NORTHERN CALIFORNIA 800 MHz

REGIONAL COMMUNICATIONS PLAN

REGION 6

Amended January 2013

REVISION HISTORY

Adopted	November 29, 1990
Amended	August 3, 1992
Amended	October 24, 1994
Amended	November 6, 1998
Amended	April 2001
Amended	November 2005
Amended	April 2009
Amended	January 2013

IMPORTANT INFORMATION

Current information, the names and contact information of the current Chair, Vice Chair, and Secretary, and a copy of the Plan may be found on the Region 6 website http://www.rgn6rpc.org.

Please contact the Region 6 800 MHz NPSPAC Regional Planning Committee Chair if you have any questions regarding this Plan.

FOREWORD

1986-1987: ACTIONS LEADING TO ADDITIONAL 800 MHZ SPECTRUM AND REGIONAL PLANNING

On September 19, 1986, the Federal Communications Commission (hereinafter "Commission") issued the Allocation Order allocating 6 megahertz of spectrum for public safety use. The Commission selected the 821-824 MHz and 866-869 MHz bands because they were adjacent to frequencies already used for public safety purposes, thereby providing for expansion of, or interoperability with, existing public safety communications systems already licensed in the 806-821/851-866 MHz bands. In order to be certain that the newly allocated frequencies would be used efficiently; the Commission specified that the frequencies could not be used until it had adopted a National Plan for public safety spectrum utilization. The Commission noted the importance of public participation in development of the plan and stated its intention to seek guidance from the public safety community and other interested members of the public.

In December 1986, the Commission established the National Public Safety Planning Advisory Committee (hereinafter "NPSPAC") to involve parties interested in public safety in the planning effort. NPSPAC had open membership, and all interested parties were invited to participate in its meetings. The Commission directed NPSPAC to:

(a) Identify communications requirements of public safety services;
(b) Develop a scheme for efficient use of the new frequencies;
(c) Develop a scheme to increase utility of existing public safety frequencies;
(d) Recommend the manner in which new technologies can be applied to public safety frequencies; and
(e) Recommend guidelines to ensure compliance with the National Plan.

NPSPAC issued its Initial Report to the Commission in March 1987. In this report, NPSPAC discussed a wide variety of topics in three general categories: developing regional plans, use of the allocated frequencies, and meeting technical requirements.

On May 15, 1987, the Commission issued a Notice of Proposed Rule Making proposing policies and rules for the National Plan. The Notice envisioned the National Plan as an overall spectrum management approach consisting of policy guidelines, technical standards, and procedures to satisfy public safety communications needs for the foreseeable future. The Commission proposed a structure for the National Plan that consisted of both national and regional planning aspects. Under the proposal, the United States would be divided into regions. The regions would have as much autonomy as possible, within the framework of the National Plan, to develop regional plans that meet their different communications needs. The Notice identified certain common national requirements. Specifically, the Notice identified requirements pertaining to intercommunication channels, a channeling plan, use of trunking, return of unused frequencies, and technical standards to control interference. Plans were to be developed for each region by the public safety entities in those regions. The regional plans were to focus on the spectrum requirements of all these entities and determine how the available spectrum could best be used to satisfy these requirements.

On November 24, 1987 in FCC 87-359 for Docket No. 87-112, the Commission adopted the policies, procedures, and rules that constitute a national plan for public safety services (National Plan) by adopting service rules and technical standards for the 821-824/866-869 MHz bands. This National Plan, which the Commission developed in response to a Congressional directive, has been effective in ensuring that the new channels are used effectively and efficiently for important public safety functions such as crime control, firefighting, and emergency medical services.

2005: CONTINUING EFFORTS TOWARDS ENSURING THE EFFECTIVE AND EFFICIENT USE OF NPSPAC SPECTRUM IN REGION 6

The Region 6 (Northern California) 800 MHz NPSPAC Regional Plan (hereinafter "Plan") was originally approved by the Commission on November 29, 1990. It has subsequently been modified with the approval of the Commission on five separate occasions. This current modification of the Plan incorporates prior modifications and several other changes incentivized by the "re-banding process". It incorporates changes necessary to accommodate the current and future improvements in technology, including the trend towards the use of digital modulation and the reduction of channel widths. It also provides for changes in procedure that eliminates the past practice of allotting specific channels to every county in the Region in anticipation of future requirements. Although this has led to some satisfactory outcomes, it has resulted in excessive delays and difficulties – obliging Plan modifications to meet the requirements for spectrum needed for the expansion of existing systems and/or the creation of new systems. The Plan now eliminates this process by placing all existing licensed systems in the Table of Channels (see Attachment E) and declaring the entire Table as an open pool to be recommended to the applicant and the Commission as necessary, and available to all eligible and qualified applicants. Attachments will be modified as necessary to ensure a valid record.

In accordance with the above objectives, the guidelines and requirements outlined in this amended Plan have been developed and approved by the Region 6 (Northern California) 800 MHz Frequency Advisory and Plan Revision Subcommittee to assist in the implementation of the Plan.

REGION 6 (NORTHERN CALIFORNIA) 800 MHz REGIONAL PLAN
(Amended January 2013*)*

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REGION 6 (NORTHERN CALIFORNIA) 800 MHz REGIONAL PLAN
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1.0 INTRODUCTION

This Plan has been developed by a representative group of the Public Safety Services eligible for licensing in the six MHz of spectrum, 806 – 809 and 851 – 854 MHz (821-824 and 866-869 MHz prior to rebanding), allocated for such use by the Commission. It will focus primarily on the assignment and use of the 800 MHz portion of the spectrum. It will also address assignment and usage of all frequencies and channels assigned to the Public Safety Radio Service as these are vacated in the migration of systems to 800 MHz.

1.1 DESCRIPTION OF REGION

Region 6 encompasses the 48 of California's 58 counties situated north of Latitude 35 degrees, 48 minutes (approximately). Geographically, this represents nearly two thirds of the State of California. Elevations range from 300 feet below sea level to over 14,000 feet above. There are desert areas, heavily forested areas, high mountains, and the largest inland valley in the world.

Population ranges from the heavily populated metropolitan San Francisco Bay area to the sparsely populated northern region, which is composed of a number of rural counties.

These variations in topography and population greatly affect the public safety communications requirements and the types of systems best suited for this purpose. This 800 MHz Plan reflects these considerations.

2.0 REGIONAL PLANNING METHODOLOGY

This section covers the method used to create the Plan, the composition of the committees, and the intended method of administering the Plan.

2.1 PLANNING COMMITTEES

Region 6 (Northern California) 800 MHz Regional Planning Committee membership is open to all interested parties, and input is received from a broad spectrum of local, state and federal representatives, as well as vendors and suppliers. The intent is to involve every city, special district, state agency and any other interested service or party in the planning process, to the extent possible.

2.2 THE ROLE OF THE NORTHERN CALIFORNIA CHAPTER OF THE ASSOCIATION OF PUBLIC SAFETY COMMUNICATIONS OFFICIALS, INC

The Northern California Chapter of the Association of Public Safety Communications Officials, Inc. (hereinafter "NAPCO") has a membership well over 300, composed of representatives from all of the Public Safety Services (Police, Fire, Local Government, Highway Maintenance, Transportation, Governor's Office of Emergency Services, and Forestry/Conservation), as well as from the Special Emergency Radio Service. Due to the broad spectrum of representation in this organization, public safety issues are equitably accommodated.

Elements of the Plan have been a discussion item during and subsequent to most monthly chapter meetings since February 1988 as the monthly NAPCO meetings provide a convenient venue for NPSPAC Review and Revision Committee forums, and the majority of those

attending the NAPCO meetings also attend the NPSPAC Committee meetings. The support and participation of all members have been continuously solicited. This has resulted in well-qualified and truly representative input in the preparation of the Plan.

It should be noted that the Chapter has continuously assisted the Planning Committee's efforts by providing financial support in the form of postage, printing, and telephone calls and the use of their website www.rgn6.org. The Planning Committee gratefully acknowledges and thanks the Chapter for this support.

2.3 ADJACENT REGIONS

2.3.1 REGION 5 - SOUTHERN CALIFORNIA

This Region is of particular concern. There are many common radio paths between the two regions that must be considered. Of equal concern is the requirement to consider the State of California governmental agencies as common to both regions. All of the major public safety functions of the State are predicated upon the use of statewide systems, and it is imperative that the 800 MHz Plans of both Regions recognize this requirement.

2.3.2 REGION 27 – NEVADA

All frequency assignments, regardless of frequency band, are carefully coordinated between Northern California and Region 27 in the State of Nevada. This Plan reflects a similar concern and attention to common paths and interests.

2.3.3 REGION 35 – OREGON

The northernmost counties of California are mountainous and there are many common paths to Southern Oregon, which is also mountainous. It is common practice to carefully coordinate all frequency usage and this area and this has been considered in the preparation of this Plan.

2.3.4 REGION 3 – ARIZONA

The southeastern portion of Region 6 is approximately 85 kilometers from the northwestern area of Region 3. It is, therefore, important that coordination exists between the two Regions noting, however, that Region 3 is not formally required to respond or to reciprocate with Region 6

2.3.4 ENSURING INTERREGIONAL INTERFERENCE PROTECTION

With the exception of Region 5 and the use of statewide systems in California, there are no existing or foreseeable NPSPAC systems within over 100 kilometers of Region 6. This is due primarily to the indigenous mountainous terrain and sparsely populated rural areas separating these regions from each other. It is also a result of the use of high-level systems in this portion of the spectrum being discouraged. However, although 800 MHz deployments in these interregional boundary areas are not foreseen, the protection against any potential for interregional interference is nevertheless necessary. Thus, in facilitating the pool concept, it shall be mutually agreed that applications for channels or systems that result in calculable or predictable evidence of either co-channel or adjacent channel signal

strengths encroaching on the area of these adjacent regions shall not be approved without written consent.

2.4 NOTICE TO POTENTIAL USERS

The Northern California Chapter of APCO has been utilized to acquaint all potential users with the Plan and to solicit input relative to requirements and potential need. Monthly meetings are held, and this has been a topic of discussion at every meeting, with 60 to over 100 persons in attendance.

Vendors are urged to keep the committee informed relative to the potential use of 800 MHz by their clients and prospective customers. This has been an on-going process.

2.5 REGIONAL PLAN ADMINISTRATION REVIEWS AND REVISIONS

Following Region 6 – 800 MHz Plan acceptance, the 800 MHz Regional Planning Committee (RPC) empowered the 800 MHz Frequency Advisory and Plan Revision Subcommittee with full authority to conduct Region 6 NPSPAC business and Plan modifications. The terms "Region 6 – 800 MHz RPC" and Region 6 Frequency Advisory and Plan Revision Subcommittee are synonymous and merely reflect the transition of the original RPC's roles from creating and securing FCC acceptance of the original Plan to the roles of reviewing and revising the original Plan as required.

