIONS (Cont'd)

Number of Public Safety Answering Points (PSAPs)

Recommendation: The Study Team finds that due to the cost effectiveness and capability for interservice and inter-department communication, that a single dispatch center is the best choice.

COMPARISONS AND RECOMMENDATIONS

OPERATING ORGANIZATION

Alternative A - County Department of Communications

Advantages:

1) Simple to establish

2) Can be vehicle for other communications assignments; maintenance, telephones

3) Direct access to other County Services

4) Administrative machinery for shared cost collection already available

5) End user control through both the Board of Supervisors and Users' Advisory Council direction

6) Dedicated to communications

7) Easiest worker transition

Disadvantages:

1) Creation of additional department broadens Board of Supervisors' span of control

2) User sensitivity to increased County control

3) Pay and classification disparities

Alternative B - Operation by a County Department of General Services

Advantages:

1) Can be vehicle for other communications assignments; maintenance, telephones

2) Direct access to other County services

3) Administrative machinery for shared cost collection already available

4) End user control through both the Board of Supervisors and Users' Advisory Council direction

EXHIBIT G

Emergency Communications Consolidation (911) Study

Proposed County Communications Department Table of Organization

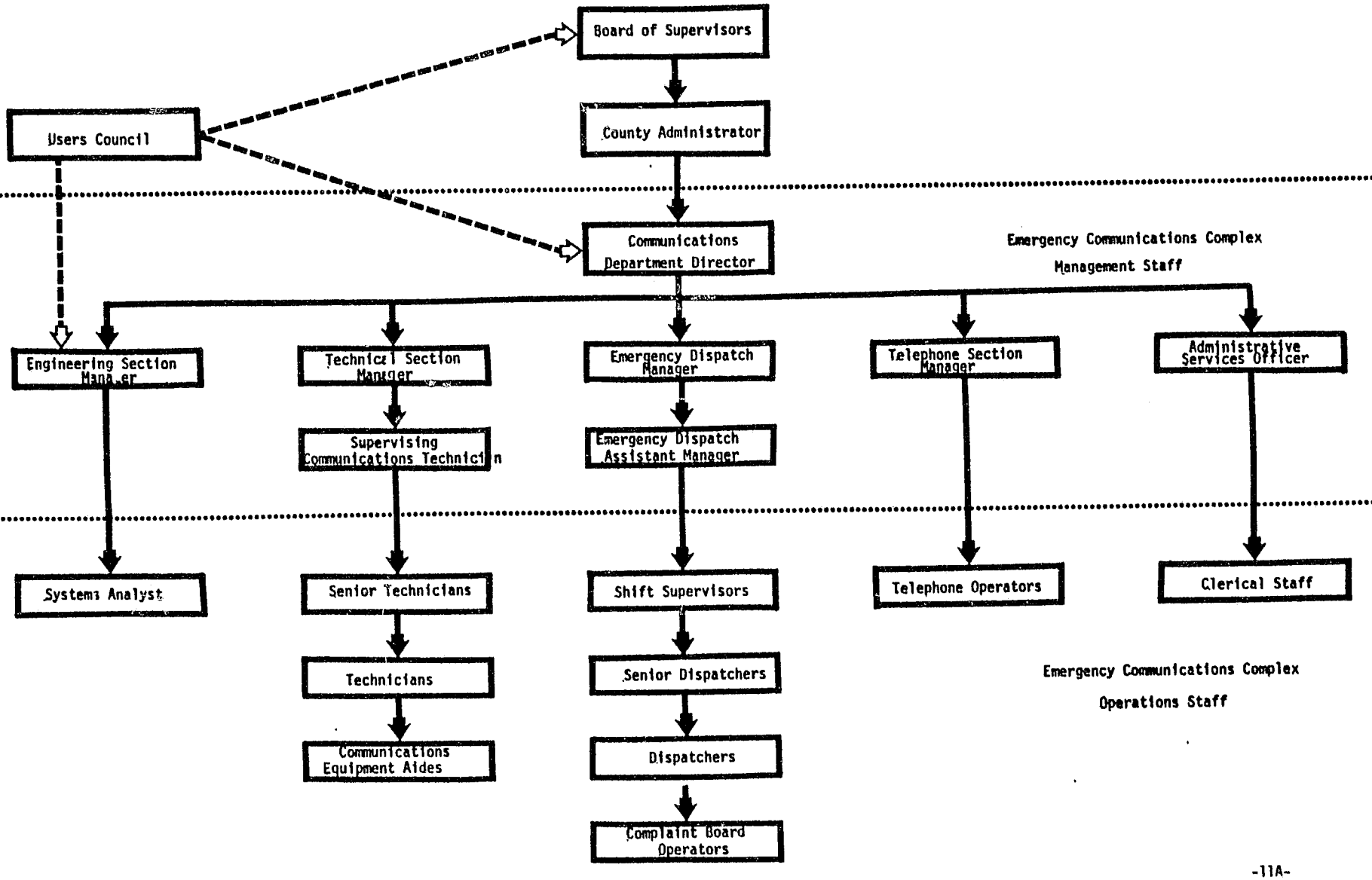
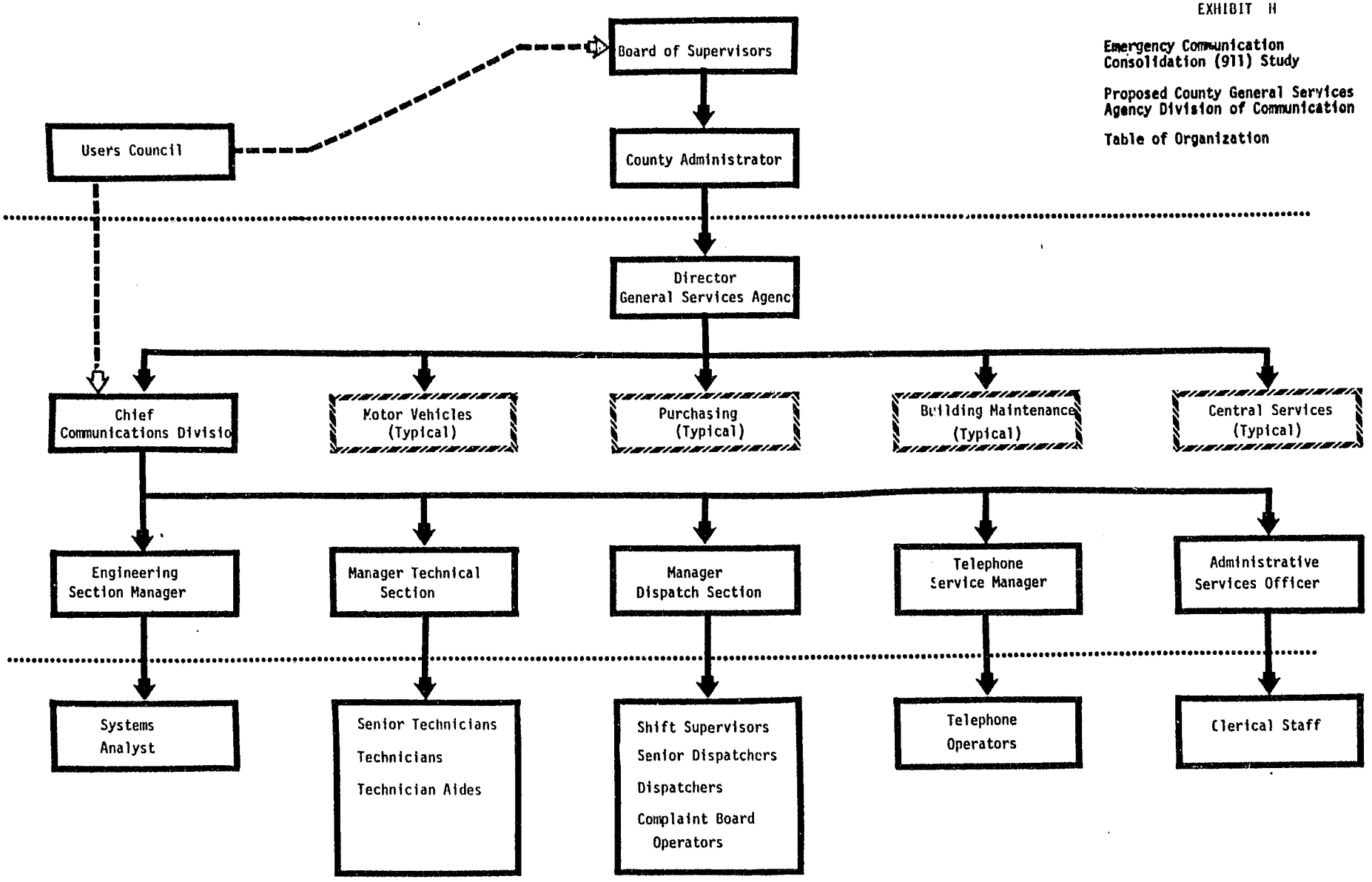


