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(PR Docket 91-143)

REGION 3 (PR Docket 91-143)

THE ARIZONA PUBLIC SAFETY RADIO
SPECTRUM PLANNING COMMITTEE
REGIONAL PLAN

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1.0 INTRODUCTION

In December 1983, the United States Congress directed the Federal Communications Commission (FCC) to establish a plan to ensure that the communications needs of state and local public safety authorities would be met. The Commission issued a Notice of Inquiry on March 7, 1984 and over 300 comments from the public safety community and other interested parties were evaluated by the FCC staff.

These comments formed the basis for a Staff Report issued by the Commission's Private Radio Bureau on August 1, 1985. This report suggested various methods of meeting the communications needs of public safety. One option included the allocation of additional frequencies at 821-825 MHz and 866-870 MHz.

The Commission issued an allocation order on September 19, 1986. Six megahertz of spectrum were selected in the 821-824 MHz and 866-869 MHz bands since they were adjacent to frequencies already being used for public safety purposes. However, while the Commission made this allocation for this additional 6 MHz of spectrum for public safety use nationwide, they also recognized the necessity of developing a National Plan to promote interoperability among public safety providers and to insure an efficient use of the newly allocated spectrum.

Recognizing the importance of public safety participation in the development of the National Plan, the FCC established the National Public Safety Planning Advisory Committee (NPSPAC) in December 1986. With an open membership, NPSPAC provided the opportunity for the public safety community and other interested members of the public to participate in an overall spectrum management approach. The Commission charged NPSPAC with the following tasks: (1) identify communications requirements of public safety agencies; (2) develop a scheme for efficient use of the new frequencies; (3) develop a scheme to increase the utility of existing public safety frequencies; (4) recommend the manner in which new technologies can be applied to the public safety frequencies; and (5) recommend guidelines to ensure compliance with the National Plan.

NPSPAC submitted its Initial Report to the Commission in March 1987. On May 15, 1987, the Commission issued a Notice of Proposed Rule Making, which proposed policies, and rules for the National Plan. NPSPAC issued its Final Report in September 1987. On December 18, 1987, the Commission released a report and order regarding the development and implementation of a Public Safety National Plan: General Docket No. 87-112.

The National Plan consists of guidelines for the development of regional plans. The National Plan reflects the FCC's regulatory objective of maximizing spectrum efficiency and ensuring sufficient flexibility to accommodate specific communications requirements in different areas of the United States. Thus the United States was divided into Regions, primarily along state boundaries. A few large metropolitan areas were designated as independent Planning Regions.

Prior to the Report and Order, NPSPAC's Final Report had recommended a total of fifty-four (54) Planning Regions. However, when the Report and Order was released, the Commission had established only forty-eight (48) Planning Regions. A Petition for Limited Reconsideration was filed by NPSPAC on February 12, 1988, asking that additional planning regions be established due to densely populated metropolitan areas, which were regions in themselves. The Commission granted this Petition and established fifty-five (55) regions with Arizona as Region 3. The National Plan will serve as an umbrella under which regional plans such as this can be developed and implemented.

The National Plan provides guidelines for the development of regional plans, with as much regional self-governing as possible, to ensure that the needs of all eligible entities are considered in the planning process.

2.0 REGIONAL PROFILE

The state of Arizona encompasses almost 114,000 square miles and makes up Region 3. Much of the state is sparsely populated Federal and Native American Reservation land. There are two major population centers, Phoenix and Tucson. The State currently has over 3.5 million residents with population projections indicating an increase to 6.5 million people by the year 2000.

Geographically, Arizona is a complex mixture of environments varying from desert scrub plants near sea level to barren mountain peaks at over 12,670 feet elevation. An example of the extreme desert to mountain change occurs in the Tucson area where the Sonoran Desert basin changes to a pine forest in the Coronado National Forest, an almost 7000 foot change occurring in about 15 miles. Besides the Grand Canyon, another major geographic feature is the Mogollon Rim, a 200-mile long geographic barrier that separates the northern and southern portions of the State. The top of the Rim plateau contains the world's largest standing Ponderosa pine forest. The high mountains provide both the best and worst of radio communications and the ensuing interference and spectrum planning problems.

3.0 AUTHORITY

This plan has been developed by a representative group of Public Safety Services eligible for licensing in the 6 MHz of the 800 MHz spectrum. Authority for the Regional Planning Committee to carry out its assigned tasks is derived from the Federal Communications Commission (FCC Report and Order, Docket 87-112).

3.1 Regional Planning Committee

A Convener was selected and public notification pursuant to the National Plan was initiated. Since the state of Arizona has two large populated metropolitan centers and the majority of the state is rural areas, three (3) public meetings were held in order to accommodate the rural areas.

The membership of the Arizona Regional Planning Committee is open to representatives from all eligible user groups pursuant to FCC Report and Order, Docket 87-112, Section IV, Subsection B, Paragraph 46. Interested parties became participants in the formation of the Regional Planning Committee and represent both the Public Safety and Special Emergency Radio Services. A total of 105 individuals have participated in the Plan's developmental process. Appendix I lists names, organizational affiliations, and mailing addresses of all participants in the Regional Planning Committee formation.

Prior to working on the plan, the working committee sent two questionnaires to all Public Safety and Special Emergency Radio Service users for input concerning present and future communications needs. After compiling the received data from responding agencies, the Regional Planning Committee drafted the Plan.

3.2 Working Committee

A working committee was established to facilitate the development of the Regional Plan. Their main function was to receive input from local, state and federal representatives, as well as vendors and suppliers to be used in the formation of the Regional Plan. Members of this committee were as follows:

Chairman: Anthony J. Tricoci
City of Mesa Communications Division
P.O. Box 1466
Mesa, AZ. 85211-1466
Tel. (602) 644-2802

Member: Debbie Overton
Maricopa County Sheriff's Office
102 West Madison
Phoenix, AZ. 85003
Tel. (602) 256-1026

Member: Brent Ackzen
City of Glendale
Department of Police
7119 N. 57th Drive
Glendale, AZ. 85301
Tel. (602) 931-5518

Member: Rick Tannehill
Arizona Department of Public Safety
Technical Communications Division
P.O. Box 6638
Phoenix, AZ. 85005
Tel. (602) 223-2295

Member: Bob Gates
Salt River Project
P.O. Box 52025
Phoenix, AZ. 85072-2025

Member: Peter Meeks
City of Phoenix
Communications Section
2441 S. 22nd Avenue
Phoenix, AZ. 85009-6917
Tel. (602) 262-7034

3.3 Approval of Regional Plan

Prior to submitting the plan for FCC approval, an announcement was made that a draft of the Plan was available for review, and copies were sent to any requesting party. All adjacent regions (Region 5 - Southern California, Region 7 - Colorado, Region 27 - Nevada, Region 29 - New Mexico, and Region 41 - Utah) received copies for review and comments. (See Appendix VI for concurrence)

All comments were to be received by February 1, 1991. A public meeting was held on February 7, 1991 at 0930 hrs at the City of Glendale Council Chambers Building, as a means for those interested parties to make their comments known before the Working Committee. Following receipt of all comments, the Working Committee made modifications to the Plan by the opinion of the majority. Copies of the modified sections of the Plan were sent to those parties who had submitted comments. Upon approval of the changes, the final plan was formulated.

3.4 Regional Review Committee

Upon FCC approval of this plan, a Regional Review Committee will be established for the review of new applications and for conducting an annual system implementation review. Since modifications to the Plan may be necessary because of changing requirements, the committee will also recommend changes and/or modifications of the Regional Plan to be submitted to the FCC. The committee will also provide a mechanism for resolution of inter- and intra- regional disputes and for exercising general oversight of the Plan.

The Arizona Regional Review Committee (ARRC) shall be comprised of eleven members with no more than one committee member from a single political jurisdiction. Nominations to the committee shall be made as part of an open, general meeting.

Semi-annual open, public meetings shall be held concurrent with Arizona APCO chapter meetings. Each attending political jurisdiction shall be apportioned one vote at each meeting. Designated representatives and alternates shall be identified prior to the meetings.

Voting on vacancies shall take place at the general meeting of the ARRC after publication of all nominations to the entire APCO chapter membership. Members to this committee must be elected by a majority vote of all designated representatives present at the semi-annual meeting, as per Robert's Rules of order, and who are current employees of an Arizona political jurisdiction. The chairperson of this committee shall be chosen by the committee.

There shall be no time limit for serving on the ARRC, but a member may be removed from this Committee by resignation or by a vote of the quorum of an open, general meeting. Such removal may take place only after a thirty-day written notice has been made to the entire authorized voting representatives.

No changes, modifications, or amendments can be made to the approved Plan unless agreed to by at least a two-thirds majority of the quorum of the ARRC members.

No change in a position on the priority list for assignment of a frequency in either the 800 MHz spectrum or in reallocation of lower frequencies that may be given up to receive 800 MHz assignments can be made unless approved by at least a two-thirds majority of the ARRC.

Minutes of all meetings of the ARRC must be taken and mailed to the appropriate agencies.

3.5 Conclusion

This Plan, when approved and implemented, will ensure the best possible use of this new portion of the spectrum and will also ensure an orderly transition from existing frequencies/systems to this new portion of the spectrum. It will also serve as a guide in the reassignment of vacated channels, and provide, through the Regional Review Committee, an ongoing method of ensuring fair and equitable recommendations of channels and usage to all Public Safety Services and users. Resolution of any arising conflict is left to the judgment of the Commission.

4.0 COMMUNICATIONS REQUIREMENTS - REGIONAL INTEROPERABILITY

4.1 General

This part of the Arizona Regional Plan deals with the requirement for coordinated communications between various jurisdictions and functional entities within the Region. The intent is to ensure compatibility in the assignment of frequencies, especially calling and interoperability channels. The purpose of this plan is not to replace existing intercommunication plans or channels, but to supplement them at 800 MHz with a more detailed plan. In fact, the Regional Plan encourages continued use of VHF and UHF intercommunications presently in use for Police and Fire, including 155.475 MHz, 460.375 MHz, and 154.280 MHz. The plan also encourages cross patching these channels to the 800 MHz Common Calling Channels, and others as appropriate, at the dispatch console level within regional operating subsystems.