The Region 6 NPSPAC Frequency Advisory and Plan Revision Subcommittee (hereinafter "Committee") is composed of interested individuals representing all public safety services. The Committee was originally selected by the Region 6 – 800 MHz RPC and will continue to function as long as deemed necessary. It comprises:

- A Chair
- A Vice Chair
- A Secretary
- A representative (or representatives) of the Law Enforcement
- A representative (or representatives) of the Fire Service/EMS
- A representative (or representatives) of the Local Government Services
- A representative of the Bay Area Regional systems
- A representative of the Sacramento Area Regional systems
- A representative of Other Regional systems
- A representative of the State General Government
- A representative of the Special Districts
- A representative (or representatives) At Large
- One of the Region 6 Frequency Advisors

This Subcommittee shall typically meet monthly, or at the call of the Chair. It shall meet as required to make necessary changes in the Plan, or to arbitrate any disputes from applicants arising from the administration of the provisions of the Plan. Any applicant or licensee that is not in accord with a jurisdictional interpretation or decision may request a meeting of the Committee to present their views. In the event satisfaction is not reached at that level, it must be clearly understood that the final authority rests with the Commission, and the applicant or

licensee has the right to present the case to the Commission if it cannot be resolved at the Regional level.

Day-to-day administration of the provisions of the Plan is handled by the Committee. This Committee processes the requests from applicants in strict accordance with the provisions of the Plan.

2.6 DISPUTE RESOLUTION

In the event an agency disputes the implementation of this plan after FCC approval, the agency must notify the Chair of the dispute in writing. The Chair will attempt to resolve the dispute on an informal basis. If a party to the dispute employs the Chair, then the Vice Chair will attempt resolution (note that this assumes the Chair and Vice Chair are not from the same organization). In such cases, the Chair shall be deemed to have a conflict of interest and will be precluded from voting on such matters. If after 30 days the dispute is not resolved, the Chair (or Vice Chair) will appoint an ad-hoc Dispute Resolution Committee. The committee shall be comprised of members selected from representatives of the counties and cities in the region, with one representative from a State agency acting as the tie-breaking vote on an as-needed basis. No member selected may be from an agency involved in the dispute. That committee will select a Chair to head the committee. The Regional Plan Chair (or Vice Chair) will represent the Region in presentations to the Dispute Resolution Committee. The Committee will hear input from the disputing agency, any affected agencies and the Region Chair. The Committee will then meet in executive session to prepare a recommendation to resolve the dispute. Should this recommendation not be acceptable to the disputing agency or agencies, the dispute and all written documentation will be forwarded to the Federal Communications Commission for final resolution.

3.0 PROVISIONS OF THE PLAN

3.1 SCOPE - SPECIAL CONSIDERATIONS

In accordance with the Commission's stated requirements, the Plan addresses each major issue of the National Plan.

Historical information indicates the continuing need for the expansion of existing systems, and the creation of new ones. This trend has resulted in a dramatic shortage of frequencies for public safety applications. These 800 MHz channels alone cannot address this frequency shortage. As previously stated, the Plan attempts to consider any possible release of frequencies resulting from the creation of new 800 MHz systems, and the best reuse of these channels.

The projected need for new 800 MHz channels is based on the:

- Need to alleviate channel overloading in existing systems by splitting these systems into separate systems, or by the replacement of entire systems.
- Application of new techniques requiring spectrum, such as mobile data terminals, vehicle location, and transmission of data for scene management and similar purposes.
- Continuing population increases and changes in governmental structure resulting in the creation of new cities, special districts and similar governmental agencies, all requiring additional public safety radio channels.

- Need for improved mutual aid capability and improved disaster response capability within existing communications systems.

Negative factors that have been considered include the:

- Cost of converting existing systems to entirely new configurations.
- Limitations imposed by the 800 MHz channel loading criteria. This is a particularly negative aspect for small agencies, which may require more than one clear channel, but cannot meet loading requirements.
- Loss of present inter-agency and intra-agency coordination, by moving one or more systems to the new portion of the spectrum. This proves to be a major consideration as California has led the nation in attempting to develop mutual aid communications plans.

4.0 INTEROPERABILITY

As emphasized, both by the original Planning Committee, and in Commission statements, a major consideration in the National Plan has been to establish the capability to provide a means of communicating between public safety agencies at all levels of government. It is evident, due to the present use of various, non-compatible portions of the spectrum, that this cannot be accomplished in the short term.

The five National Channels which the Commission has designated for this purpose will serve well as a foundation for providing this capability on a nationwide basis. In the Northern California Region, there are two other major considerations.

First, any plan developed for this region must be totally compatible with that of the Southern California Region. Mutual aid plans for both major and minor situations must not pose any artificial boundaries.

Second, there are a number of inter-agency mutual aid plans in existence depending upon other radio channels. As new systems are installed, or as migration from present systems to the 800 MHz channels occurs, it is imperative that provisions are made to replace the capability which would otherwise be lost. These two considerations affect, in particular, Police and Fire services, which have developed specific mutual aid channels to serve statewide.

This Plan has been developed to address all of these considerations.

4.1 INTEROPERABILITY ELIGIBILITY AND LICENSING

All applicants under the Police, Fire, Local Government, Highway Maintenance, Forestry/Conservation, and Special Emergency Radio Services (the Public Safety Category defined in Section 90.617(a) of the FCC Rules and Regulations), are eligible to operate stations on the five National Common Channels.

The additional Interoperability channels that are included in this Plan are intended to serve specific needs of the various services, and are governed by a master plan developed by user committees working with the State of California.

In order to assure proper usage, these additional channels and base stations operating on the National Common Channels will be licensed to the State of California. A similar plan for dedicated channels in the VHF and UHF portion of the spectrum is on file with the

Commission, and has provided excellent results for a number of years. This plan is known as "State Mutual Aid Radio System (SMARS)".

It is strongly suggested that prior to submitting a request for any of the Interoperability channels listed in the Plan that the applicant obtain a copy of the current Plan by going to www.rgn6rpc.org and down loading a copy. Carefully study the Plan with particular reference to Section 4.0 through Section 4.11 is suggested.

Detailed procedures for the licensing of the interoperability channels are listed in Attachment C.

4.2 STATE MUTUAL AID RADIO SYSTEM (SMARS)

This State plan has been developed by a committee composed of representatives from all Public Safety and the Special Emergency Radio Services. It is intended that the channels designated for mutual aid use in this Regional 800 MHz Plan shall be licensed and operated to the extent possible and practical under the provisions of the existing SMARS plan.

All channels are subject to a priority usage concept. These priorities are as follows:

Priority 1: Disaster and extreme emergency operations, for mutual aid and interagency communications.

Priority 2: Emergency or urgent operations involving imminent danger to the safety of life or property.

Priority 3: Special event control activities, generally of a pre-planned nature, and generally involving joint participation of two or more agencies.

Priority 3a: Drills, tests and exercises of a civil defense or disaster nature.

Priority 4: Single agency secondary communications.

4.3 INTEROPERABILITY CHANNELS AND USAGE COVERED BY THIS PLAN

The following tables reflect mutual aid channels covered by the Plan:

# Ref	Channel Name	FB/FB2 Channel	Function
1	8CALL90	851.0125	Nat'l Common Channel High Level Calling
2	8CALL90D	851.0125	Nat'l Common Channel High Level Calling
3	8TAC91	851.5125	Nat'l Common Tactical
4	8TAC91D	851.5125	Nat'l Common Tactical
5	8TAC92	852.0125	Nat'l Common Tactical
6	8TAC92D	852.0125	Nat'l Common Tactical
7	8TAC93	852.5125	Nat'l Common Tactical
8	8TAC93D	852.5125	Nat'l Common Tactical
9	8TAC94	853.0125	Nat'l Common Tactical
10	8TAC94D	853.0125	Nat'l Common Tactical
11	CALAW8	853.5125	State Common Channel High Level Law

12	CALAW8D	853.5125	State Common Channel High Level Law
13	CAFIRE1	853.9875	State Common Channel High Level Fire/EMS
14	CAFIRE1D	853.9875	State Common Channel High Level Fire/EMS
15	CALAW9	851.2000	Region 6 Common Channel Low Level Law
16	CALAW9D	851.2000	Region 6 Common Channel Low Level Law
17	CAFIRE2	851.9125	Region 6 Common Channel Low Level Fire/EMS
18	CAFIRE2D	851.9125	Region 6 Common Channel Low Level Fire/EMS

All channels are to be used primarily for coordination of activities between agencies in mutual aid, or emergency activities requiring interoperability.

The State Mutual Aid Radio System (SMARS) and the California Mutual Aid Law Enforcement Radio System (CLEMARS) rules shall apply to the extent feasible to all usage. These documents are on file with the Commission.

4.3.1 PRIORITY OF USAGE

All channels 1 through 14 shall be limited to Priority 1 through Priority 3a use as defined in Section 4.2. **Priority 4 use will be permitted only on Channels 15 through 18.**

In all instances, all lower priority use must cease when a higher priority use is required in any area where interference could result.

Priority 3 and 3a usage is considered a requirement on all channels. The Committee feels that exercising mutual aid plans is a necessity to ensure appropriate action when disasters occur. There is no better way to test and exercise this capability and associated equipment than to utilize the mutual aid channels in special events, tests, exercises and drills, where the need to communicate in an appropriate fashion exceeds that of ordinary day-to-day requirements. It must be clearly understood that this type of usage will be limited to preplanned and well-coordinated events, and that the channels shall not be used for Priority 4 or single agency secondary purposes.

4.3.2 IMPLEMENTATION PLAN

The eligible users in each county (or multiple counties desiring to create an Operational Area) shall develop an Implementation Plan for their area. This Plan shall show the location, channels, and operating parameters of proposed stations within the Area. All agencies proposing to license base stations within the Operational Area shall be signatory to the Plan. At least one agency shall be designated as the “Monitoring Agency” to monitor the National Calling Channel. All Plans must be submitted to the CalEMA for their review and approval as outlined elsewhere in this Section.

The Plan shall consist of two tiers. The first tier shall consist of one or more stations operating on the National Calling Channel. The radio coverage, to the extent possible, shall be designed to provide communications to a major portion of the county or CalEMA Operational Area. Stations may be either mobile relay stations (FB2) or base stations

(FB), comparable to other stations in the Monitoring Agency's 800 MHz system. The Monitoring Agency shall provide a 24-hour per day, 7 day per week guard on the channel. The Plan may provide for other agencies to monitor and use the channel through appropriate control stations.

The second tier of the Plan shall consist of stations operating on one or more of the four National Common Tactical Channel (reference channels 3 through 10 above), the two Statewide Mutual Aid Channels (reference channels 11 through 14 above), and the Northern California Mutual Aid Channels (reference channels 15 through 18 above). The coverage area of such stations shall be designed to maximize reuse of these channels, both within the Operational Area and by adjoining Operational Areas. In the event there is no County or otherwise designated Monitoring Agency, base stations shall be authorized only on Channels 15 through 18 at low level sites, not to exceed 150 feet above the operating center of the applicant agency, unless specifically authorized by the Committee.

Temporary base stations (FB2T and/or FBT) may be authorized for use by any licensee in the Plan for temporary use. Operation in excess of 60 days at the same location must be approved by CalEMA. These stations may be used to provide coverage at either pre-planned or emergency operations as required. Pre-planned use shall be with the approval of the designated Monitoring Agency. Such stations shall not exceed 35 watts ERP.

All requests for licensing on any of the listed Mutual Aid Channels shall be in the form of, or in accordance with, an existing County/Area Implementation Plan. Requests for approval of Implementation Plans shall be submitted to the:

California Emergency Management Agency
Telecommunications Section
3650 Schriever Avenue, Mather, CA 95655; or,
P.O. Box 419047 Rancho Cordova, California 95741-9047

CalEMA shall have 60 days to review and reply to the request. If no action is taken within this time frame, the applicant may then submit the request directly to the Committee for their consideration.