EXHIBIT H

Emergency Communication Consolidation (911) Study

Proposed County General Services Agency Division of Communication

Table of Organization



COMPARISONS AND RECOMMENDATIONS (Cont'd)

OPERATING ORGANIZATION

Alternative B - Operation by a County Department of General Services

Advantages: (Cont'd)

5) Easy worker transition

Disadvantages:

1) Depends upon Board of Supervisors creating a Department of General Services

2) Communications would have to compete for resources with other functions within the Department of General Services

3) Additional layer of management inserted between users and communications operation

4) Pay and classification disparities

Alternative C - Joint Powers Authority

Advantages:

1) Maximum system user guidance

2) Widely used elsewhere

3) No election required

Disadvantages:

1) Difficulty in resolving conflicts between many different users

2) Ability to support is dependent upon existing taxing powers of each participant

3) Not totally recognized by Federal Communications Commission

4) No direct access to support services

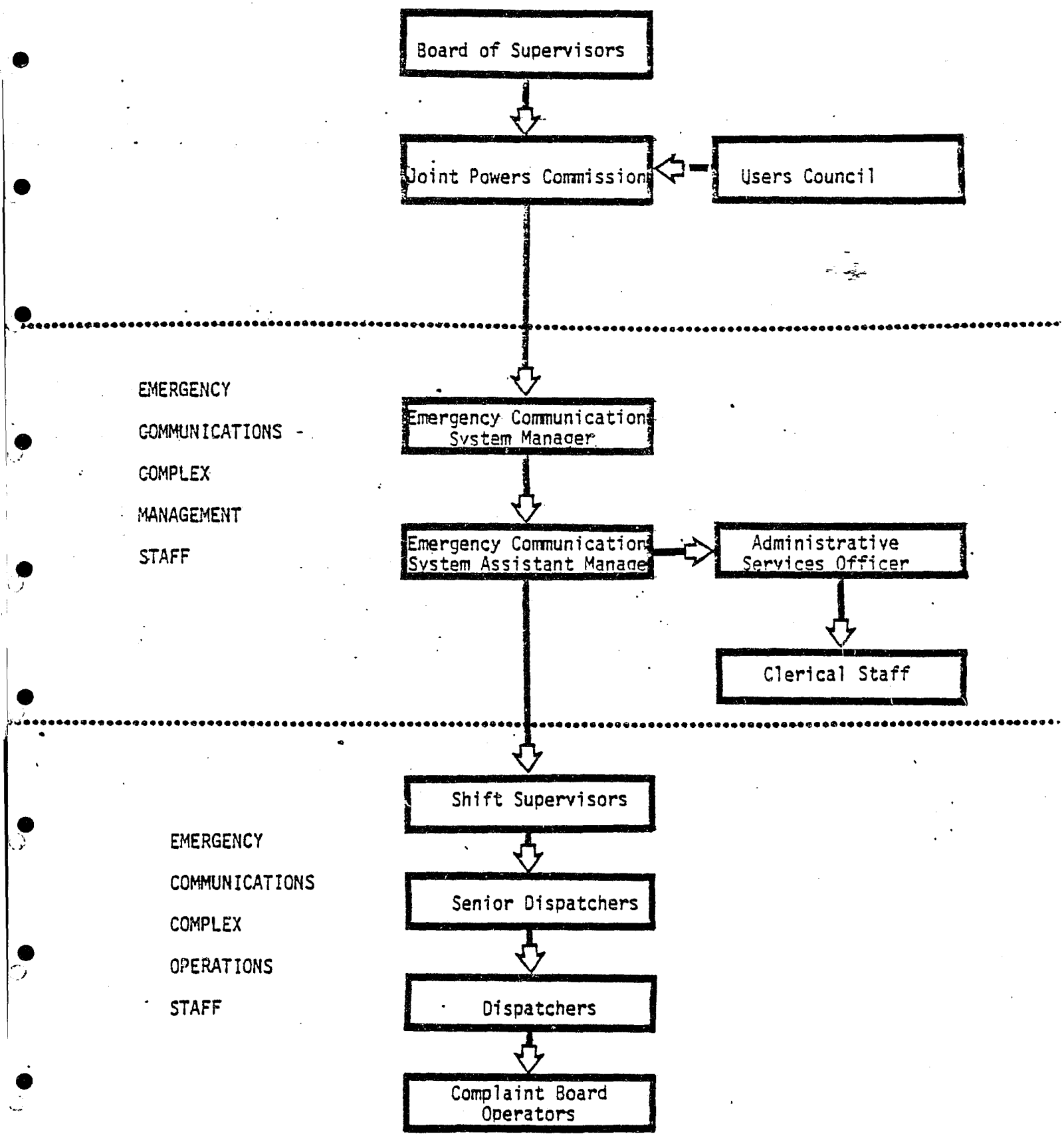
5) Requires agreement between a large number of agencies

6) Pay and classification disparities

EXHIBIT I

Emergency Communications Consolidation (911) Study

Proposed Joint Power Table of Organization



COMPARISONS AND RECOMMENDATIONS (Cont'd)

OPERATING ORGANIZATION

Alternative D - Communications Service District

Advantages:

1) Would have direct taxing power
2) Would have broad based representation
3) Separate and defined costs on tax bills

Disadvantages:

1) Requires an election to establish
2) Creates another layer of government
3) Requires State of California approval to establish
4) Requires staffing of a larger number of support services
5) Pay and classification disparities

Alternative E - Operation by Sheriff's Department

Advantages:

1) Organization already exists
2) Presently handles police and emergency medical communications for a large portion of the County

Disadvantages:

1) Reluctance of other agencies to accept operating policies set by Sheriff's Department
2) Will require extensive modification of existing Sheriff's Department dispatch facility
3) Question of user input to elected official
4) Load upon Sheriff's Department operation caused by processing other agencies' calls
5) Reluctance of fire insurance rating bureau to accept the dispatching of fire services by police agencies
6) Pay and classification disparities

COMPARISONS AND RECOMMENDATIONS (Cont'd)

OPERATING ORGANIZATION

Alternative F - Operation by Existing Police Department

Advantages:

1) Organization already exists

2) Already capable of handling law enforcement communications

Disadvantages:

1) Reluctance of other agencies to accept operating policies of a police department

2) No existing center can handle communications load without modification

3) No extensive support facilities

4) Fire insurance rating bureau is reluctant to rate highly fire departments who are dispatched by police agencies

OPERATING ORGANIZATION (Cont'd)

Recommendation: Due to its ease to establish, ability to draw on extensive support services and high level of control by participating end users, the Study Team feels that a County Department of Communications is the best type of organizational structure to operate any of the alternatives for consolidated communication systems.