4.2 Regional Calling and Interoperability Channels Authority

The Federal Communications Commission (FCC), in Docket 87-112, Sec. IV.C.50-52, released Dec. 18, 1987, mandated the use of a single, conventional, common-calling channel and four (4) tactical channels on a nationwide basis in the new 800 MHz Public Safety allocations. The FCC also strongly recommended the use of CTCSS tone squelch nationally on a frequency of 156.7 Hz.

The Arizona Regional Planning Committee has reviewed and implemented the five- (5) national channels, and added one (1) additional 800 MHz channel for interoperability strictly within the Arizona Region. The Arizona Plan also adopts the use of 156.7 Hz tone squelch as mandatory on all voice radio systems on the common calling and interoperability channels.

4.3 Eligibility

Primary eligible users include Police, Fire, Local Govt., Highway Maintenance, Forestry Conservation, and providers of Basic and Advanced Life Support Services in Special Emergency Services, as defined in the FCC Rules and Regulations, and licensed to use the spectrum. These users are eligible to operate base stations on the five- (5) National and one- (1) Statewide interoperability channels.

In addition, Federal agencies may become eligible entities through the use of public safety agreements, whereby a licensee may permit federal use of a non-federal communications system. Such use, other than the five common calling channels is to be in full compliance with the FCC's requirements for federal government use on state and local government frequencies (Title 47 CFR, Sec. 2.103).

Also, other eligible entities such as school buses, volunteer emergency corps, Red Cross, Radio

Amateur Civil Emergency Services (RACES), Amateur Radio Emergency Services (ARES), Salvation Army, etc., under the National Plan may also participate on a secondary basis in the support of the preservation of life and property during an emergency.

4.4 Application Procedures

All interoperability channel licensees for Mobile Relay (FB2), or Fixed Stations (FB) shall be obtained by and in the name of the entity authorized by the Arizona Regional Review Committee. Other base radios shall be licensed in the name of the applicant agency. In accordance with FCC Report and Order General Docket 87-112, vehicular, portable, and aircraft stations using either the five National channels or the Statewide interoperability channel (Channel 6, 8TAC5) may operate without further FCC authorization. However, the prospective vehicular/portable/aircraft user must comply with 4.5.4 of this section.

4.5 Allocated Common Calling/Tactical Interoperability Channels

The use and allocation of the calling and tactical interoperability channels is broken down as follows:

1. AIRSAZ (821/866.0125 MHz) - National Public Safety Calling and Rural Tactical Operations Interoperability.
2. 8TAC1 (821/866.5125 MHz) - Primary Fire and Emergency Medical Service, Statewide.
3. 8TAC2 (822/867.0125 MHz) - Primary Law Enforcement, Statewide.
4. 8TAC3 (822/867.5125 MHz) - Primary Fire and Emergency Medical Service, Statewide; Federal Govt.
5. 8TAC4 (823/868.0125 MHz) - Primary Law Enforcement, Statewide; Federal Govt.
6. 8TAC5 (821/866.0375 MHz) - Primary Statewide for all Other Public Safety, including Highway/Forestry/Local Govt./Search & Rescue.

Although primary usage is defined above, this is not to preclude use by all other eligible entities when appropriate in coordinated operations. (See 4.3)

It is mandatory that all agencies use the names listed above to facilitate interagency communications. Optionally, the channel name can be modified when used in the direct or talk around mode with the addition of the letter 'D' (Direct) to the end of the name, e.g. 8TAC2_D. This requirement is based on the capabilities of an entity's subscriber equipment.

4.5.1 Common Calling Channel Monitoring Requirements

All new portable/mobile radios granted license authorizations in the 821-824 MHz and 866-869 MHz bands, as well as all replacement equipment in the 806-821 MHz and 851-866 MHz bands, shall be capable of and equipped to operate on Channels 1 - 5 calling and tactical frequencies in the conventional mode of operation. In addition, each portable/mobile radio shall have the repeater "Direct or talk-around" channel on Channel 1 (National Calling Channel) and on their primary tactical channels. Also, a Public Safety eligible receiving a new 800 MHz license is required to be able to monitor and communicate in the repeater and "Direct or talk-around" modes at their primary communications site.

The largest geographic Public Safety 800 MHz new system licensee in a geographic area may be required to place in operation, an AIRSAZ calling channel repeater at one or more of their existing repeater sites. If notification is made to a prospective licensee as a condition of system plan acceptance by ARRC and the FCC, the station shall be placed in service at the same time with the rest of the authorized system. A suitable Calling Channel funding plan shall be submitted as part of the authorization request.

4.5.2 Tactical Interoperability Channel Requirements

4.5.2.1 Monitoring Requirements

Each new licensee in the 800 MHz spectrum shall also have a base station radio at their primary station site, as a minimum requirement, capable of monitoring and operating on the primary tactical channels in their area, for which they are eligible service providers. This base station radio shall include frequencies for both simplex (Direct) and repeater control.

Use of Arizona Tactical (8TAC5) is prohibited in some areas in the Counties bordering California; however, it shall be included in all portable/mobile equipment in all other areas. Use of 8TAC5 in La Paz and Mohave Counties is subject to interference from a State of California transmitter located near Needles, California and use is prohibited within a 70 mile radius of the transmitter located at 34° 40' 54"N, 114° 41' 24"W.

4.5.2.2 Repeater Establishment

Permanent high power repeaters may be established on any of the tactical channels. The ARRC will determine the location of the tactical channel repeaters and has the authority to deny a license if potential interference exists. The permanent repeaters will normally be in the off mode and activated by the Regional Repeater Controlling Agency (RRCA) upon request from an agency requiring an interoperability channel in the event of a multi-agency incident. The Regional Repeater Controlling Agency will be designated by the ARRC and may or may not be the agency supplying the repeater equipment. If an interoperability repeater is to be installed within 70 miles of the State boundary, the

adjacent 800 MHz Region must be notified with the location in order to prevent interference to that Region's interoperability capabilities.

Low power (<20 watts ERP) transportable repeaters may be employed by any eligible service agency for establishing emergency communications over a wider area than simplex communications would allow. . The RRCA must be contacted by any agency using a transportable repeater within the coverage area of a permanent repeater. This is to allow for effective coordination and sharing of the frequencies. Such a repeater shall be turned off and removed as soon as practical after the event has passed. At no time will a tactical repeater be allowed to operate for more than a 30-day continuous period.

4.5.2.3 Voice Security/Privacy/Scrambling Equipment

Voice scrambling or encryption is NOT ALLOWED on the Common Calling Channel (AIRSAZ), except in rural areas, where the calling channel is also used for tactical operations. In rural areas, each licensee is still required to monitor the calling channel in CLEAR mode, regardless of voice encryption.

Voice scrambling or encryption IS allowed on the other voice tactical channels, either unit to unit, unit to base or through a temporary repeater if all users of the temporary repeater also have access to the CLEAR mode, or the same encryption scrambling standard as required.

4.5.3 Attestation

Each prospective licensee shall include a standard signed statement form with their request for authorization, acknowledging they have read and are familiar with the Arizona Regional Plan and agree to abide by its conditions, especially insofar as the Common Calling/Tactical Interoperability Channel operational requirements.

4.5.4 Priority Levels of Utilization

The established priority use levels for the six- (6) Common Calling/Tactical Interoperability Channels are described below. When a higher priority of use is required, all lower priority use must cease in ANY area where interference could occur.

The four priority levels are:

PRIORITY 1: Disaster and extreme emergency operations of large scale involving imminent safety of lives, for mutual aid and interagency communications.

PRIORITY 2: Emergency or urgent operations involving imminent safety of life or property.

PRIORITY 3: Special event control activities, generally of a preplanned nature, and generally involving

joint participation of two or more agencies.

PRIORITY 4: Drill, maintenance, and test exercise of a civil defense or disaster nature.

4.5.5 Language and Radio Codes Standards

All communications on the Common Calling/Tactical Interoperability Channels will be conducted in "CLEAR TEXT", using the ENGLISH language, unless use of another language is clearly necessary to carry out emergency communications.

4.6 Federal Govt. Communications Interface Requirements

Federal Govt. agencies, operating within the borders of the Arizona region, may access the Common Calling/Tactical Interoperability Channels for the purpose of coordinating with and communicating with Public Safety eligible entities. Federal agencies are exempt from the monitoring requirements set forth in Sec 4.2. However, their use of the Common Calling/Tactical Interoperability Channels shall otherwise be in complete conformance with the Regional Plan.

Before a federal agency is certified eligible to access the Common Calling/Tactical Interoperability Channels, there shall be established a formal agreement with the Public Safety eligible with whom they desire to have communications. This agreement shall be on the standard ARRC form. Each agreement shall be mailed to the ARRC for review and to be placed on file with the committee.

4.7 Public Switched Telephone Network

The use of automatic or operator-assisted connection on the Common Calling/Tactical Interoperability Channels to the public switched telephone network is strictly PROHIBITED.

4.8 Amateur Radio Intercommunications

It is the intent of the Arizona Regional Plan to encourage participation of the Amateur Radio community in public safety communications relating to emergency or disaster communications.

The following intercommunications of public safety radio communications systems are encouraged in emergency/disaster situations:

1. Loan of 800 MHz radios to qualified amateur radio emergency coordination groups, such as RACES, AREC, etc.

2. Allow amateur radio nets to operate out of Public Safety Command Centers.
3. Allow selective amateur to Public Safety cross patching under emergency conditions, at selected public safety communication centers, under control of a governmental entity.

4.8 Amateur Radio Intercommunications

All Amateur/Public Safety communications shall continue to comply with applicable FCC Rules and Regulations, and rules and plans of the affected amateur group.

It is strongly recommended that each Public Safety entity have an agreement in place with volunteer amateur groups, defining what level of intercommunications will be allowed and provided during an emergency situation. This plan should be filed with the ARRC coordinator for approval.