Requests for licensing, when approved as to policy and technical details, shall be submitted by the State to the Chair of the Region 6 800 MHz Regional Planning Committee in accordance with the policy outlined in this Plan (see Attachment C). Detailed contact information may be found on the website www.reg6rpc.org.

4.3.3 INTEROPERABILITY CHANNEL USE REQUEST PROCEDURE

The procedure for requesting the activation of an interoperability channel is listed in Attachment D.

4.4 CODED SQUELCH

All equipment capable of operating on the ten National Common Channels designated for mutual aid in this plan shall be equipped with the National Common Tone Squelch of 156.7 Hz. Mobile relays on these channels, if authorized, may use additional tone or digital squelch codes for the purpose of selecting individual mobile relay stations, provided the National

Common Tone Squelch Code is used on the output. If such an arrangement is utilized, provision must also be made for certain centralized, high level sites to be activated by the 156.7 tone to ensure emergency access by transient units.

4.5 VOICE PRIVACY, PAGING, ALERTING, SIGNALING

All such use (other than ATIS or as included in Part 90.235, FCC Rules and Regulations) is prohibited on any of the interoperability channels designated for mutual aid in this Plan. Under special circumstances, encryption or voice privacy may be allowed for special operations, at the discretion of the Committee.

4.6 OPERATION IN AIRCRAFT

Operation of radio equipment on these interoperability channels is permitted, provided power conforms to all applicable FCC Rules and Regulations.

4.7 CROSS BAND REPEATING OR LINKING

To facilitate interfacing systems on other portions of the spectrum, cross band repeating or linking is permitted, except for Priority 4 usage, in conformance with applicable FCC Rules and Regulations. Typically this should be through bridges at a designated control console.

4.8 RADIO CODES

All communications on these Interoperability channels will be conducted in CLEAR TEXT.

4.9 BASE AND MOBILE IDENTIFIERS

Stations operating on these interoperability channels shall include their agency name, or similar unique identification.

4.10 FEDERAL INTEROPERABILITY

Interoperability between Federal, State, and Local Governments will occur primarily on the ten National Channels. It may occur on other SMARS channels by agreement of the Committee.

Where there is a demonstrated need, Federal Agencies may be permitted to operate on the other mutual aid channels or on the channels of a single entity through the use of an agreement which will satisfy the requirements of both the involved local agency (or agencies) and the Commission. This is presently a common practice in the Northern California Region on other public safety channels.

4.11 MONITORING AGENCIES

To ensure maximum compliance with the prescribed rules for the use of the interoperability channels, and to enhance the “calling channel” concept, the Committee will work with the State and Local Governmental agencies to develop and implement a comprehensive system of monitoring stations. Several agencies have indicated their intent to serve in this capacity.

5.0 CRITERIA FOR ASSIGNMENT OF CHANNELS

5.1 OVERVIEW

At the present time, all channels in the 800 MHz - 70 channel Public Safety Pool are fully utilized in the San Francisco Bay area within a 70-mile radius of the geographical center of San Francisco. The same is true for the Sacramento area within approximately 40 miles of Sacramento.

There is almost no present usage of 800 MHz in the remote northern California area, or in those counties and cities situated in the mountainous Sierra Nevada area.

There is an acute shortage of all UHF and High Band VHF frequencies in virtually all areas within the Northern California Region. Implementation of this Plan will not provide any major relief in this regard. Limited relief continues to be realized through the reassignment of vacated channels.

Agencies have been encouraged to submit their anticipated needs both in the 800 MHz portion of the spectrum and in all other bands. The requests for channels, other than 800 MHz, have been placed “in queue”, and to the degree applicable, will be granted on that priority basis.

A point and value criteria has been developed for the assignment of the channels in this Plan, and this will also be used to the degree possible to determine reassignment of any vacated channels. Due to different loading criteria, propagation factors, and compatibility with existing systems etc., other criteria must be considered in addition to that which will be used for the assignment of the 800 MHz channels in the Plan (see Section 5.5).

5.2 HIGH LEVEL SITES

Radio coverage within the majority of Northern California’s Region 6 is affected by widely varying topography. There are several mountain ranges in this portion of the state including the Coastal Range and the Sierra Nevada Range with elevations rising to over 14,000 feet. In order to obtain adequate radio coverage, it is necessary to utilize high-level sites, particularly in the rural mountainous areas. Unfortunately, this often results in the propagation of signals outside of the required area of coverage. This need and usage is responsible, to a high degree, for the present shortage of channels in other portions of the spectrum. Every attempt is made to design systems in the 800 MHz bands to mitigate excessive wide area coverage. For this particular reason, technical criteria has been developed that will govern the signal strengths (see Section 5.12).

The heaviest use of new 800 MHz channels is within the San Francisco Bay area and in the Sacramento Valley area. Special emphasis continues to be placed on limiting coverage to the required service areas. As necessary, systems must be designed to utilize multiple low-level sites rather than single high-level sites, particularly in this portion of the Region.

High-level sites in any portion of the Region will only be approved where the need is fully justified, and antennas and power levels are configured to satisfy the technical criteria stated in this Plan (see Section 5.12).

5.3 COMMUNITY RADIO SYSTEMS

As visualized in the Commission's Report and Order from a spectrum utilization viewpoint, the creation of trunked systems serving a number of small political entities is ideal. Unfortunately this is often difficult to accomplish. It requires both an agency willing to take the lead in establishing a mechanism and others agreeable to operating in a consolidated system to make this possible. Financing, engineering, and political factors all are equally important.

The Committee strongly encourages this concept, and has developed this Plan accordingly. Every reasonable effort will continue to be made by the Committee to promote the development of shared systems in this portion of the 800 MHz spectrum.

5.4 LOW POWER SECONDARY OPERATION

To facilitate portable operation by any licensee, and to provide channels for such operation without impacting the use of primary channels, certain low power secondary use will be permitted. Any public safety entity otherwise licensed to use one or more channels under this Plan may receive authorization to license any additional channel for secondary use, subject to the following criteria:

- All operation of units on such authorized channels will be considered secondary to other licensees on both co-channel and adjacent channels.
- No channels on or adjacent to, those designated in the Plan for wide area operation and/or mutual aid use will be authorized.
- Channels will be authorized for use in specific areas only, such areas to be within the licensees authorized operational area.
- Maximum transmit power will be limited to 6 watts ERP.
- Use aboard aircraft is prohibited.
- Applications for channels may be submitted to the Committee for consideration at any time and must be accompanied by a showing of need. The Committee may select and authorize licensing of these secondary use channels after consideration of potential interference to co-channel and adjacent channel allocations and licensees.
- In the event the channels authorized for low power secondary operation are needed by others during any window opening for reassignment, no protection will be afforded to the licensed secondary user, and they may be required to change frequencies or surrender licenses to prevent interference to primary use channels.

5.5 PRIORITY OF ASSIGNMENT

In the event prioritization becomes necessary as implementations progress, the Committee will utilize a point system to determine priorities. This will be based on the following criteria:

- Immediate need to protect life and property.
- Extent of applicants existing channel loading.
- Effective system design, including channel loading.
- Consolidation or use of system by others.
- Implementation schedule, including funding.
- Number and usability of vacated channels.
- Lack of availability of alternate spectrum.

- Methodology of ensuring emergency intercommunication with other associated agencies.

Each of these criteria will be rated from 0 to 10, except "Immediate need to protect life and property", which will be rated from 0 to 20. The total aggregate point value of from 0 to 90 will determine the priority of assignment in the event of conflicting requests. As stated, these listed factors are basic to any request, and will be considered as the utilization of the channels in this Plan progress. However, actual points will not be assigned to each and every request, but only as the need to prioritize arises.

The Committee will carefully monitor the assignment, implementation, and use of these channels, and will annually review the status of spectrum availability.

5.6 TIME TABLES FOR IMPLEMENTATION

Applicants requesting frequencies for either trunked or conventional operations may be authorized a period of up to five (5) years for constructing and placing a system in operation if they satisfy one or more of the conditions identified in Section 90.629 "Extended Implementation Period" of the FCC Rules and Regulations.

Implementation schedules must be submitted with applications. Implementation schedules exceeding those specified in 90.629 will only be approved in very special cases, such as a projected system that is designed to serve multiple agencies that may necessitate extending the time required for total occupation. Any such requests for extension must be clearly and strongly supported by signed commitments from all participating agencies.

In all instances the Plan envisions, and the Committee will insist on, a good faith showing where there is a conflict between the present assignments indicated in the Plan and a real need by another agency for any of those channels. Channels for which licensing has not been initiated, or for which concrete plans have not been filed with the Committee after one year following FCC approval of the Plan will be considered available for reassignment at the discretion of the Committee.

5.7 FREQUENCY RECALL

The Regional Planning Committee shall monitor the implementation process and if they become aware that required construction and loading milestones are not being met, the applicant will be notified of the possible consequences of not utilizing the frequencies. Further, if other eligible licenses in need of channels bring non-construction or loading discrepancies to the attention of the Committee, follow-up inquiries will be made to determine the status of construction requirements on the license. The Regional Planning Committee has the obligation of notifying the FCC of failures to construct or load systems so that consideration can be given to returning some or all of the channels to the pool for assignment to other eligible licensees in need of channels.

5.8 TRUNKING

The Committee recognizes the value of trunking in large systems to insure effective spectrum utilization. While the established loading criteria may be practical in the private radio services, it presents some obstacles in the development of public safety systems. Smaller agencies

have too few units to qualify for the necessary number of channels, and often opt for conventional systems.

FCC Rules require that any system in this Plan utilizing in excess of four channels must operate in the trunked mode. While the Committee will consider any request for deviation from the established criteria, such requests for support of waivers from the FCC requirements are anticipated to be very rare. The Committee will not support or recommend any such waivers unless the applicant can substantially demonstrate both a significant need and equal effectiveness relative to spectrum efficiency of the proposed conventional system to that of a trunked system.

5.9 FREQUENCY COORDINATION

The Northern California Chapter of the Associated Public Safety Communications Officials, Inc. (NAPCO) has a Frequency Advisory Committee that serves as the Region 6 advisory body to the National APCO Frequency Coordination System. The monthly NAPCO meetings provide a convenient venue for NPSPAC Committee forums, and the majority of those public safety representatives attending the NAPCO meetings also attend the NPSPAC Committee meetings (NPSPAC meetings are called to order subsequent to the adjournment of the NAPCO Frequency Advisory Committee meetings). APCO is one of the four FCC designated frequency coordinators for 700 MHz and 800 MHz Public Safety spectrum.

Note: The FCC-sanctioned Public Safety Frequency Coordinators and their web sites are:

- Association of Public Safety Communications Officials, Inc. (APCO) at http://www.apcointl.org/
- International Municipal Signal Association (IMSA) at http://www.imsasafety.org/
- Forestry Conservation Communications Association (FCCA) at http://www.fcca-usa.org/
- American Association of State Highway and Transportation Officials (AASHTO) at http://www.aashto.org/

The Committee is sensitive to the fact that certain recommendations relative to the use of vacated frequencies are considered necessary; however, the Committee and the FCC-sanctioned frequency coordinators are obliged to ensure that all requests for channels shall follow the usual application and coordination process, except those requiring prior review at the Regional level. The Committee will carefully review all applications for conformance with the provisions of the Plan. If field tests are deemed necessary to ensure compliance with the criteria prescribed in the Plan, it will be the responsibility of the applicant to demonstrate the testing was accomplished, and appropriate concurrence received.