ESTABLISHMENT AND OPERATIONAL FUNDING FOR CONSOLIDATED CENTERS

Alternative A - Total County Support (Chapter X, Page 118)

Advantages:

1) Precedent set by Santa Clara County

2) Costs distributed in approximate proportion to existing tax ratios

3) Fair to both cities and districts

4) No subjective formulas involved

5) Independent of growth shift and population changes

6) Compatible with County operating dispatch center complex

Disadvantages:

1) Fear of County domination of center operation through fiscal control

2) Complicated tax readjustment required

3) County Board of Supervisors may be reluctant to accept additional tax burden

EXHIBIT J
Contra Costa County

Emergency Communications Consolidation (911) Study

Four Alternatives Costs Summary

	Implementation Costs				Annual Recurring Costs			
	Single Center	Two Center	Three Center	Selective Routing	Single Center	Two Center	Three Center	Selective Routing
Total Personnel Costs	$ 132,500	$ 143,750	$ 155,000	$ 132,500	$1,794,750	$2,222,250	$2,411,250	$2,300,345
Telephone Costs	549,665	599,605	608,640	1,132,145	527,935	546,551	566,922	1,340,515
Housing Costs (Emergency Operations Center)	2,280,435	3,007,278	3,782,893	None	42,250	54,275	67,275	39,996
Equipment Costs	2,231,540	2,874,875	3,201,750	None	149,240	182,356	203,140	118,200
Total Costs	$5,194,140	$6,625,508	$7,748,283	$1,264*,645	$2,514,175	$3,005,432	$3,248,587	$3,799*,056
Estimated Cost to convert Current operations into comparative level of service configurations: (Refer to Exhibit 9D)				7,550,000				1,278,000
Total Comparative Costs	$5,194,140	$6,625,508	$7,748,283	$8,814,645	$2,514,175	$3,005,432	$3,248,587	$5,077,056

* Current operations are costed here at present service level which is significantly lower than the other alternatives.

ESTABLISHMENT AND OPERATIONAL FUNDING
FOR CONSOLIDATED CENTERS (Cont'd)

Alternative B - Charges to Agencies Based on Assessed Valuation (Chapter X, Page 117)

Advantages:

1) Assessed valuation is now the basis for paying for existing centers

2) Costs spread over broad base

Disadvantages:

1) No relation between use of center and assessed valuation

2) Difficulty in separating police/fire service costs

3) Assessed valuations do not change County-wide at the same time

Alternative C - Charges to Agencies Based on Population (Chapter X, Page 117)

Advantages:

1) Population has a relationship to activity

2) Population statistics are current and readily available

Disadvantages:

1) Population does not recognize the day-night population fluctuations caused by people working in industrial centers and residing in suburbs

2) Population does not reflect fire service requirements to protect valuable property which is often located in sparsely populated areas

3) Unequal levy on heavily and sparsely populated areas

EXHIBIT K
Contra Costa County
Emergency Communications Consolidation (911) Study
Estimated Cost Sharing by Agencies - Assessed Value

Police Agency	6/30/77 Assessed Value	Police Percentage	Establishment Costs Single Center	Establishment Costs Two Center	Establishment Costs Three Center	Operational Costs Single Center	Operational Costs Two Center	Operational Costs Three Center
Antioch PD	$ 116,868,220	3.15%	$ 102,411	$ 132,871	$ 157,429	$ 43,797	$ 54,218	$ 59,131
Brentwood PD	9,945,903	.27%	8,778	11,389	13,494	3,754	4,647	5,068
Clayton PD	15,275,578	.41%	13,330	17,294	20,491	5,700	7,057	7,696
Concord PD	428,916,596	11.55%	375,505	487,194	577,240	160,587	198,801	216,813
El Cerrito PD	116,769,883	3.15%	102,411	132,871	157,429	43,797	54,218	59,131
Hercules PD	28,277,335	.76%	24,709	32,058	37,983	10,567	13,081	14,266
Kensington PD	34,242,102	.92%	29,910	38,807	45,979	12,791	15,835	17,270
Lafayette PC	131,642,389	3.55%	115,415	149,743	177,420	49,358	61,103	66,639
Martinez PD	118,386,309	3.19%	103,711	134,558	159,428	44,353	54,907	59,882
Moraga PC	87,811,848	2.36%	76,727	99,548	117,947	32,813	40,621	44,301
Pinole PD	61,243,588	1.65%	53,644	69,599	82,463	22,941	28,400	30,973
Pittsburg PD	81,701,750	2.20%	71,525	92,799	109,951	30,588	37,867	41,298
Pleasant Hill PD	115,377,303	3.11%	101,110	131,184	155,430	43,240	53,530	58,380
Richmond PD	553,276,367	14.90%	484,418	628,503	744,664	207,165	256,462	279,698
San Pablo PD	51,753,122	1.39%	45,191	58,632	69,469	19,326	23,925	26,093
Walnut Creek PD	320,622,377	8.63%	280,573	364,025	431,306	119,989	148,541	161,999
Total Police Departments	$2,272,110,670	61.19%	$1,989,368	$2,581,075	$3,058,123	$ 850,766	$1,053,213	$1,148,638
Sheriff (Unincorporated)	1,440,998,032	38.81%	1,261,765	1,637,057	1,939,627	539,602	668,004	728,528
Total Law Enforcement	$3,713,108,702	100.00%	$3,251,133	$4,218,132	$4,997,750	$1,390,368	$1,721,217	$1,877,166
Total Fire Districts	$3,713,108,702	100.00%	1,393,342	1,807,771	2,141,893	595,872	737,664	804,499
State Paid 911 Telephone Costs	N/A	N/A	549,665	599,605	608,640	527,935	546,551	566,922
Total County	$3,713,108,702	100.00%	$5,194,140	$6,625,508	$7,748,283	$2,514,175	$3,005,432	$3,248,587