4.9 Operation in Aircraft

Operation of radio equipment on the six (6) Common Calling/Tactical Interoperability Channels is permitted, provided power is limited to 3 watts ERP and conforms to all applicable FCC Rules and regulations.

4.10 Grandfathered Equipment

Existing radio equipment that is currently operating in 806/866 MHz band and was in the agency's possession or ordered on/or before September 7, 1988 may be used with notification to the ARRC. To operate on the six Common Calling/Tactical Interoperability Channels, the deviation is to be +/- 4.0 kHz maximum.

4.11 Unit Identifiers/Automatic Station ID

Units operating on the Common Calling/Tactical Interoperability Channels are to include their agency name in their unit identification. (Example: Maricopa County, Mesa PD Unit 2 Adam 01) Automatic Station Identifiers usage is encouraged but is not to replace the voice identification requirement.

5.0 COMMUNICATIONS REQUIREMENTS-INTERREGIONAL INTEROPERABILITY

5.1 General

This portion of the Arizona Regional Plan deals with the requirement for coordinated communications between the Arizona Region, and adjacent regions in the Southwest. This includes the Southern California Region, Nevada Region, Utah Region, Colorado Region, New Mexico Region, and the Nation of Mexico. The purpose is to insure compatibility in the assignment of frequencies, especially Common Calling/Tactical Interoperability Channels. This plan does not replace any current VHF or UHF common channels in use by eligible agencies along the borders, but supplements them through designation of new Common Calling/Tactical Interoperability Channels at 800 MHz.

5.2 Interregional Calling and Tactical Channels; Authority:

The Federal Communications Commission (FCC) in General Docket 87-112, released Dec. 18, 1987, mandated the coordination of each authorized region's activities with adjacent regions. (IV.C.50-52)

The Arizona Regional Planning Committee has implemented a set of rules dictating interregional compatibility. These rules were made after contacting all adjacent regions to determine if there was any potential conflict with their plans. However, since the Commission has not yet approved some of the adjacent Region Plans, future changes may be required to ensure long-term compatibility.

5.3 Southern California Region Compatibility:

The common western border along the Colorado River with California, including San Bernardino, Riverside, and Imperial counties, is the area most likely to run into conflict both in operating frequency assignment, and in interoperability channel use. Southern California has previously asked for Arizona approval of their plan. This approval has been granted, after reviewing their plan. As a result, Arizona will not assign 823/868.5125 MHz or 823/868.9875 MHz to any agency located along the California border to avoid potential interference with their Channel 6 (Law) and Channel 7 (Fire/EMS) interoperability channels.

Previously, California had been asked not to assign Arizona Region interoperability Channel 6 (821/866.0500 MHz) along the Colorado River. This latest revision of the Arizona Plan has reassigned this channel and 821/866.0500 MHz is used as a guard band and will not be assigned for use in Arizona. Arizona Region interoperability Channel 6 is now 821/866.0375 MHz and Arizona will limit its use in the border area to prevent interference with existing users in Southern California.

Arizona licensees are encouraged to utilize the nationwide five Common Calling/Tactical Interoperability Channels to intercommunicate with California licensees when joint response is required along the Colorado River. Since this entire area is considered "Rural" in the Arizona Plan, any of the interoperability channels may be utilized for any service function with California.

5.4 Other Adjacent Region Compatibility:

Arizona rural licensees are likewise encouraged to utilize the five nationwide Common Calling/Tactical Channels along the border with any other region (Nevada, Utah, Colorado, New Mexico), as local conditions require. Any service use of the interoperability channels is permitted to achieve joint communications with other regional licensees. This plan may be amended from time to time as other regional plans continue to be developed. (Refer to Appendix V for letters of concurrence from adjacent regions.)

5.5 Communications with Mexico:

All interoperability frequencies are assumed to be usable and assignable to the Mexican Border as long as there is a mutual agreement on use within the 110 Km of the border. However, this portion of the plan is subject to automatic change depending upon FCC regulation and treaty with Mexico.

Governmental police eligible entities may communicate with officials from Mexico along the border in the event of an emergency or disaster. This should be done on the Common Calling/Tactical Interoperability Channels and only in conformance with Part 90.19c of the FCC Rules and Regulations. Sonoran authorities have been notified as to the Arizona Regional Plan for use of these frequencies.

6.0 APPLICATION PROCEDURES

Any request for frequencies between 821-824 and 866-869 MHz to be used for public safety operations (as described in Part 90 of the FCC Rules and Regulations) must be submitted to the Arizona Regional Review Committee (ARRC) for review.

SEND APPLICATION TO: ARIZONA REGIONAL REVIEW COMMITTEE
P.O. Box 863
Phoenix, AZ. 85001

If adequate spectrum is available, the ARRC shall review the application to determine its compliance with the Regional Plan as indicated below. If there is inadequate spectrum or the Committee anticipates a shortage, the established evaluation procedure shall be instituted. This procedure, "Evaluation Criteria", is outlined in Section 7.6.

Additionally, shared multi-agency systems will have priority consideration in accordance with the FCC Report and Order, Paragraph 37.

Also, in accordance with Paragraph 13 of the Report and Order, when it is not possible to grant requests for assignments in the new 800 MHz spectrum to everyone who is eligible, the highest priority must be given to those organizations most fundamentally involved in protection of lives and property.

If approved by the ARRC, the request for frequencies will be returned to the applicant to be forwarded to the Associated Public Safety Communications Officers (APCO) for frequency coordination. If not approved by the ARRC, the request will be returned to the applicant for revision and correction before being resubmitted to the Committee for further consideration.

The request shall contain information to justify the frequencies requested and shall demonstrate compliance with the Arizona Regional Plan. As a minimum, the request shall consist of the following:

1. Appropriate Coordination and Licensing Application Forms.
2. System Design Information.
3. Funding Statement.
4. Proposed Implementation Schedule.
5. Justification of the Number of Channels.
6. Existing Frequency Statement.
7. Statement of Understanding on Official Letterhead.
8. Frequency Re-use form. (Give backs)

Applicants for new frequencies in public safety allocations below 800 MHz may also apply to the ARRC. Using the criteria described in Section 8.0 of the Plan, the ARRC will assign the appropriate point total to such applications and add them in order of points to any waiting list for relinquished frequencies.

7.0 APPLICATION EVALUATION PROCEDURES

The Arizona Regional Review Committee will review and evaluate each request based on the sufficiency of the information required in the following:

7.1 System Design

A brief statement of the intended use of the requested frequencies and how they will be integrated into the existing emergency and non-emergency operations will be required. The efficiency of 800 MHz frequencies depends greatly upon the design and programming of the system itself to assist all public safety users in making all systems operate in an efficient manner. This is the reason this area is being included for review. Specific criteria regarding system parameters are in the section, "System Technical Design Requirements." (See 9.0)

Below are the different requirements for the system design. Additional detail follows, including sample calculations.

Listing of System Coverage and Service Area:

- Antenna height and power
- Definition of service area
- Calculation of service area
- Provide service area exhibit (map)
- Listing of control stations
- Frequency re-use
- Adjacent channel design
- Trunking requirements
- System loading requirements
- System engineering exhibit
 - Transmit output power
 - Type of intermodulation equipment and losses
 - Type of transmission lines and losses
 - Antenna model and gain
 - Ground elevation above mean sea level
 - Antenna centerline AGL
 - Height above average terrain of antenna centerline
 - Effective radiated power (ERP)
 - PSTN interconnect

7.2 Funding Statement

The applicant's commitment to implement the system ensures maintaining the efficient utilization of these 800 MHz frequencies. The funding statement, which will be a resolution from the applicant's governing body, will include the method by which the system will be funded.

7.3 Implementation Schedule

The applicant will be requested to furnish a schedule detailing the time period required to implement the proposed communication system, from funding through turn-on and final acceptance. Also indicate if "slow growth" is required.

All agencies applying for frequencies in the 800 MHz bands shall submit a letter of intent from the agency's Chief Administrative Officer verifying a fiscal and engineering commitment to the implementation and construction of a radio system within the parameters listed below:

- Submit to APCO/FCC coordination request and license application.
- Issuance of the RFP - 12 months after licensing.
- Award of contract - 24 months after licensing.

The Regional Review Committee anticipates that not all agencies or jurisdictions with allotted channels in the Plan will construct systems. The Regional Review Committee also recognizes that some agencies or jurisdictions may require more channels than are allotted in the Plan. The Plan envisions and the Regional Review Committee insists on a good faith showing of the intent from all agencies and jurisdictions with allotted channels. Therefore, channels will be considered available for allocation if licensing has not been initiated or specific plans have not been filed with the Regional Review Committee. The Plan has been in effect since September 1991. The Regional Review Committee considers this sufficient time for agencies and jurisdictions to have developed a long-range plan for use of these channels and to have provided notification to the Regional Review Committee.

7.4 Justify the Number of Channels

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

- Population statistics that are substantial and projected trends that indicate the growth per year.
- Statistics on numbers of radio equipped personnel in the field at one time, both currently and projected, based on population growth statistics or other qualified factors such as traffic analysis.

- The applicant's request must meet FCC rules for channel loading.

7.5 Existing Frequency Statement

The applicant will provide an explanation of how existing frequencies will be used by the applicant and a listing of the frequencies (give backs) to be released for re-use. Time frames for the release of frequencies for reassignment should be included in the implementation schedule submitted with the request.

Commitments to release channels shall become part of the Regional Plan and released channels shall be assigned to qualified agencies in accordance with the National/Regional Plan commitments. Letters of commitment must be provided by the applicant giving up the frequencies to the ARRC. Reassignment to give back frequencies will be made part of the plan.

7.6 Evaluation Criteria

The criterion, when instituted, incorporates a filing window concept, which will provide for the evaluation of all applications for available spectrum within a set time period. The evaluation is a sequence of events that will be followed in the allocation of the six-megahertz of 800 MHz spectrum. This process follows the guidelines established under the National Plan.