5.10 REASSIGNMENT OF FREQUENCIES

In lieu of a plan for the efficient reuse of frequencies in the VHF, UHF, and 700 MHz bands used by the applicant, applicants for frequencies covered in this Plan are strongly encouraged to turn back frequencies in other bands presently used by the applicant. These turned back frequencies should be returned to the FCC so they can be reassigned to agencies awaiting channels in the lower frequency bands. Many public safety agencies do not have enough

frequencies to adequately provide for their day-to-day dispatching. These needs must be provided for before less important needs can be provided for in the lower frequency bands.

It is generally inconsistent with the goals and objectives of this Region to permit the direct re-assignment of radio frequencies between agencies. All frequencies are to be returned to the FCC to be assigned where it will be of the most benefit to the public's safety. Applicants proposing to retain VHF, UHF, or 700 MHz channels shall include specific information on how retained channels are to be reused and shall make a statement to the effect that should they not be used for the intended purpose within 24 months that the channels will be surrendered.

Similarly, an agency shall not be allowed to "farm down" frequencies to other services within their political structure simply to take advantage of surplus equipment.

Any unresolved dispute over the release of channels will also be brought to the Committee. It must be understood that failure to agree to release channels when the need to retain cannot be justified can result in denial of requests for new 800 MHz channels.

5.11 TECHNICAL STANDARDS - GENERAL

The Committee has established certain technical criteria to assist in the recommendation of frequencies, which ensures maximum reuse with a minimum amount of interference.

These criteria are calculated to result in providing assignments that will not cause destructive interference to either existing or new licensees. Nuisance type interference can be reduced or eliminated by the use of coded squelch, and in certain instances by changes in acceptance levels for receivers.

The following criteria have been adopted for use in the 800 MHz portion of the spectrum, and shall apply to all frequencies listed in this Plan.

- Transmitter Standards - Except as noted elsewhere in this Plan, all transmitters utilized on the 800 MHz spectrum shall be type accepted for operation on the 800 MHz bands, and must meet the technical standards defined in Part 90 of the Commission’s Rules and Regulations.

- Receiver Standards - The channel plan developed by the Committee and presented in this Plan is predicated upon the use of receivers meeting the criteria of at least 20 dB of protection to the 12.5 kHz removed signal in accordance with the revised method described in the NPSPAC Final Report. Applicants are cautioned that the use of wide band receivers in this new portion of the spectrum may be subject to 12.5 kHz adjacent channel interference and will not be afforded protection by recommended assignments.

- Power Limitations - Output power will be limited to that necessary to provide adequate coverage within the political jurisdiction of the licensee. As stated, aircraft equipment shall be limited to 1 watt ERP. All other transmitters shall be limited, to the degree possible, to the minimum amount necessary to provide adequate coverage within the using agencies geopolitical boundaries.

- Antenna Design - The Committee will require both directional and down tilt antennas designed to reduce interference to other areas as deemed advisable, or as required to meet the signal level criteria in this Plan.

- Low-Level Sites - Strong emphasis will be placed on the preferred use of low-level sites.

- Assignment and Usage of 12.5 kHz Channels - With the exception of those channels designated as "Interoperability Channels", which require 12.5 kHz guard channels, all other channels are considered on a co-equal basis.

Geographical separation, both by actual mileage and terrain, has been applied to the assignments as listed. This, together with the specified technical standards, will result in interference-free systems.

The experience gained through 50 years in recommending frequency assignment within Northern California has been exercised in determining the assignments in this Plan, and has been developed to maximize the use of channels on a nondestructive interference basis (see Section 10.0 for further information).

5.12 TECHNICAL DESIGN, SPECIFIC

The intent of these standards is to ensure the best possible spectrum utilization while at the same time providing systems that will meet the needs of the user. As stated, efforts will be made to confine signals to the geopolitical area of each agency. It is recognized that this is not always practical, and that such boundaries do not conveniently center around a single transmitter site. In this regard, it is recommended that systems should be designed to provide a minimum of 40 dBμ (decibels above 1 microvolt per meter - approximately 4.6 microvolts of signal across 50 Ohms at 850 MHz) at any point within the targeted geopolitical coverage area. This must be accomplished to the degree possible while reducing interfering signals to other areas.

Using this 40 dBμ signal as a standard criterion, it is possible to define "acceptable interfering signal levels".

- Base-to-Mobile Units

  Signals from co-channel base stations shall not exceed 5 dBμ at any point within the geopolitical boundaries of affected users. Signals from next-adjacent-offset-channel base stations shall not exceed 25 dBμ at any point within the geopolitical boundaries of affected users.

  Note that the 25 dBμ level is observed as the interference contour limit for signals from any neighboring agency's next-adjacent-offset-channel base station(s). That is, this contour may not exceed 25 dBμ at any point within the geopolitical boundaries of the applicant's users (and vice versa). For wide area regional systems such as those spanning multiple counties, the effective definition of a geopolitical boundary may extend beyond each participating agencies jurisdiction. Accordingly, for next-adjacent-offset-channels, this 25 dBμ contour will be allowed to touch, but not overlap the 40 dBμ service contour of the system being evaluated.

If the applicant and all adjacent agencies are meeting the narrowband Project 25 – 12.5 kHz emission mask or better, the next-adjacent-offset-channel interference contour may be reduced to a 60 dBμ interference contour (thus permitting closer site spacing and increased frequency reuse). Accordingly, for next-adjacent-offset-channels, this 60 dBμ interference contour will be allowed to touch, but not overlap the 40 dBμ service contour of the system being evaluated.

An applicant agency's 40-dBμ service contour may be allowed to extend beyond its defined geopolitical boundary by 4.83 to 8.05 km (3 to 5 miles), depending on the type of environment: urban, suburban, or rural (see Table 5.12), and conditioned upon the interference contour limitations outlined above relative to incumbent or proposed co-channel and next-adjacent-offset-channel users.

Type of Area	Extension (km/miles)
Urban (20 dB Buildings)	8.05/5
Suburban (15 dB Buildings)	6.44/4
Rural (10 dB Buildings)	4.83/3

Table 5.12 - Extension Distance of 40 dBμ Field Strength

These values are intended to indirectly address the specific portable coverage needs for urban, suburban, and rural areas by allowing higher powers within the geopolitical boundaries.

- Mobile-to-Base Units

  Mobile units of other agencies shall limit their signals to the degree necessary to provide a minimum of 35 dB of protection to affected base station receivers operating on the same channel. Mobile units of other agencies shall limit their signals to provide a minimum of 15 dB of protection to affected base station receivers operating on next-adjacent-offset-channels.

  Note that if the applicant and all adjacent agencies are meeting the narrowband P25 – 12.5 kHz emission mask or better (as with the Base-to-Mobile case above), the digital P25 receiver requirement for 60 dB Adjacent Channel Rejection (± 12.5 kHz offset) allows the closer spacing of adjacent channels by 35 dB.

- Satellite Receivers

  The use of satellite receivers is encouraged to enhance the capability of low power units, including hand held units. The location and antenna configurations of satellite receivers must be designed to recognize the potential for interference from other users, and all above criteria applies only to receivers at base or mobile relay stations. In general, use of properly engineered satellite receivers should improve the desired-signal-to-undesired-signal ratio in any system.

- Coded Squelch

Continuous tone coded, or continuous digital coded squelch shall be required for all conventional systems before interference complaints can be considered. The Committee will assist, to the degree possible, to coordinate the choice of coded squelch. The final responsibility remains with the applicant to verify the squelch codes used by any licensees that could conceivably result in interference. Responsibility for coordinating codes or changing codes to avoid interference shall be the responsibility of the latest licensee.

6.0 PROCEDURES PRECEDING AND FOLLOWING COMMISSION AUTHORIZATION

In order to ensure compliance with the Plan and to provide guidance to potential NPSPAC 800 MHz frequency users, the following guidelines and criteria will be utilized.

6.1 GUIDELINES FOR APPLICATION AND IMPLEMENTATION

1. Carefully read the Region 6 (Northern California) 800 MHz Regional Plan (hereinafter "Plan") A copy of the Plan may be found on the Region 6 website http://www.rgn6rpc.org. All requests and applications for channels and systems implementations must be in strict accordance with all provisions of the Plan.

2. Systems must be developed to meet the criteria specified in the Plan. Propagation studies and graphs will be required. These must be in a form approved by the Frequency Advisory and Plan Revision Subcommittee. Field strength contours will be overlaid on a suitable map with county and/or city boundaries shown in a three-color print.

   For systems designed using NPSPAC analog 25 kHz channels with 12.5 kHz spacing, the field strength contours shown will be:

   40 dBμ for in system coverage
   25 dBμ for next-adjacent channel interference
   5 dBμ for co-channel interference.

   The 25 dBμ level is observed as the interference contour limit for signals from any neighboring agency's next-adjacent-offset-channel's base station(s). That is, this contour may not exceed 25 dBμ at any point within the geopolitical boundaries of applicant's users (and vice versa). Accordingly, for next-adjacent-offset-channels, this 25 dBμ contour will be allowed to touch, but not overlap the 40 dBμ service contour of the system being evaluated.

   For systems designed to meet the Project 25 standards with 12.5 kHz emission mask and all adjacent agencies are also meeting the Project 25 – 12.5 kHz emission mask or better, the field strength contours shown will be:

   40 dBμ for in system coverage
   60 dBμ for next-adjacent channel interference
   5 dBμ for co-channel interference.

3. Actual signal strengths must be verified by field tests after the system is completed, and changes may be required to meet the contour plots as shown in the application.

4. A list of frequencies that will be vacated and released as a result of the allocation and use of 800 MHz NPSPAC channels, and the proposed dates of release must be provided (this is an absolute requirement).

5. Justification for the number of channels requested must be included. Although the Commission standard of 70 units for each conventional channel and 100 for each trunked channel is a suggested base, other pertinent factors such as population served and the number of services using the system (when possible quantified by a traffic load analysis) shall serve as further justification.

6. Requests for "slow growth" systems must be explained in a detailed cover letter with timetables of proposed implementation(s). Progress will be monitored by the Commission and by the Region 6 (Northern California) 800 MHz Review and Revision Committee (hereinafter “Committee”).

7. Following at least one year of in-service operation, the Committee will request documented evidence of actual channel usage for any particular system or portions thereof. Additional channels will not be granted without justification. Licensees may be requested to vacate unused or lightly used channels by a decision of the Committee.

8. In addition to meeting the criteria listed in the Plan, all requests must fully conform to all applicable Commission Rules and Regulations.