EXHIBIT L

Contra Costa County

Emergency Communications Consolidation (911) Study

Fire Estimated Cost Sharing by Agencies - Assessed Value

Fire District	Code	6/30/77 Assessed Value	Fire Percentage	Establishment Costs			Operational Costs		
				Single Center	Two Center	Three Center	Single Center	Two Center	Three Center
Bethel Island FPD	2003	$ 16,806,116	.49%	$ 6,827	$ 8,858	$ 10,495	$ 2,920	$ 3,615	$ 3,942
Brentwood FPD	2004	34,234,908	.99%	13,794	17,897	21,205	5,899	7,303	7,965
Byron FPD	2005	19,610,537	.57%	7,942	10,304	12,209	3,396	4,205	4,586
Contra Costa County FPD	2025	1,387,865,350	40.15%	559,428	725,821	859,970	239,242	296,171	323,006
Crockett - Carquinez FPD	2028	18,028,933	.52%	7,245	9,400	11,138	3,099	3,836	4,183
Danville FPD	3005	194,909,368	5.64%	78,584	101,958	120,803	33,607	41,604	45,374
Eastern FPD	2013	7,996,947	.23%	3,205	4,158	4,926	1,371	1,697	1,850
El Cerrito FD		116,769,883	3.38%	47,095	61,103	72,396	20,140	24,933	27,192
Kensington FPD	3007	34,242,102	.99%	13,794	17,897	21,205	5,899	7,303	7,965
Moraga FPD	2010	104,102,563	3.01%	41,940	54,414	64,471	17,936	22,204	24,215
Oakley FPD	2017	24,278,125	.70%	9,753	12,654	14,993	4,171	5,164	5,631
Orinda FPD	2018	111,342,562	3.22%	44,866	58,210	68,969	19,187	23,753	25,905
Pinole FPD	2019	18,648,075	.54%	7,524	9,762	11,566	3,218	3,983	4,344
Richmond FD		553,845,837	16.02%	223,214	289,605	343,131	95,458	118,174	128,881
Riverview FPD	2022	504,198,630	14.58%	203,149	263,573	312,288	86,878	107,551	117,296
Rodeo FPD		54,473,466	1.58%	22,015	28,563	33,842	9,415	11,655	12,711
San Ramon FPD	3070	59,732,849	1.73%	24,105	31,274	37,055	10,309	12,762	13,918
Tassajara FPD	2023	4,632,969	.13%	1,811	2,350	2,784	775	959	1,046
Valley Comm. Services Dist.	4025	54,414,963	1.57%	21,875	28,382	33,628	9,355	11,581	12,631
West County FPD	2011	137,045,971	3.96%	55,176	71,588	84,819	23,597	29,211	31,858
Public Fire Districts Assessed Value		$3,457,180,154	100.00%	$1,393,342	$1,807,771	$2,141,893	$595,872	$737,664	$804,499
Private Fire Protection Areas		255,928,548							
Total County Assessed Value		$3,713,108,702							

EXHIBIT M

Contra Costa County

Emergency Communications Consolidation (911) Study

Estimated Cost Sharing by Agencies - Population

Police Agency	1/1/77 Estimated Population	Police Percentage	Establishment Costs Single Center	Establishment Costs Two Center	Establishment Costs Three Center	Operational Costs Single Center	Operational Costs Two Center	Operational Costs Three Center
Antioch PD	34,700	5.80%	$ 188,566	$ 244,652	$ 289,870	$ 80,641	$ 99,831	$ 108,876
Brentwood PD	3,880	.65%	21,132	27,418	32,485	9,037	11,188	12,202
Clayton PD	2,640	.44%	14,305	18,560	21,990	6,118	7,573	8,260
Concord PD	97,700	16.31%	530,260	687,978	815,133	226,769	280,730	306,165
El Cerrito PD	22,650	3,78%	122,893	159,445	188,915	52,556	65,062	70,957
Hercules PD	850	.14%	4,552	5,905	6,997	1,947	2,410	2,628
Kensington PD	5,290	.88%	28,610	37,120	43,980	12,235	15,147	16,519
Lafayette PC	19,450	3.25%	105,662	137,089	162,427	45,187	55,940	61,008
Martinez PD	20,050	3,35%	108,913	141,307	167,425	46,577	57,661	62,885
Moraga PC	14,950	2.50%	81,278	105,453	124,944	34,759	43,030	46,929
Pinole PD	15,500	2.59%	84,204	109,250	129,442	36,011	44,580	48,619
Pittsburg PD	26,450	4.42%	143,700	186,441	220,900	61,454	76,078	82,971
Pleasant Hill PD	25,200	4.21%	136,873	177,583	210,405	58,534	72,463	79,029
Richmond PD	70,000	11.69%	380,057	493,100	584,237	162,534	201,210	219,440
San Pablo PD	18,850	3.15%	102,411	132,871	157,429	43,797	54,218	59,131
Walnut Creek PD	48,200	8.05%	261,716	339,560	402,319	111,925	138,558	151,111
Total Police Departments	426,360	71.21%	$2,315,132	$3,003,732	$3,558,898	$ 990,081	$1,225,679	$1,336,730
Sheriff (Unincorporated)	172,340	28.79%	936,001	1,214,400	1,438,852	400,287	495,538	540,436
Total Law Enforcement	598,700	100.00%	$3,251,133	4,218,132	4,997,750	$1,390,368	$1,721,217	$1,877,166
Total Fire Districts	598,700	100.00%	1,393,342	1,807,771	2,141,893	595,872	737,664	804,499
State Paid 911 Telephone Costs			549,665	599,605	608,640	527,935	546,551	566,922
Total County	598,700	100.00%	$5,194,140	$6,625,508	$7,748,283	$2,514,175	$3,005,432	$3,248,587