The allocation is placed in the frequency pool. If frequencies are available in the pool (a second iteration of the evaluation could occur if all frequencies are not allocated on the first iteration), a window-opening announcement is made. The first window period will be thirty days with late applications rejected. The second window will open upon completion of processing of applications received in the first window period. Applications are received and reviewed during the window period. The evaluation will result in the award of a score for each application. That score is the total of the points awarded in seven categories, with a maximum possible score of 1000 points.

The six categories are as follows:

1. Service (maximum score, 350 points). Each of the eligible services has a predetermined point value. That point value is multiplied by ten (10) to determine the score for the Service Category. An applicant with multiple services will be scored on the basis of the percentage that each service represents of his total system. That is, a system that is 50 percent police and 50 percent local government (school administration) would be awarded the total of 50 percent of the point value for police plus 50 percent of the point value for school administration.
2. Intersystem Communications (maximum score, 100 points). The application is scored on the degree of interoperability that is demonstrated, with a range of points from 0 to 100. This category does not rate the application on the inclusion of the mandated five common

channels for interoperability. This category does rate the application on its proposed ability to communicate with different levels of government and services during times of emergency.

3. Loading/Geographic Efficiency (maximum score 200 points). Those applicants that have demonstrated that they are part of a cooperative, multi-organizational system and show Geographic Efficiency will be scored on a range of 0 to 150 points depending on the extent of cooperation and Geographic Efficiency; the ratio of mobiles to area covered and the channel reuse potential. The ratio of mobiles to area covered measures the level of Geographic Efficiency that a system demonstrates. The higher the ratio (mobiles divided by square miles of coverage), the more efficient the use of the frequencies. An expansion of an existing 800 MHz system will be scored on a range of 0 to 50 points, depending upon the degree of expansion. A system could be an expansion of an existing 800 MHz cooperative system, and show a high ratio of Geographic Efficiency, which could result in receiving the combined point value for a maximum value of 200 points.
4. Spectrum Efficient Technology (maximum score, 100 points). This category scores the application on the degree of spectrum efficient technology that the system demonstrates. A point value range of 0 to 100 points can be awarded for this category. A trunked system would be considered a "spectrum efficient technology" as well as any technological systems feature that is designed to enhance the efficiency of the system and provide for the efficient use of the spectrum.
5. Systems Implementation Factors (maximum score, 50 points). This category scores the application on two factors, budgetary commitment and planning completeness. The degree of budgetary commitment is scored on a range of 0 to 25 points. An application that demonstrates a high degree of commitment in funding the proposed system will receive the higher score. Each application will be scored on the degree of planning completeness with a range of scoring from 0 to 25 points. Applications must include a timetable for the implementation of the communications system or systems.
6. Give backs (maximum score, 200 points). The application is scored on two factors: the number of channels given back and the extent of availability of those channels to others. The greater the number of channels given back, the higher the score will be, with a range of 0 to 100 points. The greater the availability of the "give backs", the higher the score will be for this factor, up to a maximum of 100 points. This point system will depend on whether the "give back" frequency is a co-channel frequency or if the "give back" frequency is a single user. The applicant shall submit a letter indicating frequency(s) being given back, authorizing signature, and date that the "give back" frequency(s) will take effect.

Points are totaled for each application and the applications are prioritized by the Arizona Regional Review Committee. The frequency pool is allocated and the Arizona Regional Plan is updated to reflect the frequency assignments.

System implementation is monitored by the Arizona Regional Review Committee, which determines if

progress is being made. If progress is not made, the licensee is warned of the consequences of his lack of progress. If continued monitoring indicates that sufficient progress is still not being made, the Federal Communications Commission (FCC) may be notified of the non-compliance and the licensee will be notified by the FCC of pending action that may result in withdrawal of their license. The notified licensee can appeal this action or can allow the license to be withdrawn. If the allocated frequencies are withdrawn, they are added back to the frequency pool.

7.7 Appeal Process

Throughout the frequency allocation process, applicants are given the opportunity to appeal decisions, which have caused rejection of their application. The appeal process has two levels: the Arizona Regional Review Committee (ARRC) and the Federal Communications Commission (FCC). An applicant who decides to appeal a rejection should file the appeal with the ARRC within 45 days from notification of rejection. If the applicant is not satisfied with the ARRC's final decision based on the appeal, the applicant may file an appeal with the FCC. The FCC's decision will be final and binding upon all parties.

7.8 Service Point Rating

	Minimum Value	Maximum Value
Local Government		
Transit Systems	5.0	30.0
Utility Operations	5.0	30.0
School Boards	0.0	20.0
Administration	0.0	25.0
Maintenance	5.0	25.0
Security	5.0	25.0
Other	0.0	25.0
Primary Police	35.0	35.0
Fire	35.0	35.0
Highway	10.0	30.0
Forestry Conservation	10.0	35.0
Fire	15.0	35.0
Medical Services		
Hospitals	0.0	20.0
Invalid Coach	0.0	20.0
Physicians	0.0	10.0

Rescue – BLS & ALS	30.0	35.0
Physically Handicapped	0.0	20.0
Veterinarians	0.0	5.0
Disaster Relief Org.	5.0	20.0

7.8 Service Point Rating (cont.)

School Buses		
Private Under Contract	0.0	10.0
Municipal Operated	0.0	20.0
Part of OEM EVAV	5.0	20.0
River/Lake/Beach Patrols	0.0	30.0
Isolated Areas	0.0	15.0
Communications		
Standby Facilities	0.0	25.0
Repair of Facilities	0.0	25.0

8.0 EXISTING FREQUENCIES

The Arizona Regional Plan encourages the surrendering of existing frequencies in the VHF and low UHF range by applicants for the 800 MHz spectrum. The ARRC will prioritize applicants for surrendered VHF and low UHF frequencies. This committee will then recommend any available frequency for the use of the highest priority applicant. This recommendation must be consistent with the frequency's normal service category, the applicant's eligibility within that service, and the technical way in which the frequency will be used. The ARRC will recommend approval of the license application by the appropriate frequency coordinator.

The ARRC will evaluate applications based upon the criteria established in Part 47 CFR, Part 22.504 and Part 90 of the Federal Communications Commission Rules and Regulations.

8.1 General Re-assignment Philosophy

Because of the demographic and geographic makeup of Arizona, the Arizona Region Plan encourages the following general frequency usage:

- a. 150-160 MHz: For reassignment in rural, varied topography, wide area applications. Discourage long term usage in the Phoenix Metropolitan Statistical Area (MSA).
- b. 450-470 MHz: For reassignment primarily within the MSA and wide area systems. Usage at high elevations and high effective radiated power outside of the MSA, where there is a high potential for interference to those within the MSA is to be discouraged with the exception of wide area services.
- c. 800 MHz: It is felt that few existing frequencies at 800 MHz will be surrendered. Also, because of propagation characteristics and the technical criteria for frequency reuse at 800 MHz, these frequencies will be treated the same as all other 800 MHz frequencies in their assignment.
- d. Frequency usage within the MSA is to be encouraged within the 450-470 MHz and 800 MHz allocations.

8.2 Point System Overview

The Arizona Regional Plan establishes a system for assigning points in order to prioritize applications for reassignment of surrendered frequencies. A total of 575 points are possible. The components of the point total are dependent upon:

- a. Minimum antenna height above average terrain.

- b. Minimum use of effective radiated power.
- c. Minimizing coverage outside the area of operation.
- d. Use of patterned antennas.
- e. Location of the transmitter in relation to the applicant's area of operation.
- f. Frequency band in relation to the MSA.
- g. The size of the area of operation.
- h. Frequency usage as control, mobile, base, or mobile relay.
- i. The population of the political jurisdiction making the application.

8.3 Prioritizing Point System

Criterion	Methodology	Maximum Points
Antenna height above average terrain (HAAT)	Optimum HAAT divided by design HAAT times 50. (See Note 1.)	50
Effective Radiated Power (ERP)	Optimum ERP divided by design ERP times 50. (See Note 2.)	50
Coverage	Area of Operations divided by Reliable Service Area times 100. (See Note 3.)	100
Radiation Pattern	Area of Operations sector width, in degrees divided by the total sector covered by the antenna system, times 75.	30
Location	Subjective evaluation of the selected site with respect to the intended operating area.	30
Loading	1 point per unit.	70
Sharing	25 points per entity or service (Police, Fire, LG.).	100
Band Plan	VHF outside MSA. UHF inside MSA.	100 100

8.4 Band Plan

Case 1. The frequency is within the low UHF range - if the station:

<u>Criterion</u>	<u>Raw Points</u>
a. will be used primarily or wholly within the MSA,	8
b. will be used as mobile only or mobile/control,	7
c. has an area of operation less than 500 square miles,	6
d. jurisdiction serves a population fewer than 50,000,	5
e. jurisdiction serves a population more than 50,000,	4
f. has an area of operation more than 500 sq mi.	3
g. is used as base station or mobile relay,	2
h. is outside of the MSA.	1

Case 2. The frequency is within the VHF band - if the station:

<u>Criterion</u>	<u>Raw Points</u>
a. will be used primarily or wholly outside of the MSA,	8
b. will be used as mobile only or mobile/control,	7
c. area of operation is more than 500 square miles,	6
d. jurisdiction serves a population of more than 50,000,	5
e. jurisdiction serves a population of fewer than 50,000,	4
f. area of operation is less than 500 square miles,	3
g. is used as a base station or mobile relay,	2

h. is used primarily or wholly within the MSA.

1

In order to accentuate band propagation characteristics in this prioritizing process, a weighted schedule will be used. The maximum number of raw points is 26 and the minimum number of raw points is 10. The weighted points are derived from the following schedule:

<u>Raw Points</u>	<u>Weighted Points</u>
26	100
25	95
24	90
23	85
22	80
21	75
20	70
19	65
18	60
17	55
16	50
15	45
14	40
13	35
12	30
11	25
10	20

- NOTES -

Note 1: Optimum HAAT = $d \times d/2$ where HAAT is in feet and d is the distance in miles to the Operating Area limit. HAAT shall be computed in accordance with Part 90.309(a)(4) of the FCC rules.