6.2 ALL REQUESTS AND APPLICATIONS MUST BE SENT TO:

All requests for NPSPAC frequencies will be sent to the Committee with the exception of those listed in Section 4 relating to the I/O channel, as specified in that Section where the State of California will be the licensee.. Requests must be accompanied by:

a) The latest version of Form FCC 601 or future equivalent
b) The appropriate public safety frequency coordinator form(s) (e.g., for APCO, it is the APCO FDR 3 Form).
c) Computer-generated propagation maps showing field strength contours
d) Coordination fees (check, money order, purchase order, or credit card)
e) Frequencies to be released and schedule for release
f) Comprehensive justification for the number of channels requested
g) Implementation schedule
h) Proof of funding

The applicant is obliged to make beneficial use of any allocated frequencies within one year of licensing. If the applicant suspects it will take longer than 1 year to deploy the system utilizing any licensed spectrum obtained through this process, §90.629 titled “Extended implementation period” allows that applicants requesting frequencies for either trunked or conventional operations may be authorized a period of up to five (5) years for constructing and placing a system in operation given they satisfy the criteria for “slow growth” outlined in §90.629. The burden of proof is on applicants seeking an extension; as such, they are obliged to supply comprehensive evidence of their justification.

Requests, without fees, may be made in a preliminary draft form to verify and justify the number of channels requested and other details.

To facilitate action, one original and one completed copy of the latest version of Form FCC 601 (or future equivalent) and the field strength contours should be included.

When received, requests will be examined by the Chair and two other selected members of the Committee. When deemed appropriate, the request will be brought to the quorum of the Committee.

When the formal request is approved, the Committee Chair will forward the original completed Form FCC 601, the Committee's endorsement letter, and the payment to the applicant's choice of frequency coordinator for frequency coordinator action and submission to the Federal Communications Commission.

There are four Commission designated frequency coordinators for 700 MHz and 800 MHz Public Safety spectrum. The Coordinators and their web sites are the:

- Association of Public Safety Communications Officials, Inc. (APCO) at http://www.apcointl.org/
- International Municipal Signal Association (IMSA) at http://www.imsasafety.org/
- Forestry Conservation Communications Association (FCCA) at http://www.fcca-usa.org/
- American Association of State Highway and Transportation Officials (AASHTO) at http://www.aashto.org/

Any questions regarding this Plan may be directed to the Chair of the Region 6 800 MHz Regional Planning Committee. Current contact information may be found at the website www.reg6rpc.org.

ADDITIONAL GENERAL INFORMATION

All requests should be submitted in draft form to the Committee Chair to ensure compliance with the Plan. Proof of funding (to consist of purchase orders, letters of authorization, or resolutions of governing boards) shall accompany all requests for new channels. Propagation studies must be included. These submitted coverage plots are considered an agreement not to exceed the contours as shown. Adjustments to system parameters must be made if necessary to conform.

Timetables for implementation and the release of existing channels if applicable must also be included.

All applicable FCC rules and regulations for implementations must be followed; if "slow growth" is requested, the applicant is directed to §90.629 titled "Extended implementation period".

The following criteria shall be used to justify the number of channels required:

- Compliance with FCC Rules for channel loading
- Population served and projected growth trends
- Number of agencies, and/or departments served

- Commitments to release specific channels and time frames for release
- Other as specified in this Plan (see Section 5.5)

Prioritization of Request:

The increasing number of systems constructed and operating on these National Plan channels has created a huge demand from users of other portions of the spectrum. This is particularly noticeable in the two large metropolitan areas of the San Francisco Bay and Sacramento. There are virtually no channels available in these areas using legacy equipment. Transition to P25 – 12.5 kHz equipment has some promise, but this is tempered by the requirement to protect legacy systems. The Committee is on record as strongly urging those desiring channels to consider this approach, but the difficulty of obtaining funding is well known and progress will be slow.

Trunked systems and the consolidation of agencies and operations on common communications infrastructures have proven effective and are also encouraged. However, there is still a significant shortage of spectrum and a continuation of many unfilled requests. To the degree allowed by the Commission, the Committee must attempt to give the highest priority to those public safety agencies most directly involved in the protection of life and property (see Section 5.5). This relates not only to these channels, but also to all Part 90 channels and is strongly endorsed by a majority of the users in the spirit of cooperation.

7.0 PLAN DEVELOPMENT, IMPLEMENTATION AND REVISION

All Plan development has been in strict accord with FCC Report and Order - General Docket No. 87-112 and all pertinent subsequent Commission actions.

7.1 NOTIFICATION

All interested parties and public safety agencies are invited to participate in revisions of the Plan. Notice is given through the Northern California APCO mailing list, through selected public safety publications, and via the Region 6 webpage.

7.2 APPROVAL OF REGIONAL PLAN

Prior to submitting Plan revisions to the Commission for approval, draft copies will be made available via the Region 6 website for all interested parties review and comment. This includes all adjacent Regions where applicable.

Following receipt of all comments, the Plan is modified as determined by the opinion of the majority. The current Plan is the result of this iterative process. It also reflects additions and changes requested by Commission staff.

8.0 PLAN REVISIONS

This Plan should not be considered as a final document to serve without revision. It is intended that the Committee shall be an on-going organization to perform this function.

The Plan will be reviewed, at a minimum, on an annual basis; however, if it appears necessary, the Committee will meet at any time to consider changes or revisions.

Attachment E (listing all licensed users in the Region and those that have followed proper procedures to change, rearrange or add channels due to the repacking process) shall be considered valid at the time the Plan is approved by the Commission. Licensing and construction on the new or rearranged channels must be in accordance with the procedures as specified in the Plan, consistent with applicable Commission Rules and Regulations.

Following this process, all channels in the Plan shall be considered as a pool available to any applicant satisfying the requirements as written in the Plan. Requests must be made to the Chair of the Committee and will be noticed via the webpage. Applications found to be in order will be discussed at the next regular meeting of the Committee provided it is posted on the webpage and in the monthly meeting notice at least 30 days in advance.

Channels must be identified and field strength plots provided for the meeting as specified in the Plan. Applicants should be prepared to participate in actual field tests if deemed necessary to protect existing licensees.

If requested channels can be found that will satisfy both the proof of need and the other considerations as specified in the Plan, they will be approved or denied by a two-thirds majority vote of the members of the Committee.

Such actions may be approved and submitted to the Commission for licensing without being considered a modification of the Plan. Final actions will be noticed via the Internet and entered in Attachment E at the earliest opportunity.

9.0 COMPLIANCE WITH NATIONAL PLAN

The National Plan has been carefully followed in the preparation of the Plan. It is believed that this amended Plan is in full conformity with Commission Rules and Regulations as presented. In the event there is any conflict, the Commission rules and regulations shall take precedence.

10.0 SPECIFIC CHANNEL ASSIGNMENTS

The projected assignments have been based on stated and known requirements of agencies, and on anticipated needs caused by population growth and other factors. However as specified in Section 5.6, assigned channels are subject to reassignment if no interest in utilization is shown by the agency to which they are assigned in conformance with criteria shown in the Plan and 90.629.

Channels have been assigned in anticipation of meeting the signal level criteria stated in the Plan. The assignments are based both on mileage separation and on known propagation tendencies gained through 50 years of experience in coordinating frequencies in the Northern California Region.

It has been common practice to utilize field-testing in this Region, and many recommendations are made each year, in all frequency bands, based on the results of such tests. Many field tests have been conducted in the 800 MHz realm since the Plan's inception, and assignments have been recommended in the NPSPAC channels on this basis, which are closer than the 70 mile co-channel separation prescribed by FCC Rules. Numerous tests have also been made in all areas on 450/460 MHz channels, and results are documented. These tests clearly

demonstrate the separation required over water, and conversely, the protection offered by intervening terrain.

Additional input has been has been solicited from the individuals listed in Attachment B, which comprises competent technical representatives from a wide range of Public Safety Services. These assignments reflect the experience and technical expertise of these individuals and agencies in engineering and developing systems in this particular region. Knowledge gained through experience.

11.0 FREQUENCY ADVISORY AND PLAN REVISION SUBCOMMITTEE

11.1 PURPOSE

This Subcommittee shall typically meet monthly, or at the call of the Chair. It shall meet as required to make necessary changes in the Plan, or to arbitrate any disputes from applicants arising from the administration of the provisions of the Plan. Any applicant or licensee that is not in accord with a jurisdictional interpretation or decision may request a meeting of the Subcommittee to present their views. In the event satisfaction is not reached at that level, it must be clearly understood that the final authority rests with the Commission, and the applicant or licensee has the right to present the case to the Commission if it cannot be resolved at the Regional level.

Day-to-day administration of the provisions of the Plan is handled by the Subcommittee. This Subcommittee processes the requests from applicants in strict accordance with the provisions of the Plan.

The objectives of the Subcommittee are:

- To provide on-going review of requests for channels
- To analyze technical parameters to ensure compliance with the Plan
- To review requests for “give up” channels in accordance with the Plan
- To oversee revisions to the Plan as necessary
- To assist applicants in the selection of appropriate frequencies

11.2 COMPOSITION OF SUBCOMMITTEE

See Attachment B - REGION 6 NPSPAC (Northern CA) Frequency Advisory and Plan Revision Subcommittee Membership List.

11.3 TERMS OF SUBCOMMITTEE MEMBERS

Terms (other than those of the officers – see Article IV Officers and Agents of the Region 6 Bylaws) shall be indefinite, dependent upon willingness and ability to serve, and vacancies shall be filled as necessary by a majority vote of the Committee. Failure to attend three consecutive meetings or six meetings per year shall place membership in jeopardy, and subject to replacement.

11.4 MEETING PLACE AND FREQUENCY

Meetings will normally be held in conjunction with the monthly meeting of the Northern California Chapter of APCO. As needed, other meetings will be held at the call of the Chair.

11.5 OPEN MEETINGS

All meetings of the Subcommittee shall be open.

12.0 CONCLUSION

This revised Plan, when approved by the Commission and placed in operation, will result in the best possible utilization of the repacked portion of the spectrum as identified as of this date. If additional spectrum is made available, and as the rebanding process evolves, the channel listings shall be revised accordingly. Experience gained since the Plan has been in operation has proven the value of the former Plan with certain special sections, such as those relating to Low Power secondary use.

The identification and the process utilized for reassignment of the "give up" channels has also worked well. It has resulted in the best possible and most fair reuse of these channels.

As the technology advances making it possible to migrate to digital techniques and reduced channel widths, the Plan (as revised) will make it possible to further improve spectrum efficiency.

Implementation of the "pool" concept as outlined will greatly facilitate the transition from the legacy systems to new systems utilizing the latest technologies.

It should be noted that Region 6 has an outstanding track record for managing the portion of the spectrum granted by the Commission under the original National Plan. Through monthly NPSPAC meetings and the dynamic outreach made possible via the Internet, all interested parties are provided open forums and are afforded the capability of examining and knowing the potential of obtaining spectrum. These open forums also provide ample opportunities to share and refine management procedures where appropriate.

13.0 ATTACHMENT LISTING

A Bylaws
B Membership of the Frequency Advisory and Plan Revision Subcommittee
C. Licensing Procedure for the Interoperability Channels
D. Interoperability Channel Use Request Procedure
E. Table of Channels

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Attachment A - Bylaws

BYLAWS

of the

PUBLIC SAFETY REGION SIX 800 MHz REGIONAL PLANNING COMMITTEE

January 2013

ARTICLE I

NAME, GEOGRAPHIC AREA, and PURPOSE, and STRUCTURE

1.1 NAME: The name of this organization shall be the Public Safety Region Six 800 MHz Regional Planning Committee. The short name of the organization shall be the Region 6 800 MHz RPC.