Exhibit N
Contra Costa County
Emergency Communicaitons Consolidation (911) Study
Fire Estimated Cost SHaring by Agencies - Population

Fire District	1/1/77 Estimated Population	Fire Percentage	Establishment Costs Single Center	Establishment Costs Two Center	Establishment Costs Three Center	Operational Costs Single Center	Operational Costs Two Center	Operational Costs Three Center
Bethel Island FPD	1,980	.33%	$ 4,593	$ 5,966	$ 7,068	$ 1,966	$ 2,434	$ 2,855
Brentwood FPD	6,730	1.12%	15,605	20,247	23,989	6,674	8,262	9,010
Byron FPD	1,470	.25%	3,483	4,519	5,355	1,490	1,844	2,011
Contra Costa County FPD	261,100	43.61%	607,637	788,370	934,080	259,861	321,696	350,843
Crockett - Carquinez FPD	3,280	.55%	7,663	9,943	11,780	3,277	4,057	4,425
Danville FPD	26,650	4.45%	62,004	80,446	95,314	26,516	32,826	35,800
Eastern FPD	640	.11%	1,533	1,989	2,356	655	811	885
El Cerrito FD	22,650	3.78%	52,663	68,334	80,964	22,524	27,884	30,410
Kensington FPD	5,290	.88%	12,262	15,908	18,849	5,244	6,491	7,080
Moraga FPD	17,710	2.96%	41,243	53,510	63,400	17,638	21,835	23,813
Oakley FPD	5,240	.88%	12,262	15,908	18,849	5,244	6,491	7,080
Orinda FPD	13,860	2.32%	32,326	41,940	49,692	13,824	17,114	18,664
Pinole FPD	21,580	3.60%	50,163	65,080	77,108	21,451	26,556	28,962
Richmond FD	70,000	11.69%	162,882	211,328	250,387	69,657	86,233	94,046
Riverview FPD	71,700	11.98%	166,922	216,571	256,599	71,386	88,373	96,379
Rodeo FPD	6,190	1.03%	14,351	18,620	22,061	6,137	7,598	8,286
San Ramon FPD	8,600	1.44%	20,064	26,032	30,843	8,581	10,622	11,585
Tassajara FPD	720	.12%	1,672	2,169	2,570	715	885	965
Valley Community Services District	10,430	1.74%	24,244	31,455	37,269	10,368	12,835	13,998
West County FPD	42,880	7.16%	99,763	129,436	153,360	42,664	52,817	57,602
Total County Population	598,700	100.00%	$1,393,342	$1,807,771	$2,141,893	$595,872	$737,664	$804,499

ESTABLISHMENT AND OPERATIONAL
FUNDING FOR CONSOLIDATED CENTERS (Cont'd)

Alternative D - Coll Volumes (Chapter X, Page 117)

Advantages:

1) Ability to exactly measure by using computer reports

2) Each agency pays only for the service it receives

Disadvantages:

1) Police bear most of cost

2) Requires billing in arrears

3) Totally dependent on computer for accurate cost determination

Recommendation Concerning Establishment Costs:

The Study Team finds that assessed valuation is the most commonly used basis for funding the present assembly of public safety dispatch centers; therefore, it should be the base for apportioned cost participation to defray initial equipment acquisition and constructions costs. This initial cost should be reduced to the extent possible by the pursuance of grant funding from all available sources.

Recommendation Concerning Operational Costs:

The Study Team recommends that the ongoing costs be borne by the County of Contra Costa. This would parallel the action of Santa Clara County whereby consolidated public safety dispatching systems are County funded. According to the Stanford Research Institute, in their interim study of Santa Clara County dated 1974, Assembly Bill 2008 passed by the 1972-73 California Legislature provides in Article 8, that: "In instances of functional consolidation, the tax rate may be increased to pay the actual cost of providing the consolidated service". Functional Consolidation is defined as the transfer, from one agency to another, of the responsibility for providing a service, as well as the responsibility for levying a tax to pay for it. AB 2008 also provides, according to the SRI report, that the agency which surrenders the service, and consequently the fiscal responsibility, must reduce its property tax rate by the amount that was necessary to pay for the service in the last full year that it was retained.