Note 2: Optimum ERP will be that ERP which provides an Alpha of 37 dBu for VHF high band or 39 dBu for UHF at the Operating Area limit. ($\text{Alpha} = 36.6 + 20 \log f + 20 \log d$) where f is the frequency in MHz and d is the distance in miles.

Note 3: In VHF high band, 37 dBu will be used and in the 450-470 MHz band, 39 dBu will be used for computing the Reliable Service Area. Part 22.504 of the FCC's rules applies.

9.0 SYSTEM TECHNICAL DESIGN REQUIREMENTS

9.1 Coverage Limitation - Antenna Height and Power

System coverage or service area is limited to geographical boundaries in order to maintain maximum frequency reuse within the region. The intent is to restrict the area of radio coverage to the actual jurisdictional boundaries. Agencies requesting new or additional channels will have their proposed system design evaluated by the Arizona Regional Review Committee. Any agency requesting a transmitter location not centrally located within its jurisdiction must include in their request adequate justification for such placement. Transmitter placement and antenna radiation patterns must be chosen to maintain radio system coverage within the jurisdictional boundaries of the entity making the application.

Agencies with service areas outside their political boundaries may request extended system coverage. Such requests for extended coverage must be accompanied by written justification, including an Intergovernmental Agreement covering all involved parties.

Extended coverage systems will not be authorized unless approved by the Arizona Regional Review Committee. Favorable consideration will be given to those extended coverage systems, which are made available for use by eligible entities other than the licensee.

A licensee may apply to utilize one of their authorized base/mobile frequencies as a point-to-point channel pair. This usage must be within the licensee's defined service area, or extended service area, if authorized. Channel loading requirements still apply to a channel used for point-to-point communications.

9.2 Definition of Service Area

Radio System Coverage for "Service Area" is defined as the boundary where predicted signal strength falls to 41 dBu. System parameters must be modified to make sure that the location where the actual service strength falls to 41 dBu is located near the actual service area boundaries, and the signal strength must fall to 40 dBu or below at a point three (3) miles beyond this point.

9.3 Calculation of Service Area

Three factors must be known to determine service area:

(1) the strength of the received signal, i.e., "received signal strength," (2) antenna height above average terrain (HAAT), and (3) the effective radiated power (ERP). Received signal strength has been defined (41dBu), leaving the other two factors that can be modified to achieve the desired coverage.

The resulting calculations determine the radius of coverage from the transmitting site. An example of these calculations is shown in the appendix.

It will be permissible for agencies requesting system authorization to determine the distance to the 41 dBu boundary on a radial-by-radial basis with a minimum of eight equally spaced radials at 45 degree intervals, beginning at true North, and plot the service area boundary based on these points. This plot should be submitted with the request for frequencies to show that radio coverage area outside the agencies' political boundary is being kept to a minimum. In any case, a minimum antenna height of 100 feet above ground elevation will be necessary to provide clearance with rooflines and treetops. Any agency with its service area radius of eight (8) miles - regardless of the size of its jurisdiction - providing interference protection for existing co-channel and adjacent channel systems is sufficient.

9.4 Responsibility for Calculations

It will be the responsibility of the requesting agency to calculate the proposed radio coverage service area and to validate the accuracy of the calculation. It is the requesting agency's responsibility to provide accurate system parameters and determine "Height Above Average Terrain" radials as specified in 90.309(a)(4) of the FCC's Rules and Regulations.

9.5 Proposed Service Area Exhibit

An agency shall provide, along with its request for frequencies, an exhibit showing the calculated radio coverage service area and the agency's jurisdictional boundaries as well as adjacent city, town, county and state boundaries. The boundaries must be drawn to scale on a 1:250,000 USGS map or suitable scaled computer drawn maps, with a title block including the name of the requesting agency, and the following transmitter information: antenna height, height above average terrain, effective radiated power, latitude, longitude, ground elevation of each transmitting site, and the distance to the service area boundary in miles, as calculated and indicated on the map.

9.6 Control Station (Limit on Effective Radiated Power)

Control/Base stations shall conform to the radio service area 41 dBu boundary requirement.

9.7 Frequency Reuse

Careful adherence to the system technical design requirements of this Plan will allow for maximum co-channel usage within this region. Because of the close proximity of adjacent channel frequencies, planning for adjacent channels must be similar to the considerations required for co-channel system design.

An agency requesting frequencies that have been previously licensed within this region or an adjacent region must demonstrate that the proposed system will provide, an "existing to proposed" signal margin of at least 25 dB at the closest point to the service area boundary of the existing system.

As part of this plan, distances between transmitters for co-channel reuse will not be held to seventy-(70) mile separation. Separation of co-channel transmitters will be determined by the coverage needs of the applicant, natural barriers for separation, antenna patterning and limited ERP's where possible. System tests and/or propagation studies may be provided to establish minimum distances for separation.

9.8 Adjacent Channel Design

Proposed systems must also be designed for minimum interference operation with adjacent channel licensees. The method of determination is identical to that of co-channel design as detailed elsewhere in this Plan, with the exception of the existing to proposed signal margin criteria. In the case of adjacent channel systems, this margin will be reduced to 15 dBu, except that if all adjacent agencies are meeting the narrowband 12.5 kHz emission mask, no adjacent channel protection will be required. All other calculations will remain the same.

It should be noted that the FCC has adopted technical standards for transmitters, which will reduce adjacent channel interference and permit closer geographically adjacent channel use. However, the FCC has not adopted improved receiver technical standards. It is the position of the Commission that receivers do not cause interference, nor do they threaten effective operation of the public safety network, as would substandard transmitters.

Because of the demand for limited spectrum, it is the intent of this Plan to provide efficient spectrum utilization within current technological capabilities. Agencies are encouraged to carefully consider the receiver selectivity specifications of any equipment to be purchased for use in the 821-824/866-869 MHz band. Poorly designed receivers may cause serious degradation of the system in areas using adjacent channels.

9.9 Absolute Mileage Separation

In any case where the radio service areas of adjacent channel systems are separated by at least 70 miles, or co-channel systems separated by 100 miles, the interference studies as set forth in this Plan are unnecessary because of free space and terrain losses.

9.10 Trunking Requirements

As referenced in the "National Plan", trunking is mandated for any new system with more than four channels in the 800 MHz band when located at a single transmitting site. The Arizona Regional Review Committee for mobile data use, encryption, and telemetry stations will consider requests for exceptions.

Other requests for waiver of the trunking requirement will be considered after presentation of evidence by the requesting agency. Approval to waive the trunking requirement will be based on the individual merits of the presentation, and will be subject to FCC final approval.

9.11 System Loading Requirements

An agency requesting a single frequency to replace a frequency currently in use, that will be turned back for reassignment, will not be required to meet loading requirements in order to obtain the new frequency. However, if the single frequency is not loaded to more than 50 units within three years after the license is granted, the frequency will be available for assignment to other agencies on a shared basis. Shared use of a frequency is not interference free. Users of single frequency systems will be required to provide the ARRC "confirmation of loading" for mobiles and portables as a method of validating system loading. This required updating shall be done annually until minimum loading has been completed.

This exception shall apply to agencies, which have only one system and a single frequency. Agencies requesting additional frequencies or having multiple systems shall comply with the loading standards as outlined in the loading tables or provide a "Traffic Loading Study" that meets the criteria as listed in the loading tables.

LOADING TABLES

<u>PUBLIC SAFETY</u>		<u>LOCAL GOVT./OTHER</u>	
Channels	Units/Channel	Channels	Units/Channel
1 - 5	70	1 - 5	80
6 - 10	75	6 - 10	90
11 - 15	80	11 - 15	105
16 - 20	85	16 - 20	120

9.12 System Engineering Requirements

All requests to the ARRC for frequencies must include sufficient data for the Committee to be able to determine proposed system operating parameters and shall be considered a system engineering exhibit.

The system-engineering exhibit must show:

1. Transmitter output power.
2. Type of cavities (duplexers, combiners and isolators) their insertion losses and all other associated losses.
3. Type of transmission line and associated loss (including jumpers).
4. Antenna model, gain, downtilt, pattern plots.
5. Ground Elevation above Mean Sea Level.
6. Antenna centerline AGL.
7. Height above average terrain of antenna centerline.
8. Effective Radiated Power as determined by items 1 through 4.
9. Additional "receiver only" locations.
10. CTCSS coding information on both conventional and trunked systems.

9.13 Average Elevation Exhibit

An additional exhibit showing the average elevation of the terrain of each of the eight main radials is required. If an outside source is used for the calculation of average terrain, a copy of this report may be substituted for the average elevation exhibit.

9.14 Public Switched Telephone Network (PSTN) Interconnect Use

The applicant of an 800 MHz trunked radio system may use an interconnect to Public Switched Telephone Network for systems implemented under this Regional Plan. However, the use of cellular telephones (or other telephone interconnect systems) for automatic interconnect to the Public Switched Telephone Network is recommended. Utilization of cellular telephone networks will not impact radio systems implemented under this plan.

9.15 Frequency Allocation List

The frequency allocations contained within this Plan are based on the current and projected needs and system loading through the year 2010. The basis for this frequency allocation listing was taken from a population growth study done by Mountain West Research, completed June 6, 1989. All cities in Arizona with a population above 10,000 in the 1980 Census were extrapolated using county population growth projections for the year 2010. Channel allocation per town is based on one channel per 25,000 population, with a minimum of two channels.(Appendix IV.)

All regional systems being installed by larger entities such as Counties or State are required to allow shared secondary use of the regional system for rural users. All large area systems are encouraged to solicit participation by the rural entities to better facilitate spectrum efficiency, and to provide better communications capability for the rural users. (Refer to Appendix IV for frequency listing.)

9.16 General Standards

All authorizations under this plan shall utilize equipment that complies with all applicable technical standards of the Federal Communications Commission.