1.2 GEOGRAPHIC AREA: Region 6 is one of 55 public safety communications planning regions established by the Federal Communications Commission (FCC) to develop spectrum utilizations plans for the United States and its possessions. Region 6 covers the 48 counties of California situated north of the southernmost borders of Monterey, Kings, Tulare, and Inyo counties.

1.3 PURPOSE: The purpose of the Region 6 800 MHz RPC is to fulfill the requirements established by the FCC in Title 47 of the Code of Federal Regulations for public safety communications users to obtain access to wireless spectrum ("public safety bands") subject to the FCC's public safety planning process. The Region 6 800 MHz RPC achieves this purpose by fostering cooperation between potential users, development and maintenance of regional spectrum utilization plans, and the implementation of these plans within the Public Safety Region 6 area.

1.4 STRUCTURE: To accomplish the planning purposes stated in Section 1.3, the Region 6 800 MHz RPC will establish standing subcommittees and working groups to address specific public safety/public service bands, as chartered by the FCC. The composition of any maintenance subcommittee or working group established pursuant to a FCC planning charter will be delineated in the subject band’s planning document.

ARTICLE II

MEMBERS

For purposes of this Article, the term “member,” unless otherwise specified, refers to both voting and non-voting members.

2.1 MEMBER CLASSES AND QUALIFICATIONS: The Region 6 800 MHz RPC shall have two classes of members, "voting members" and "non-voting members." New members may be added at a duly noticed annual or special meeting by a simple majority vote of current members present. Any special meetings must be advertised to the public 30 days in advance of said meeting.

2.1.1 VOTING MEMBERS: For each regional spectrum planning/frequency coordination committee established for each of the Plans submitted to the FCC for the 800 MHz public safety/ public service bands voting members shall consist of one representative per category (e.g., police - city, fire - county, OES, EMS, highway maintenance). A single agency shall be allowed no more than one vote for each distinct eligibility category (e.g., police, fire, EMS, highway maintenance) within the agency's organization or political jurisdiction. The State of California shall have no more than four voting members. In voting on any issue, the members must identify themselves, and the agency and eligibility category, which they represent.

2.1.2 NON-VOTING MEMBERS: Non-voting members are all others interested in furthering the goals of public safety/public service communications.

2.2 TENURE: In general, each member shall hold membership from the date of acceptance until resignation or removal.

2.3 POWERS AND RIGHTS: In addition to such powers and rights as are vested in them by law, or by these bylaws, the members shall have such other powers and rights as the membership may determine by majority vote.

2.4 SUSPENSION AND REMOVAL: A voting member may be suspended or removed with cause by a two-thirds vote of the voting members after reasonable notice and opportunity to be heard. Failure to attend three consecutive meetings or 50 percent of formal meetings held in a calendar year shall be a specific cause for removal from the membership.

2.5 RESIGNATION: A member may resign by delivering written resignation to the chair, vice-chair, or secretary of the Region 6 800 MHz RPC or to a meeting of the members. Those voting members who resign may be replaced by the appointing agency until the annual meeting by submitting a signed memo to the chair. Advance notice of an impending resignation is encouraged.

ARTICLE III
MEETINGS

3.1 ANNUAL MEETING: The annual meeting of the membership shall be held at a publicly accessible location within Region 6 during the first quarter of each year. If an annual meeting is not held as herein provided, a special meeting of the members may be held in addition to the annual meeting with the same force and effect as the annual meeting. In such cases, all references in these bylaws, except in this section (3.1), to the annual meeting of the members shall be deemed to refer to such special meeting. Any such special meeting shall be called and notice shall be given as provided in Section 3.4.

3.2 SPECIAL MEETINGS: Special meetings of the membership may be held at any time and at any place within Region 6, or in any of the contiguous regions if the purpose of the meeting is a joint meeting with that region. Special meeting of the members may be called by the chair or by the vice-chair, or in case of death, absence, or incapacity, by any other officer, or upon written application of three or more members. Any such special meeting shall be called and notice shall be given as provided in Section 3.4.

3.3 WORKING MEETINGS: Meetings of subcommittees or working groups of the Region 6 800 MHz RPC are considered working meetings and may be conducted in person or by electronic means. Working meetings are not subject to the notice provisions of Section 3.4. Minutes of working meetings shall be filed with the secretary and made available for review by any member of the Region 6 800 MHz RPC.

3.4 NOTICE OF MEETINGS: Notice of the time and place of annual and special meetings of the Region 6 RPC shall be provided to each member and to the public not less than 60 days in advance of the date of the meeting. Except as otherwise expressly provided, it shall be reasonable and sufficient notice to members to send notice by mail, addressed to such

members at their usual or last known business address; by e-mail/facsimile; in person; or by telephone. Notice of each annual and special meeting shall also be provided to the Wireless Technology Branch (or successor unit) of the FCC; placed on any electronic information distribution sources used by the Region 6 800 MHz RPC, and distributed to any or all professional organizations designated by the officers or membership of the Region 6 800 MHz RPC.

3.5 QUORUM: At any meeting of the members, a majority of the officers and 50 percent plus one of the voting members shall constitute a quorum. Any meeting may be adjourned to such date or dates not more than 90 days after the first session of the meeting by a majority of the votes cast upon the question, whether or not a quorum is present, and the meeting may be held as adjourned without further notice.

3.6 ACTION BY VOTE: Each voting member representing a particular category of public safety services (e.g., fire, law enforcement, medical) shall have one vote; non-voting members have no right to vote as per Section 2.1. When a quorum is present at any meeting, a majority of the votes properly cast by voting members present shall decide any question, including election to any office, unless otherwise provided by law or these bylaws.

3.7 ACTION BY WRITING: Any action required or permitted to be taken at any meeting of the members may be taken without a meeting if two thirds of the members entitled to vote on the matter consent to the action in writing and the written consents are filed with the records of the meetings of the members. Such consents shall be treated for all purposes as a vote at a meeting.

3.8 PROXIES: Voting members may vote either in person or by written proxy dated not more than one month before the meeting named therein. Such proxies shall be filed with the secretary or other person responsible for recording the proceedings of the meeting. Unless otherwise specifically limited by their terms, such proxies shall entitle the holders thereof to vote at the meeting by the proxy. Proxies shall terminate after the final adjournment of such meeting. Voting by written proxy at a meeting shall not be considered the same as attending the meeting to satisfy the requirements of Section 2.4.

3.9 VOTING ON ONE'S OWN APPLICATION: At no time can voting members vote on their own applications.

3.10 SPECIAL INTEREST VOTING: Voting members cannot have a commercial interest in telecommunications in any of their regions, and/or adjacent regions', application(s) which they are reviewing, approving, and/or voting on.

ARTICLE IV
OFFICERS AND AGENTS

4.1 NUMBER AND QUALIFICATION: The officers of the Region 6 800 MHz RPC shall consist of a chair, vice chair, secretary, and such other officers, if any, as the voting members may determine. With the exception of the secretary, all officers must be voting members of the Region 6 800 MHz RPC. The chair and vice chair shall not be employed by the same agency.

4.2 ELECTION: At the annual meeting held in odd numbered years the vice chair and the secretary shall be elected for a term of two years. At the annual meeting held in even numbered years the chair shall be elected for a term of two years. Thereafter, at the annual meeting of the members, the vice chair and the secretary, or the chair and the treasurer (if any), shall be elected on alternating years.

4.3 TENURE: The officers shall each hold office until the annual meeting of the members in which the term of their office expires and elections are held, or until their successors, if any, are chosen, or in any case until they die, resign, are removed or become disqualified.

4.4 CHAIR AND VICE CHAIR: The chair shall be the chief executive officer of the RPC and, subject to the control of the voting members, shall have general charge and supervision of the affairs of the Region 6 800 MHz RPC. The chair shall preside at all meetings of the Region 6 800 MHz RPC. The vice chair, if any, shall have such duties and powers as the voting members shall determine. The vice chair shall have and may exercise all the powers and duties of the chair during the absence of the chair or in the event of his or her inability to act.

4.5 SECRETARY: The secretary shall record and maintain records of all proceedings of the members in a file or series of files kept for that purpose. Such file or files shall be kept within the region and shall be open at all reasonable times to the inspection of any member. Such file or files shall also contain records of all meetings and the original, or attested copies, of

bylaws and names of all members and the address of each (including e-mail addresses, if available). If the secretary is absent from any meeting of members, a temporary secretary chosen at the meeting shall exercise the duties of the secretary at the meeting.

4.6 SUSPENSION OR REMOVAL: An officer may be suspended or removed from office with cause by a two-thirds vote of the voting members.

4.7 RESIGNATION: An officer may resign by delivering a written resignation to the chair, vice chair, or secretary of the Region 6 800 MHz RPC. Such resignation shall be effective upon receipt (unless specified to be effective at some other time), and acceptance thereof shall not be necessary to make it effective unless it so states.

4.8 VACANCIES: If any office becomes vacant, the voting members shall elect a successor. The successor shall hold office for the remainder of the term and in the case of the chair, vice chair, treasurer, and secretary until a successor is elected and qualified, or in each case until the successor, resigns, is removed, or is disqualified.

ARTICLE V
AMENDMENTS

5.1 METHOD OF MODIFICATION: These bylaws may be altered, amended, or repealed in whole or in part by vote. The voting members may, by a two-thirds vote, alter, amend, or repeal any of the bylaws adopted by the Region 6 800 MHz RPC members or otherwise adopt, alter, amend, or repeal any provision that requires action by the voting members, per FCC regulations or these bylaws.

ARTICLE VI
DISSOLUTION

6.1 DISSOLUTION: This Regional Planning Committee may be dissolved by the consent of two thirds plus one of the members in good standing at a special meeting called for such purpose. The FCC shall be notified in writing by the chair or, in the chair's absence, the vice chair.

ARTICLE VII

RULES OF PROCEDURES

7.1 GOVERNANCE OF MEETINGS: The conduct of Region 6 800 MHz RPC meetings, including, without limitation, debate and voting, shall be governed by the most current edition of *Robert's Rules of Order*.