Exhibit O
Contra Costa County
Emergency Communications Consolidation (911) Study
Estimated Cost Sharing by Agencies - Estimated Usage

Police Agency	Approximate Annual Case Load	Police Percentage	Establishment Costs Single Center	Establishment Costs Two Center	Establishment Costs Three Center	Operational Costs Single Center	Operational Costs Two Center	Operational Costs Three Center
Antioch PD	22,611	6.13%	$ 199,294	$ 258,571	$ 306,362	$ 85,230	$ 105,511	$ 115,070
Brentwood PD	1,317	.36%	11,704	15,185	17,992	5,005	6,196	6,758
Clayton PD	1,006*	.27%	8,778	11,389	13,494	3,754	4,647	5,068
Concord PD	51,688	14.02%	455,809	591,383	700,685	194,929	241,315	263,179
El Cerrito PD	12,585	3.41%	110,864	143,838	170,423	47,412	58,693	64,011
Hercules PD	680*	.18%	5,852	7,593	8,996	2,503	3,098	3,379
Kensington PD	1,968	.53%	17,231	22,356	26,488	7,369	9,122	9,949
Lafayette PC	7,410*	2.01%	65,348	84,784	100,455	27,946	34,596	37,731
Martinez PD	18,300	4.96%	161,256	209,219	247,888	68,962	85,372	93,107
Moraga PC	5,695*	1.54%	50,067	64,959	76,965	21,412	26,507	28,908
Pinole PD	12,382	3.36%	109,238	141,729	167,924	46,716	57,833	63,073
Pittsburg PD	22,827	6.19%	201,245	261,103	309,361	86,064	106,543	116,197
Pleasant Hill PD	18,132	4.92%	159,956	207,532	245,889	68,406	84,684	92,357
Richmond PD	91,100	24.69%	802,705	1,041,458	1,233,944	343,281	424,969	463,471
San Pablo PD	19,597	5.31%	172,635	223,983	265,381	73,829	91,397	99,678
Walnut Crrek PD	15,952	4.32%	140,449	182,223	215,903	60,064	74,357	81,094
Total Police Departments	303,250	82.20%	$2,672,431	$3,467,305	$4,108,150	$1,142,882	$1,414,840	$1,543,030
Sheriff (Unincorporated)	65,653	17.80%	578,702	750,827	889,600	247,486	306,377	334,136
Total Law Enforcement	368,903	100.00%	$3,251,133	$4,218,132	$4,997,750	$1,390,368	$1,721,217	$1,877,166
Total Fire Districts		100.00%	1,393,342	1,807,771	2,141,893	595,872	737,664	804,499
State Paid 911 Telephone Costs			549,665	599,605	608,640	527,935	546,551	566,922
Total County			$5,194,140	$6,625,508	$7,748,283	$2,514,175	$3,005,432	$3,248,587

Exhibit P
Contra Costa County
Emergency Communications Consolidations (911) Study

Fire Estimated Cost Sharing by Agencies - Estimated Usage

Fire District	1977 Annual Responses	Fire Percentage	Establishment Costs Single Center	Establishment Costs Two Center	Establishment Costs Three Center	Operational Costs Single Center	Operational Costs Two Center	Operational Costs Three Center
Bethel Island FPD	272	.97%	$ 13,515	$ 17,535	$ 20,776	$ 5,780	$ 7,155	$ 7,804
Brentwood FPD	224	.80%	11,147	14,462	17,135	4,767	5,901	6,436
Byron FPD	100	.36%	5,016	6,508	7,711	2,145	2,656	2,896
Contra Costa County FPD	8,322	29.77%	414,798	538,173	637,642	177,392	219,602	239,499
Crockett - Carquinez FPD	275	.98%	13,655	17,716	20,991	5,840	7,229	7,884
Danville FPD	1,369	4.90%	68,274	88,581	104,953	29,198	36,146	39,420
Eastern FPD	95	.34%	4,737	6,146	7,282	2,026	2,508	2,735
El Cerrito FD	939	3.36%	46,816	60,741	71,968	20,021	24,786	27,031
Kensington FPD	277	.99%	13,794	17,897	21,205	5,899	7,303	7,965
Moraga FPD	914	3.27%	45,562	59,114	70,040	19,485	24,122	26,307
Oakley FPD	290	1.04%	14,491	18,801	22,276	6,197	7,672	8,367
Orinda FPD	831	2.97%	41,382	53,691	63,614	17,697	21,909	23,894
Pinole FPD	1,183	4.23%	58,938	76,469	90,602	25,205	31,203	34,030
Richmond FD	4,377	15.65%	218,058	282,916	335,206	93,254	115,444	125,904
Riverview FPD	4,198	15.01%	209,141	271,346	321,498	89,440	110,723	120,755
Rodeo FPD	583	2.08%	28,982	37,602	44,551	12,394	15,343	16,734
San Ramon FPD	493	1.76%	24,523	31,817	37,697	10,487	12,983	14,159
Tassajara FPD	17	.06%	836	1,085	1,285	358	443	483
Valley Community Services District	1,008	3.60%	50,160	65,080	77,108	21,451	26,556	28,962
West County FPD	2,198	7.86%	109,517	142,091	168,353	46,836	57,980	63,234
Total County	27,965	100.00%	$1,393,342	$1,807,771	$2,141,893	$595,872	$737,664	$804,499

POLICE RADIO CHANNELS

Alternative A - Use of UHF channels in the TV 16 and 17 range (Chapter III, Page 21)