10. APPENDICES

APPENDIX I Planning Committee Membership

APPENDIX II ARRC Bylaws

APPENDIX III NPSPAC Application Procedure

APPENDIX IV Frequency Allocation List

APPENDIX V Procedure for Determining Service Area

APPENDIX VI Adjacent Region Concurrence

APPENDIX VII Cellular Notifications

APPENDIX VIII Interagency Radio System Plan

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Peoria 85345

Kathleen Brennan
Pima Co. Sheriff's Office
P.O. Box 910
Tucson 85711

Ernie Levario
Kords Ambulance Service
P.O. Box 41866
Tucson 85717

Norm Hicks
Grand Canyon Airport
P.O. Box 3188
Grand Canyon 86023

Roger Snapp
El Dorado Hospital
1400 N. Wilmot
Tucson 85712

Joseph Mortimer
Cyprus Bagdad Copper Corp.
P.O. Box 245
Bagdad 86321

Gilbert Balcome
Surprise FD & PD
12604 Santa Fe
Surprise 85374

Bob Frey
City of Tempe
P.O. Box 5002
Tempe 85280-5002

Dep. Chief Curtis
Central Yavapai Fire Dist
8555 E. Yavapai Rd.
Prescott Valley 86314

Taylor Satala
Indian Health Service
P.O. Box 198
Peach Springs 86434

Karl Hartmetz
Buckskin FD
Rt. 2 Box 721
Parker 85344

Bob Ford
Entech Elec. Svcs.
4401 S. 36th St.
Phoenix 85040-2901

Gary Schmidt
Baptist Hospitals
6025 N. 20th Ave.
Phoenix 85015

Joseph E. Paulus
City of Cottonwood
827 N. Main
Cottonwood 86326

Jon D. Colvin
Chinle Community FD
P.O. Box 825
Chinle, Navajo Nation

Peter Meeks
City of Phoenix Comm.
2441 S. 22nd Ave.
Phoenix 85009-6917

Tony Tricoci
City of Mesa Comm.
P.O. Box 1466
Mesa 86211-1466

Mike Zakrajsek
City of Phoenix Computer Svcs.
620 W. Washington St.
Phoenix 85007

Don Pfohl
City of Mesa Comm.
P.O. Box 1466
Mesa 85211-1466

Werner Wolff
Oro Valley PD
680 W. Calle Concordia

Rose Johnson
South Tucson DPS
Tucson 85725

Ralph Clair
Youngtown Public Safety
12038 Clubhouse Square
Youngtown 85363

Jose Solarez
Town of Guadalupe
9050 S. Avenida del Yaqui
Guadalupe 85283

Bud Avery
Yuma PD
1500 1st Ave.
Yuma 85364

Skip Luttrell
Surprise PD
12604 Santa Fe
Surprise 85374

Jake Bender
Yavapai Co. Sheriff's Office
255 E. Gurly
Prescott 86301

Judy Robertson
Mesa General Hospital
515 N. Mesa Dr.
Mesa 85201

Pat Harvey
Fountain Hills Road District
16941 E. Pepperwood Circle
Fountain Hills 85268

Roy Heatherly
Mesa Lutheran hospital
525 W. Brown
Mesa 85201

Karl Hartmetz
Buckskin FD
Rt. 2 Box 721
Parker 85344

Mark Kishbaugh
Picture Rocks FD
6625 N. Sandario Rd.
Tucson 85743

Jim O'Melia
Motorola C & E
2737 W. Baseline Suite 22
Tempe 85283

Robert Schmidt
Apache Junction FD
3955 E. Superstition
Apache Junction 85219

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US DEA
3150 Windsor Suite 202
Yuma 85365

Leon D. Dame
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3195 S. Kinney Rd.
Tucson 85713

Max Grigg
General Electric
3020 E. Camelback Suite 365
Phoenix 85016

Eddie Jenkins
San Luis DPS
P.O. Box 3740
San Luis 85349

Victor Ortiz
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P.O. Box 1150
Nogales 85621

Audrey Martin
Tri Valley Ambulance
35810 Antelope Dr.
Welton 85356

Lee Roberts
AT & SF Railway Police
P.O. Box 4247
Phoenix 85030

APENDIX II - ARRC BYLAWS

BYLAWS OF THE ARIZONA REGIONAL REVIEW COMMITTEE

ARTICLE I - NAME AND PURPOSE OF ORGANIZATION

The name of this organization shall be the "Arizona Regional Review Committee", abbreviated "ARRC". This committee shall exist under authority of the Arizona Regional Public Safety Plan (ARPSP), as adopted by the Federal Communications Commission (FCC) under PR Docket 91-143, on September 4, 1991.

The purpose of this committee is to function as a frequency coordinating and advisory body for 800 MHz Public Safety channels approved by the FCC under the National Public Safety Advisory Committee, known as the NPSPAC plan. This plan was adopted by the FCC on November 24, 1987. It shall also function as a coordinator and clearinghouse for reallocated channels, known as "give backs" in other Public Safety spectrum outside the NPSPAC channels. All functions of this committee shall be in accordance with the ARPSP, as amended.

ARTICLE II - COMMITTEE MEMBERSHIP

A. Composition

First election of the 11 member ARRC was conducted at an organizational meeting held on August 21, 1991. These members shall remain on the Committee until resignation, removal for cause, or the member leaves their current public safety eligible agency. Removal for cause shall require a majority vote of the quorum at an open general meeting.

B. Member Replacement

A vacancy on the Committee shall be filled through nominations at the next regular scheduled, publicized, open public meeting, and voted upon thereat. A majority of votes of the voting agencies (one vote per eligible agency) shall be required to elect to the Committee.

C. Removal for Cause

Members may be removed for cause for non-participation under the following guidelines:

1. Removal

Members will be required to attend one-half of the meetings of the Committee or their respective subcommittee through the year. Attendance at fewer than one-half of these meetings shall be cause for review of participation by the Executive Committee during its meeting prior to the July ARRC meeting.

Should the Executive Committee find that a member has not been participating at the level required the Excomm will report to the general committee at the July meeting and schedule an open public meeting to allow voting for the removal for cause of the non-participating member. Prior to this meeting the ARRC Chairperson shall correspond with the member in question, informing the member of the committee's intention to remove for cause and advising the member of the date of the meeting at which the action will take place.

2. Filling the Vacancy

The vacancy created by removal of a member for cause shall be filled, if possible, at the same open public meeting at which the removal is approved.

Nominations for the vacancy will be taken from the floor as stipulated in Article III.C.1.b.

ARTICLE III - OFFICERS OF THE ARRC

A. Composition

The officers of the ARRC shall consist of a Chairperson, Vice-Chairperson and combined Secretary/Treasurer.

B. Election of Officers

Elections shall be held annually at the regularly scheduled meeting of the ARRC in September. Nominations shall be made at the regular scheduled meeting in July.

C. Election Procedures

1. Nominations

a) Nominations Committee

A nomination sub-committee shall be appointed, with the immediate past chairperson of the ARRC as chairperson, or in the event of their unavailability, the previous past chairperson. If no past chairperson is available, the Executive Committee shall serve as the nominating subcommittee.

b) Floor nominations

Nominations may also be made from the floor at the nominations meeting. Nominees must be present at this meeting and have the commitment of their sponsor to fully participate.

2. Election Rules

The election shall be conducted openly, with a majority of ARRC quorum member votes required for election.

ARTICLE IV - OPERATING RULES OF THE ARRC

A. Meetings

Regular meetings of the ARRC shall be scheduled in coordination with the scheduled meetings of the Arizona APCO, Inc. chapter. In addition, two semi-annual meetings scheduled in conjunction with Arizona APCO shall be designated as "Open Public Meetings" with open participation from the public safety community. Each public safety entity shall be apportioned one vote at each open, public meeting. Designated alternatives and representatives shall be identified prior to the meeting.

B. Conduct of Meetings

1. Presiding

Meetings shall be conducted at the appointed time and place by the Chairperson, or in their absence, the Vice-Chairperson, or in their absence, the Secretary/Treasurer.

2. Procedural

Meetings shall be conducted according to Robert's Rules of Order.

3. Agenda

As a minimum, a financial statement shall be read to the membership, and subcommittee reports presented. Applications for NPSPAC frequencies which have been previously reviewed and approved by the appropriate subcommittees shall be voted upon, and approved by a two-thirds vote of the quorum present.

4. Quorum

The ARRC may conduct business at any publicized, scheduled meeting, with a quorum consisting of a minimum of six members present, which shall include at least one officer. Voting by proxy, with written authorization, shall be permitted.

5. Voting via Telecommunications

In special situations relating to license applications, vote by telephone and confirmed by fax or e-mail may be made provided ALL members are contacted by voice and fax or e-mail, and given a chance to respond with a vote. A two-thirds vote of all members is required for approval of the issue. Results of the telephone/fax/e-mail vote must be recorded in the minutes of the following meeting.

ARTICLE V - EXECUTIVE COMMITTEE

A. Composition

The Executive Committee, to be known as the "Excomm", shall consist of the current Chairperson, Vice-Chairperson, Secretary/Treasurer, and immediate past Chairperson. Subcommittee chairpersons may be asked to attend meetings of the Excomm as required.

B. Meetings

Meetings shall be called a minimum of three times annually for the purpose of conducting business of the ARRC, and for review of subcommittee operations and work. The meetings shall be called and scheduled by the ARRC chairperson.

ARTICLE VI - SUBCOMMITTEES

A. Composition of Standing Subcommittees

There shall be five (5)-standing subcommittees of the ARRC. These shall include:

1. 800 MHz NPSPAC Application Review
2. VHF/UHF/800 MHz Frequency Reassignment
3. Bylaw Review
4. Nomination Recommendations (See Article III.D.1.a)
5. Regional/Interregional Interoperability Coordination

B. 800 MHz NPSPAC Application Subcommittee

1. Function

The NPSPAC Application Subcommittee shall meet at least monthly if applications are pending. The subcommittee shall make recommendations on applications in a timely manner to the ARRC for voting upon at the next regularly scheduled ARRC meeting. Evaluations shall be performed in a manner consistent with the criteria established in the Arizona Regional Public Safety Plan (ARPSP), as amended.