REGION 6 (NORTHERN CALIFORNIA) 800 MHz REGIONAL PLAN
(Amended January 2013*)*

ATTACHMENT B
REGION 6 NPSPAC (NORTHERN CA) FREQUENCY ADVISORY AND PLAN REVISION SUBCOMMITTEE MEMBERSHIP LIST – AS OF MARCH 2014

COMMITTEE CHAIR	**VICE-CHAIR**	**SECRETARY**
John Lemmon State of California OES 601 Sequoia Pacific Blvd. Sacramento CA 95811-0231 V: 916 657-6153 john.lemmon@state.ca.gov	Preston Thomson 6860 Country Ct. Granite Bay, CA 95746-8817 V: 916 797-5395 ncapco@surewest.net	Kent Eldridge County of Sacramento (Retired) V: 916 508-6438 eldridgek@comcast.net
LAW ENFORCEMENT	**LAW ENFORCEMENT**	**LOCAL GOVERNMENT**
Robert Stevens Sacramento Sheriff (Retired) V: 916 801-0987 stevens.robt@gmail.com	Hanna (John) Batarseh CHP Telecom 601 North 7th Street, Sacramento CA 95811 V: 916 843-4256 jbatarseh@chp.ca.gov	Randall Hagar County of Alameda 1401 Lakeside Drive Oakland, CA 94621 V: 510 208-9789 randall.hagar@acgov.org
REGIONAL – VALLEY	**REGIONAL - OTHER**	**REGIONAL – BAY AREA**
Jim Lencioni Placer County V: 530 889-7747 jlencion@placer.ca.gov	Weedy Hannibal County of Butte 308 Nelson Avenue Oroville, CA 95965 V: 530 538-7101 whannibal@buttecounty.net	Jim Coates County of Santa Clara 2700 Carol Drive San Jose, CA 95125-2096 V: 408 977-3210 jim.coates@911.sccgov.org
FIRE/EMS	**FIRE/ EMS**	**STATE GOVERNMENT**
Karl Grover Information Technology 401 Oak Street, Suite 404 Roseville, CA 95678 V: 916 774-5145 kgrover@roseville.ca.us	Chuck Schuler Sac Regional Fire/EMS CC 10239 Systems Parkway Sacramento, CA 95827-3006 V: 916 591-0380 cschuler@srfecc.ca.gov	Diana Garcia State of California OES 601 Sequoia Pacific Blvd. Sacramento CA 95811-0231 V: 916 657-6165 diana.garcai@state.ca.gov
AT LARGE	**SPECIAL DISTRICT**	**FREQUENCY ADVISOR**
Ron Allison County of Sacramento (Retired) 9810 Mosswood Cir, Folsom 95630 V: 916 599-1234 rnldallsn@aol.com	Tom Herold, P.E. Bay Area Rapid Transit District 300 Lakeside Drive Oakland, CA 94604-2688 V: 510 464-6535 therold@bart.gov	Scott Andrews City of Sacramento 1000 I St, Ste 120 Sacramento, CA 95814 V: 916 808-7327 sandrews@cityofsacramento.org

REGION 6 (NORTHERN CALIFORNIA) 800 MHz REGIONAL PLAN
(Amended January 2013*)*

ATTACHMENT C

Licensing Procedure for the Interoperability Channels

Contact the State PSCO (Public Safety Communications Office) at 916-657-6153 to determine the most current procedure and the order of the following steps. Also inquire as to the current frequency coordination and licensing costs.

- Draft a Letter of Intent on your agency letterhead. This letter should contain general information on the requested channels, proposed site, and area of operations. If the system is to serve more than single political entity, provide additional details such as a list of all individuals responsible for the project.
- Fill out a FCC 601 license request form and Schedules D and H. It is strongly suggested to review the entire form and schedules before filling out the forms in the application package.
- Send the Letter of Intent and completed forms to:
  California EMA
  Attn: California Interoperability Coordinator's Office
  3650 Schriever Avenue
  Mather, CA 95655
  interop@calema.ca.gov
- Develop a proposal package including coverage plots, applicable frequencies and channels, SOPs, letters of recommendations or endorsements from neighboring jurisdictions, and/or concurrence from regional frequency coordination groups.
- Submit proposal package to Regional Planning Committee Region 6 for review and approval.
- Submit proposal package for CalSIEC Planning Area review. Proposal packages must be reviewed by a CalSIEC Planning Area prior to CalSIEC endorsement. Each Planning Area governance body meets on a quarterly basis. It is recommended you contact the Planning Area chair and arrange to have your proposal package reviewed by the committee. System proposals must be in compliance with State and Federal guidelines for Interoperability channels. Contact the California Interoperability Coordinator's Office (CICO) or Cal EMA for assistance with contacting the CalSIEC Planning Areas. More information can be found on the CalSIEC website at http://www.calema.ca.gov/TechnologyOperations/Pages/calsiec.aspx
- Forward the CalSIEC Planning Area endorsement letter to the CICO.
- CalSIEC reviews proposal package for final endorsement.
- The CalSIEC endorsement letter will be forwarded to the PSCO FCC unit for processing. Contact the PCSO FCC unit at 916-657-6153 for a status on FCC authorization.
- Requested channels may be programmed into the agency radios, but not utilized until official FCC authorization.

REGION 6 (NORTHERN CALIFORNIA) 800 MHz REGIONAL PLAN
(Amended January 2013*)*

ATTACHMENT D

Interoperability Channel Use Request Procedure

- Determine what channel(s) will best fit your pre-planned event's needs.
- Send a request to the California State Warning Center (CSWC) by email at warning.center@ops.calema.ca.gov or by phone at 916-845-8911. Law Enforcement channel requests can be sent through a CLETS message. The request should contain the following information:
  - County (i.e. Alameda)
  - Frequency (i.e. VCALL10)
  - Main/alternate requestor contact information including phone and email
  - Incident priority level as defined in Section 4.2.
  - Event description
  - Start date and time
  - End date and time
  - Attach ICS form 205
- When you are finished using the channel or your allocated time has expired, you must cease use of the channel and repeaters so that it will be available for other agencies to use. To extend use of a channel, a new channel request must be sent.

REGION 6 (NORTHERN CALIFORNIA) 800 MHz REGIONAL PLAN
(Amended January 2013)

ATTACHMENT E, TABLE OF CHANNELS							
New Chan	New Base	Old Chan	Old Base	USER 1	USER 2	USER 3	USER 4
1	**851.01250**	**601**	**866.0125**	INTERNATIONAL CALLING (8CALL90)			
	851.02500		**866.0250**	**Guard Channel**			
2	**851.03750**	**602**	**866.0375**	**BART**	**Vacaville (Secondary)**		
3	**851.05000**	**603**	**866.0500**	**Sacramento**	**Ci/Co San Francisco (Secondary)**		
4	**851.06250**	**604**	**866.0625**	**Belmont**	**Vets Home-Yountville**		
5	**851.07500**	**605**	**866.0750**	**UC Davis**	**Co Alameda (Secondary)**		
6	**851.08750**	**606**	**866.0875**	**Ceres**			
7	**851.10000**	**607**	**866.1000**	**Co Alameda**			
8	**851.11250**	**608**	**866.1125**	**Sacramento**	**Co Alameda (Secondary)**		
9	**851.12500**	**609**	**866.1250**	**Ci/Co San Francisco**			
10	**851.13750**	**610**	**866.1375**	**Vacaville**	**Co Contra Costa (Jail)**	**Co Sacramento (Secondary)**	
11	**851.15000**	**611**	**866.1500**	**Ci/Co San Francisco**	**Fresno**		
12	**851.16250**	**612**	**866.1625**	**Co Sacramento**	**Co Alameda (Secondary)**		
13	**851.17500**	**613**	**866.1750**	**Oakland**			
14	**851.18750**	**614**	**866.1875**	**Guard Channel**	**State of Nevada**		
15	**851.20000**	**615**	**866.2000**	CA LAW ENFORCEMENT MUTUAL AID RADIO SYSTEM (CLEMARS) REGION 6 ONLY (CALAW9)			
16	**851.21250**	**616**	**866.2125**	**Guard Channel**			
17	**851.22500**	**617**	**866.2250**	**UC Berkeley**	**UC Davis (Secondary)**		
18	**851.23750**	**618**	**866.2375**	**Roseville**	**BART (Secondary)**		
19	**851.25000**	**619**	**866.2500**	**Ci/Co San Francisco**			
20	**851.26250**	**620**	**866.2625**	**Co Sacramento**	**Santa Clara**		
21	**851.27500**	**621**	**866.2750**	**Guard Channel**			

ATTACHMENT E, TABLE OF CHANNELS							
22	851.28750	622	866.2875	Red Cross	UC Davis (Secondary)		
23	851.30000	623	866.3000	Guard Channel			
24	851.31250	624	866.3125	BART			
25	851.32500	625	866.3250	Sacramento			
26	851.33750	626	866.3375	Co Alameda			
27	851.35000	627	866.3500	Co Contra Costa			
28	851.36250	628	866.3625	Co Contra Costa	CYA Ione (Secondary)		
29	851.37500	629	866.3750	Co Alameda			
30	851.38750	630	866.3875	Sacramento			
31	851.40000	631	866.4000	Ci/Co San Francisco			
32	851.41250	632	866.4125	Vacaville		Co Sacramento (Secondary)	
33	851.42500	633	866.4250	Ci/Co San Francisco	Fresno		
34	851.43750	634	866.4375	Co Sacramento	Co Alameda (Secondary)		
35	851.45000	635	866.4500	Oakland			
36	851.46250	636	866.4625	Co Sacramento	Santa Clara		
37	851.47500	637	866.4750	Guard Channel			
38	851.48750	638	866.4875	UC System			
	851.50000		866.5000	Guard Channel			
39	851.51250	639	866.5125	INTERNATIONAL TACTICAL CHANNEL 1 (8TAC91)			
	851.52500		866.5250	Guard Channel			
40	851.53750	640	866.5375	STATE OF CA MULTIPLE AGENCY RADIO SYSTEM 1			
41	851.55000	641	866.5500	Guard Channel			
42	851.56250	642	866.5625	BART			
43	851.57500	643	866.5750	Roseville	Vacaville (Secondary)		
44	851.58750	644	866.5875	Ci/Co San Francisco			
45	851.60000	645	866.6000	Co Sacramento	Santa Clara		
46	851.61250	646	866.6125	Ci/Co San Francisco	Turlock		
47	851.62500	647	866.6250	Sacramento	Sunnyvale		
48	851.63750	648	866.6375	Richmond			

ATTACHMENT E, TABLE OF CHANNELS							
49	851.65000	649	866.6500	Co Sacramento	San Jose		
50	851.66250	650	866.6625	Oakland			
51	851.67500	651	866.6750	Sacramento	Co Alameda (Secondary)		
52	851.68750	652	866.6875	San Bruno	State of Nevada	Co Contra Costa (Jail)	
53	851.70000	653	866.7000	Elk Grove USD			
54	851.71250	654	866.7125	Oakland			
55	851.72500	655	866.7250	Lodi	Roseville	BART (Secondary)	
56	851.73750	656	866.7375	UC Berkeley			
57	851.75000	657	866.7500	Sacramento	Co Alameda (Secondary)		
58	851.76250	658	866.7625	Ci/Co San Francisco			
59	851.77500	659	866.7750	Vacaville	Co Sacramento (Secondary)		
60	851.78750	660	866.7875	Oakland			
61	851.80000	661	866.8000	Co Sacramento	Fresno	Co Alameda (Secondary)	
62	851.81250	662	866.8125	Ci/Co San Francisco			
63	851.82500	663	866.8250	Sacramento	Campbell		
64	851.83750	664	866.8375	Richmond	Turlock		
65	851.85000	665	866.8500	Co Sacramento	Co Alameda (Secondary)		
66	851.86250	666	866.8625	Redwood City			
67	851.87500	667	866.8750	Roseville	Stockton		
68	851.88750	668	866.8875	BART	Co Sacramento (Secondary)		
69	851.90000	669	866.9000	Guard Channel			
70	851.91250	670	866.9125	NOR CA FIREMARS 2 (CAFIRE2)			
71	851.92500	671	866.9250	Guard Channel			
72	851.93750	672	866.9375	San Joaquin Data	San Jose Data	Ci/Co San Francisco (Secondary)	
73	851.95000	673	866.9500	Guard Channel			
74	851.96250	674	866.9625	Co Contra Costa Data			
75	851.97500	675	866.9750	Guard Channel			
76	851.98750	676	866.9875	UC System	CYA at Stockton		
	852.00000		867.0000	Guard Channel			
77	852.01250	677	867.0125	INTERNATIONAL TACTICAL CHANNEL 2 (8TAC92)			