Advantages:

1) Places all police and Sheriff's Department communications on same part of spectrum

2) Makes use of clear channel frequencies

3) Provides for digital radio channel

Disadvantages:

1) Requires total equipment changeout

2) Difficulty in acquiring enough channels to implement

3) High cost

Alternative B - Use of UHF channels in the 460mHz range

Advantages:

1) Maximizes re-use of existing equipment

2) Recognizes capital outlay recently made by Richmond Police

Disadvantages:

1) Requires sharing channels with other users

2) Splits Sheriff's Department from other police users

3) Requires waiver from Federal Communications Commission

Recommendation: The Study Team, principally because of the difficulty in operating the Sheriff's Department in a different band from all other police departments, recommends adoption of Plan One; the use of UHF TV 16 and 17 channels.

EXHIBIT Q
Contra Costa County
Emergency Communications Consolidation (911) Study
Police Frequency Plan One
March 1, 1978

	SHERIFF													ZONE FREQUENCIES			
FREQUENCIES	488.3375 CLEMARS	488.XXX1 EAST	488.XXX2 WEST	488.XXX3 CENTRAL	488.XXX4	488.XXX5	488.XXX6	488.XXX7	488.XXX8	488.XXX9	488.XXX10	488.XXX11	488.XXX12	488.XXX13 EAST	488.XXX14 WEST	488.XXX15 CENTRAL	155.040 LG DATA CHANNEL
	PA	PB	PC	PD	PE	PF	PG	PH	PI	PJ	PK	PL	PM	PX	PY	PZ	L5
AGENCY																	
ANTIOCH PD	M	M			P							M	M	Z	M	M	D
BRENTWOOD PD	M	M			M							P	M	Z	M	M	D
PITTSBURG PD	M	M			M							M	P	Z	M	M	D
EL CERRITO PD	M		M			P		M	M					M	Z	M	D
HERCULES PD	M		M				P	M	M					M	Z	M	D
KENSINGTON PD	M		M			P		M	M					M	Z	M	D
PINOLE PD	M		M				P	M	M					M	Z	M	D
RICHMOND PD	M		M					P	T				S	M	Z	M	D
SAN PABLO PD	M		M			M		M	P					M	Z	M	D
CONCORD PD	M			M		S				P	M			M	M	Z	D
MARTINEZ PD	M			M	M					M		P		M	M	Z	D
PLEASANT HILL PD	M			M	P					M	M			M	M	Z	D
WALNUT CREEK PD	M			M			S			M	P			M	M	Z	D
SHERIFF	M	PE	PW	PC										Z	Z	Z	D
CLAYTON PD	M	M		P						M	M			M	Z	M	D
LAFAYETTE PC	M	M	M	P							M			M	Z	M	D
MORAGA PC	M	M	M	P							M			M	Z	M	D

PLAN ONE

Utilization Code Table

P= Primary
S= Secondary
T= Tertiary
Z= Home Zone
M= Available to Mobiles
D= Data only

SHERIFF ONLY
- PC= Primary - Central County
- PW= Primary - West County
- PE= Primary - East County

EXHIBIT R
Contra Costa County
Emergency Communications Consolidation (911) Study
Police Frequency Plan Two
March 1, 1978

PLAN TWO

AGENCY	P1 155.190	P2 155.640	P3 154.920 CLEMARS VHF	P4 155.310	P5 154.935 CLEMARS IOW	P6 460.150	P7 460.375	P8 460.300	P9 460.400	P10 460.025 CLEMARS UHF	P11 39.060 (FARGO)	P12 460.425	P13 460.325	P14 460.250	P15 460.475	ZONE FREQUENCIES: PA 460.600 EAST	PB 460.625 WEST	PC 460.200 CENTRAL	PD 460.350	PE 460.175	L5 155.040 LG DATA CHANNEL
ANTIOCH PD				*			M			M						Z	M	M		P	D
BRENTWOOD PD				*			M			M						Z	M	M		P	D
PITTSBURG PD							P			M						Z	M	M		M	D
EL CERRITO PD							P	M		M						M	Z	M			D
HERCULES PD				*				M		M				P	M	M	Z	M			D
KENSINGTON PD							P	M		M						M	Z	M			D
PINOLE PD				*				M		M				P	M	M	Z	M			D
RICHMOND PD							M	P	S	M					T	M	Z	M			D
SAN PABLO PD				*				M		M					P	M	Z	M			D
CONCORD PD						P				M		M		S		M	M	Z	M		D
MARTINEZ PD				*		M				M		M				M	M	Z	P		D
PLEASANT HILL PD				*		M				M		M				M	M	Z	P		D
WALNUT CREEK PD						M				M		P	S			M	M	Z	M		D
SHERIFF	PW	PC	M	PE																	D
CLAYTON PD	M	P	M	M																	D
LAFAYETTE PC	M	P	M	M																	D
MORAGA PC	M	P	M	M																	D
																Needs Fire Waiver	Needs Fire Waiver				

Utilization Code Table:

- P= Primary
- S= Secondary
- T= Tertiary
- Z= Home Zone
- M= Available to Mobiles
- *= Relinquished to Sheriff

Sheriff Only:
- PC= Primary - Central County
- PW= Primary - West County
- PE= Primary - East County

- D= Data Only