2. Necessary Delays

Application evaluations may be delayed if, in the subcommittee's opinion, insufficient information was provided to make a determination. In such case, the subcommittee chairperson shall draft a letter to the applicant within ten (10) days of the initial subcommittee review, of the insufficiency, and shall request specific information necessary to make a determination. If such requested information is not provided within thirty (30) days of the mailing of such letter, the application shall be deemed defective, and returned to the applicant. Approval recommendations shall require a unanimous vote of the subcommittee members present at the evaluation meeting. Rejection of an application may be appealed within forty-five (45) days as per paragraph 7.7 of the ARPSP.

3. Mixed Frequency Applications

The subcommittee shall return applications for systems requiring both NPSPAC and non-NPSPAC frequencies with the suggestion that the applicant request only NPSPAC frequencies. The subcommittee shall actively work with the applicant agency to create a system utilizing NPSPAC frequencies.

4. Conflict of Interest

Any ARRC member shall be disqualified from evaluating and/or voting on an application submitted by their sponsor political subdivision, or non-political entity. In this case, the member-applicant shall act only as an advisor, providing necessary information upon which to make a recommendation, and shall not be considered a member of the subcommittee or the ARRC for voting purposes.

4. Approval

Recommendation of the subcommittee shall be voted upon at the next regularly scheduled meeting of the ARRC, and shall be approved with a two-thirds vote of the quorum.

C. VHF/UHF/800 MHz Frequency Reassignment Subcommittee

1. Function

This subcommittee shall meet at least monthly if applications for "give back" frequencies are pending. The subcommittee shall keep a chronological listing of agency requests for "give back" channels. A statement of need shall accompany each request for channels. A separate list shall be maintained for each primary public safety frequency band.

2. Evaluations

The subcommittee shall evaluate such applications on their merits, in conformance with the ARPSP, and make a recommendation in a timely manner to the ARRC when frequencies become available. Where there are multiple applications with relatively equal merit, the subcommittee shall give preference to the longest standing application.

3. Necessary Delays

Recommendations from the Subcommittee to the ARRC may be delayed if there is insufficient data submitted to make a determination. The same procedure shall be followed as in Article VI.B.2. If insufficient information is forthcoming, an application for a "give back" channel may be dismissed and returned to the applicant.

4. Conflict of Interest

Any ARRC member shall be disqualified from evaluating and/or voting on an application submitted by their sponsor political subdivision, or non-political entity. In this case, the member-applicant shall act only as an advisor, providing necessary information upon which to make a recommendation, and shall not be considered a member of the subcommittee or the ARRC for voting purposes.

5. Approval

Recommendation for approval by the subcommittee shall be unanimous, and shall be voted upon at the next regularly scheduled meeting of the ARRC, and shall be approved by a two-thirds vote of the quorum.

D. Bylaw Review Subcommittee

The Bylaw Review Subcommittee shall meet at least semi-annually to review any needed changes to the Bylaws, and draft such changes for presentation to the Excomm.

E. Nominations Recommendation Subcommittee

The Nominations Recommendation Subcommittee shall meet annually prior to the nominations meeting for Excomm officers, and shall present a selected slate of candidates as nominees for Chairperson, Vice-Chairperson, and Secretary/Treasurer to the ARRC membership at the nominations meeting.

F. Regional/Interregional interoperability Subcommittee

1. Meetings

The Regional/Interregional interoperability Subcommittee shall meet monthly, if there is an application for NPSPAC channels pending.

2. Common Calling/Interoperability Recommendations

The subcommittee shall make a recommendation as to whether an applicant should be required to place in service "Common Calling" and/or "Interoperability" stations as a condition of application approval. Specific recommendations shall be made in writing to the ARRC Chairperson. Such recommendation shall be made a part of the final vote by the ARRC for approval of a NPSPAC application.

3. License Monitoring

The subcommittee shall monitor licensing activity in surrounding regions to ensure compatibility of frequency usage, and coordinate "Common Calling" and "Interoperability" installation and monitoring.

4. Border Compatibility

The subcommittee shall also monitor FCC Regulations and coordinate with the nation of Mexico to ensure compatibility of channel usage and "Common Calling" and "Interoperability" along the U.S./Arizona and Mexico border.

G. Subcommittee Chairpersons

The chairpersons of the standing subcommittees shall be appointed by the ARRC Chairperson, with concurrence of the majority of the Excomm present at a scheduled Executive Committee meeting.

H. Membership

There shall be a minimum of three (3) members on the "800 MHz NPSPAC Application Review" and "VHF/UHF/800 MHz Frequency Reassignment" standing subcommittees, including the chairperson. Other subcommittees shall consist of a chairperson and any other members the chairperson deems appropriate. Members of all standing committees may be chosen by the subcommittee chairperson, with the approval of the ARRC chairperson.

A minimum of two (2) members of the "800 MHz NPSPAC Application Review" and "VHF/UHF/800 MHz Frequency Reassignment" subcommittee, including the chairperson, are required to be in attendance at those subcommittee meetings. This shall constitute a quorum for those subcommittees.

I. Ad-Hoc Subcommittees

1. Ad-Hoc Subcommittee Creation

Ad-Hoc subcommittees may be created at any time for such purpose as the Excomm deems necessary. Ad-Hoc subcommittees shall be appointed for a specific time period, but not to exceed one year in duration.

2. Composition

Ad-Hoc subcommittee chairpersons shall be appointed by the ARRC chairperson, with the consent of a majority of the Excomm present at a regularly scheduled meeting. An Ad-Hoc subcommittee may consist of any number of members.

ARTICLE VII - FUNDING

A. Funding Sources

The ARRC shall derive its funding indirectly from fees collected from applicants, distributed through the Arizona Chapter of APCO, Inc. In the event that such funding is not available, or is insufficient for the ARRC to carry out its assigned function, voluntary contributions may be requested from pending applications desiring assignment of frequencies.

Arizona APCO, Inc. has pledged to fund the ARRC up to \$300 per fiscal year. Funds will be made available to the Secretary/Treasurer as needed by the APCO Treasurer.

B. Unavailability of Funding

Should there be an insufficiency of funds to carry out the functions of the ARRC, all applications pending shall be submitted to APCO without a recommendation and operations of the ARRC shall cease until adequate funding becomes available.

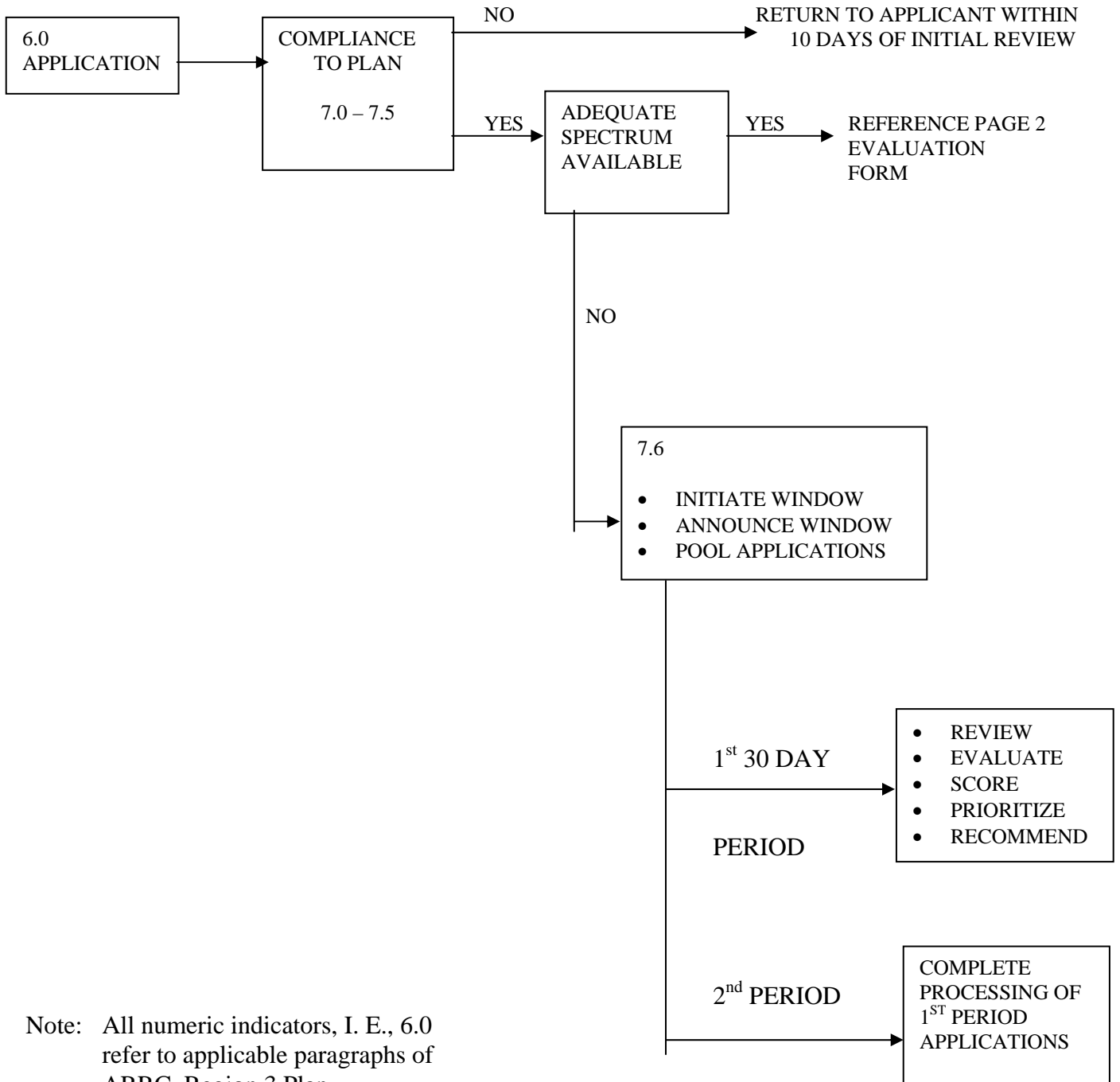
ARTICLE VIII - MODIFICATION OF BYLAWS

These Bylaws may be modified upon a two-thirds vote of the ARRC. Written copies of the proposed Bylaw amendment shall be presented to all ARRC members at least thirty (30) days prior to the next regularly scheduled meeting. A statement of recommendation, including both a majority and minority report if necessary, from the Excomm, shall be included with the mailing.