ATTACHMENT E, TABLE OF CHANNELS							
	852.02500		867.0250	Guard Channel			
78	852.03750	678	867.0375	BART	Co Sacramento (Secondary)		
79	852.05000	679	867.0500	Roseville			
80	852.06250	680	867.0625	Ci/Co San Francisco	State of Nevada		
81	852.07500	681	867.0750	Co Sacramento	Mountain View		
82	852.08750	682	867.0875	Ci/Co San Francisco	Ceres		
83	852.10000	683	867.1000	Sacramento	Livermore Amador Transit		
84	852.11250	684	867.1125	Oakland			
85	852.12500	685	867.1250	Roseville	Stockton		
86	852.13750	686	867.1375	Oakland			
87	852.15000	687	867.1500	Co Sacramento	Santa Clara Co.		
88	852.16250	688	867.1625	Richmond			
89	852.17500	689	867.1750	Co Sacramento		Ci/Co San Francisco (Secondary)	
90	852.18750	690	867.1875	Emeryville / Piedmont			
91	852.20000	691	867.2000	Vacaville			
92	852.21250	692	867.2125	Ci/Co San Francisco	State of Nevada		
93	852.22500	693	867.2250	Elk Grove USD			
94	852.23750	694	867.2375	BART			
95	852.25000	695	867.2500	Co Sacramento			
96	852.26250	696	867.2625	Ci/Co San Francisco			
97	852.27500	697	867.2750	Davis			
98	852.28750	698	867.2875	Oakland	CYA at Ione		
99	852.30000	699	867.3000	Sacramento	Santa Clara		
100	852.31250	700	867.3125	Walnut Creek	Ci/Co San Francisco (Secondary)		
101	852.32500	701	867.3250	Sac Metro FD	Santa Clara (Secondary)		
102	852.33750	702	867.3375	Richmond			
103	852.35000	703	867.3500	Co Sacramento	Santa Clara		
104	852.36250	704	867.3625	Ci/Co San Francisco			
105	852.37500	705	867.3750	Roseville	Stockton		
106	852.38750	706	867.3875	Ci/Co San Francisco			
107	852.40000	707	867.4000	Co Sacramento	State of Nevada		
108	852.41250	708	867.4125	Co Alameda			

ATTACHMENT E, TABLE OF CHANNELS							
109	**852.42500**	**709**	**867.4250**	**Co Contra Costa**			
110	**852.43750**	**710**	**867.4375**	**Co Contra Costa**			
111	**852.45000**	**711**	**867.4500**	**Co Alameda**	**Turlock**		
112	**852.46250**	**712**	**867.4625**	**Sacramento**			
113	**852.47500**	**713**	**867.4750**	**Guard Channel**			
114	**852.48750**	**714**	**867.4875**	**UC System**	**CYA at Stockton**		
	852.50000		**867.5000**	**Guard Channel**			
115	**852.51250**	**715**	**867.5125**	INTERNATIONAL TACTICAL CHANNEL 3 (8TAC 93)			
	852.52500		**867.5250**	**Guard Channel**			
116	**852.53750**	**716**	**867.5375**	STATE OF CA MULTIPLE AGENCY RADIO SYSTEM 2			
117	**852.55000**	**717**	**867.5500**	**Guard Channel**			
118	**852.56250**	**718**	**867.5625**	**BART**	**Vacaville (Secondary)**		
119	**852.57500**	**719**	**867.5750**	**Sacramento**			
120	**852.58750**	**720**	**867.5875**	**Co Alameda**			
121	**852.60000**	**721**	**867.6000**	**Co Contra Costa**			
122	**852.61250**	**722**	**867.6125**	**Co Contra Costa**			
123	**852.62500**	**723**	**867.6250**	**Co Alameda**			
124	**852.63750**	**724**	**867.6375**	**Sacramento**			
125	**852.65000**	**725**	**867.6500**	**Richmond**	**Ci/Co San Francisco (Secondary)**		
126	**852.66250**	**726**	**867.6625**	**Davis**	**Santa Clara Co.**	**State of Nevada**	
127	**852.67500**	**727**	**867.6750**	**Ci/Co San Francisco**			
128	**852.68750**	**728**	**867.6875**	**Co Sacramento**	**Santa Clara**		
129	**852.70000**	**729**	**867.7000**	**Oakland**			
130	**852.71250**	**730**	**867.7125**	**Sacramento**	**Turlock**	**Santa Clara (Secondary)**	
131	**852.72500**	**731**	**867.7250**	**Oakland**			
132	**852.73750**	**732**	**867.7375**	**Sacramento**			
133	**852.75000**	**733**	**867.7500**	**Co Alameda**			
134	**852.76250**	**734**	**867.7625**	**Co Contra Costa**	**State of Nevada**		
135	**852.77500**	**735**	**867.7750**	**Co Contra Costa**			

ATTACHMENT E, TABLE OF CHANNELS							
136	852.78750	736	867.7875	Co Alameda			
137	852.80000	737	867.8000	Sac Metro FD			
138	852.81250	738	867.8125	BART			
139	852.82500	739	867.8250	Roseville	Stockton		
140	852.83750	740	867.8375	Ci/Co San Francisco			
141	852.85000	741	867.8500	Elk Grove USD			
142	852.86250	742	867.8625	Ci/Co San Francisco			
143	852.87500	743	867.8750	Co Sacramento	Santa Clara (Secondary)		
144	852.88750	744	867.8875	Oakland			
145	852.90000	745	867.9000	Sacramento			
146	852.91250	746	867.9125	Co Alameda			
147	852.92500	747	867.9250	Co Contra Costa			
148	852.93750	748	867.9375	Co Contra Costa			
149	852.95000	749	867.9500	Co Alameda			
150	852.96250	750	867.9625	Sacramento	Palo Alto	Ceres	
151	852.97500	751	867.9750	Guard Channel			
152	852.98750	752	867.9875	UC System	CYA at Stockton		
	853.00000		868.0000	Guard Channel			
153	853.01250	753	868.0125	INTERNATIONAL TACTICAL CHANNEL 4 (8TAC94)			
	853.02500		868.0250	Guard Channel			
154	853.03750	754	868.0375	BART			
155	853.05000	755	868.0500	Roseville			
156	853.06250	756	868.0625	Richmond	CYA at Ione	State of Nevada	
157	853.07500	757	868.0750	Davis			
158	853.08750	758	868.0875	Ci/Co San Francisco			
159	853.10000	759	868.1000	Sacramento			
160	853.11250	760	868.1125	Co Alameda			
161	853.12500	761	868.1250	Co Contra Costa			
162	853.13750	762	868.1375	Co Contra Costa			
163	853.15000	763	868.1500	Co Alameda			
164	853.16250	764	868.1625	Sacramento			
165	853.17500	765	868.1750	Oakland			

ATTACHMENT E, TABLE OF CHANNELS							
166	853.18750	766	868.1875	Co Sacramento	Santa Clara Water	Co Alameda (Secondary)	
167	853.20000	767	868.2000	Oakland			
168	853.21250	768	868.2125	Vacaville			
169	853.22500	769	868.2250	Ci/Co San Francisco			
170	853.23750	770	868.2375	UC Davis	Santa Clara Water (Secondary)		
171	853.25000	771	868.2500	Ci/Co San Francisco	Turlock		
172	853.26250	772	868.2625	Co Sacramento			
173	853.27500	773	868.2750	Co Alameda			
174	853.28750	774	868.2875	Co Contra Costa			
175	853.30000	775	868.3000	Co Contra Costa			
176	853.31250	776	868.3125	Co Alameda			
177	853.32500	777	868.3250	Co Sacramento			
178	853.33750	778	868.3375	Oakland			
179	853.35000	779	868.3500	Roseville	Stockton		
180	853.36250	780	868.3625	BART	Co Sacramento (Secondary)		
181	853.37500	781	868.3750	Guard Channel			
182	853.38750	782	868.3875	STATE OF CA MULTIPLE AGENCY RADIO SYSTEM 3			
183	853.40000	783	868.4000	Guard Channel			
184	853.41250	784	868.4125	Ci/Co San Francisco			
185	853.42500	785	868.4250	Co Sacramento	Santa Clara		
186	853.43750	786	868.4375	Ci/Co San Francisco			
187	853.45000	787	868.4500	Co Sacramento	Santa Clara		
188	853.46250	788	868.4625	Oakland			
189	853.47500	789	868.4750	Guard Channel			
190	853.48750	790	868.4875	UC System	CYA at Stockton		
191	853.50000	791	868.5000	Guard Channel			
192	853.51250	792	868.5125	CA LAW ENFORCEMENT MUTUAL AID RADIO SYSTEM (CLEMARS) (CALAW8)			
193	853.52500	793	868.5250	Guard Channel			

ATTACHMENT E, TABLE OF CHANNELS							
194	853.53750	794	868.5375	BART			
195	853.55000	795	868.5500	Roseville			
196	853.56250	796	868.5625	Co Alameda	Co Sacramento (Secondary)		
197	853.57500	797	868.5750	Co Contra Costa			
198	853.58750	798	868.5875	Co Contra Costa			
199	853.60000	799	868.6000	Co Alameda			
200	853.61250	800	868.6125	Sacramento			
201	853.62500	801	868.6250	Ci/Co San Francisco	Turlock		
202	853.63750	802	868.6375	Davis			
203	853.65000	803	868.6500	Ci/Co San Francisco			
204	853.66250	804	868.6625	Santa Clara Co.	Vacaville		
205	853.67500	805	868.6750	Richmond	Co Contra Costa (Jail)		
206	853.68750	806	868.6875	Co Sacramento	Santa Clara		
207	853.70000	807	868.7000	Oakland			
208	853.71250	808	868.7125	Sacramento			
209	853.72500	809	868.7250	Co Alameda			
210	853.73750	810	868.7375	Co Contra Costa			
211	853.75000	811	868.7500	Co Contra Costa			
212	853.76250	812	868.7625	Co Alameda			
213	853.77500	813	868.7750	Sacramento			
214	853.78750	814	868.7875	Ci/Co San Francisco			
215	853.80000	815	868.8000	Co Sacramento	Santa Clara		
216	853.81250	816	868.8125	Ci/Co San Francisco			
217	853.82500	817	868.8250	Elk Grove USD			
218	853.83750	818	868.8375	Oakland			
219	853.85000	819	868.8500	Co Sacramento	Santa Clara (Secondary)		
220	853.86250	820	868.8625	Richmond			
221	853.87500	821	868.8750	Co Sacramento	San Jose	Co Alameda (Secondary)	
222	853.88750	822	868.8875	Ci/Co San Francisco			
223	853.90000	823	868.9000	Sacramento			
224	853.91250	824	868.9125	Co Alameda			
225	853.92500	825	868.9250	Co Contra Costa			
226	853.93750	826	868.9375	Co Contra Costa			

ATTACHMENT E, TABLE OF CHANNELS							
227	**853.95000**	**827**	**868.9500**	**Co Alameda**			
228	**853.96250**	**828**	**868.9625**	**Sacramento**	**Ceres**		
229	**853.97500**	**829**	**868.9750**	**Guard Channel**			
230	**853.98750**	**830**	**868.9875**	STATEWIDE FIREMARS (CAFIRE1)			
	854.00000		**868.0000**	**Guard Channel**			