Voting on the proposed amendment shall take place at the next regularly scheduled meeting, provided a quorum is present. The Bylaw amendment shall become effective on the first day of the following month.

APPENDIX III - NPSPAC APPLICATION PROCEDURE

800 MHz NPSPAC APPLICATION PROCEDURE



Note: All numeric indicators, I. E., 6.0 refer to applicable paragraphs of ARRC, Region 3 Plan.

EVALUATION FORM

Agency: _____

Date Received: _____

Date Reviewed: _____

Date Approved: _____

ARRC Chairperson: _____

EVALUATION FORM PAGE 2

RECOMMENDED APPROVAL TO ARRC:

- Regional inter-operability concur (4.0)
- Eligible for Arizona Channel 6 Common Calling Channel (4.5)
- Inter-regional inter-operability concur (5.0)
- Applicable coordination forms (6.0, 1)

SYSTEM DESIGN INFORMATION (6.0, 2)

- Antenna height and power (9.1)
- Definition of service area (9.2)
- Calculation of service area (9.3)
- Service area map (9.5)
- Control station requirements (9.6)
- Adjacent channel design (9.8)
- Trunking requirements (9.10)
- System loading requirements (9.11)

SYSTEM ENGINEERING EXHIBIT (9.12)

- Transmit output power
 - I/M equipment and losses
 - Transmission lines and losses
 - Antenna model and gain
 - Ground elevation above MSL
 - Antenna centerline AGL
 - HAAT of antenna centerline
 - Effective radiated power
 - Receiver only locations
 - CTCSS coding information
-
- Cellular telephone use (9.14)
 - Frequency allocation (9.15)
 - Funding statement (6.0, 3)
 - Proposed implementation schedule (6.0, 4)
 - Justification of number of channels (6.0, 5)
 - Existing frequency statement (6.0, 6)
 - Statement of understanding (6.0, 7)
 - Frequency re-use/givebacks (6.0, 8)
 - Co-channel interference (App V)
 - Adjacent-channel interference (App V)

WHEN LICENSED:

- Track construction
- License data and call
- RFP deadline (12 mo)
- RFP award (12 mo)
- System turn-on
- System acceptance
- Channel loading (3-5 yrs)

APPENDIX IV - FREQUENCY ALLOCATION LIST

Revised 8/07

Channel	Mobile Frequency	Base Frequency	Metro Phoenix User	Non Metro Phoenix User
601	821.0125 MHz	866.0125 MHz	NTL. Calling AIRSAZ	NTL. Calling (AIRSAZ)
602	821.0375 MHz	866.0375 MHz	Arizona 8TAC5	Arizona 8TAC5
603	821.0500 MHz	866.0500 MHz	Guard Band	Guard Band
604	821.0625 MHz	866.0625 MHz	Maricopa Co.	
605	821.0750 MHz	866.0750 MHz	Maricopa Co.	Tucson, Pima Co.
606	821.0875 MHz	866.0875 MHz	Guard Band	Flagstaff
607	821.1000 MHz	866.1000 MHz	CAP	CAP
608	821.1125 MHz	866.1125 MHz	Guard Band	
609	821.1250 MHz	866.1250 MHz	Maricopa Co.	
610	821.1375 MHz	866.1375 MHz	Maricopa Co.	Yuma City, Tucson, Pima Co.
611	821.1500 MHz	866.1500 MHz	Maricopa Co.	
612	821.1625 MHz	866.1625 MHz	Maricopa Co.	Tucson,
613	821.1750 MHz	866.1750 MHz	Maricopa Co.	
614	821.1875 MHz	866.1875 MHz	Maricopa Co.	Tucson
615	821.2000 MHz	866.2000 MHz	Maricopa Co.	
616	821.2125 MHz	866.2125 MHz	Maricopa Co.	Tucson
617	821.2250 MHz	866.2250 MHz	Maricopa Co.	
618	821.2375 MHz	866.2375 MHz	Maricopa Co.	Tucson
619	821.2500 MHz	866.2500 MHz	Maricopa Co.	
620	821.2625 MHz	866.2625 MHz	Maricopa Co.	
621	821.2750 MHz	866.2750 MHz	Maricopa Co.	
622	821.2875 MHz	866.2875 MHz	Maricopa Co.	
623	821.3000 MHz	866.3000 MHz	Maricopa Co.	
624	821.3125 MHz	866.3125 MHz	Maricopa Co. Note 2	Tucson, Pima Co.
625	821.3250 MHz	866.3250 MHz	Maricopa Co.	
626	821.3375 MHz	866.3375 MHz	Maricopa Co.	
627	821.3500 MHz	866.3500 MHz	Maricopa Co.	
628	821.3625 MHz	866.3625 MHz	Maricopa Co.	
629	821.3750 MHz	866.3750 MHz	Guard Band	
630	821.3875 MHz	866.3875 MHz	CAP	CAP
631	821.4000 MHz	866.4000 MHz	Guard Band	
632	821.4125 MHz	866.4125 MHz	CAP	CAP
633	821.4250 MHz	866.4250 MHz	Guard Band	
634	821.4375 MHz	866.4375 MHz	Maricopa Co.	Tucson
635	821.4500 MHz	866.4500 MHz	Maricopa Co.	
636	821.4625 MHz	866.4625 MHz	Maricopa Co. Note 1	Guard Band
637	821.4750 MHz	866.4750 MHz	Guard Band	State of Arizona
638	821.4875 MHz	866.4875 MHz	State of Arizona	Guard Band
639	821.5125 MHz	866.5125 MHz	8TAC1	8TAC1
640	821.5375 MHz	866.5375 MHz	State of Arizona	State of Arizona
641	821.5500 MHz	866.5500 MHz	Guard Band	Guard Band

642	821.5625 MHz	866.5625 MHz	Maricopa Co.	Tucson
643	821.5750 MHz	866.5750 MHz	Maricopa Co.	
644	821.5875 MHz	866.5875 MHz	Maricopa Co.	Tucson
645	821.6000 MHz	866.6000 MHz	Maricopa Co.	Coconino Co.
646	821.6125 MHz	866.6125 MHz	Maricopa Co.	Tucson
647	821.6250 MHz	866.6250 MHz	Maricopa Co. Note 2	
648	821.6375 MHz	866.6375 MHz	Maricopa Co.	
649	821.6500 MHz	866.6500 MHz	Maricopa Co.	
650	821.6625 MHz	866.6625 MHz	Maricopa Co.	
651	821.6750 MHz	866.6750 MHz	Maricopa Co.	Tucson, Pima Co.
652	821.6875 MHz	866.6875 MHz	Maricopa Co.	
653	821.7000 MHz	866.7000 MHz	Maricopa Co.	
654	821.7125 MHz	866.7125 MHz	Maricopa Co.	
655	821.7250 MHz	866.7250 MHz	Maricopa Co.	
656	821.7375 MHz	866.7375 MHz	Maricopa Co.	
657	821.7500 MHz	866.7500 MHz	Maricopa Co.	
658	821.7625 MHz	866.7625 MHz	Maricopa Co.	
659	821.7750 MHz	866.7750 MHz	Maricopa Co.	
660	821.7875 MHz	866.7875 MHz	Maricopa Co.	
661	821.8000 MHz	866.8000 MHz	Maricopa Co.	
662	821.8125 MHz	866.8125 MHz	Maricopa Co.	Tucson
663	821.8250 MHz	866.8250 MHz	Maricopa Co.	
664	821.8375 MHz	866.8375 MHz	Maricopa Co.	
665	821.8500 MHz	866.8500 MHz	Maricopa Co.	
666	821.8625 MHz	866.8625 MHz	Maricopa Co.	Tucson
667	821.8750 MHz	866.8750 MHz	Guard Band	
668	821.8875 MHz	866.8875 MHz	CAP	CAP
669	821.9000 MHz	866.9000 MHz	Guard Band	
670	821.9125 MHz	866.9125 MHz	Phoenix, Mesa Note 3	
671	821.9250 MHz	866.9250 MHz	Phoenix, Mesa Note 3	Tucson, Pima Co.
672	821.9375 MHz	866.9375 MHz	Phoenix, Mesa Note 3	
673	821.9500 MHz	866.9500 MHz	Phoenix, Mesa Note 3	Tucson, Pima Co.
674	821.9625 MHz	866.9625 MHz	Phoenix, Mesa Note 3	
675	821.9750 MHz	866.9750 MHz	Phoenix, Mesa Note 3	Guard band
676	821.9875 MHz	866.9875 MHz	Phoenix, Mesa Note 3	State of Arizona
677	822.0125 MHz	867.0125 MHz	8TAC2	8TAC2
678	822.0375 MHz	867.0375 MHz	Phoenix, Mesa Note 3	State of Arizona
679	822.0500 MHz	867.0500 MHz	Phoenix, Mesa Note 3	Guard Band
680	822.0625 MHz	867.0625 MHz	Phoenix, Mesa Note 3	
681	822.0750 MHz	867.0750 MHz	Phoenix, Mesa Note 3	
682	822.0875 MHz	867.0875 MHz	Phoenix, Mesa Note 3	
683	822.1000 MHz	867.1000 MHz	Phoenix, Mesa Note 3	Tucson, Pima Co.
684	822.1125 MHz	867.1125 MHz	Phoenix, Mesa Note 3	
685	822.1250 MHz	867.1250 MHz	Phoenix, Mesa Note 3	Tucson, Pima Co.
686	822.1375 MHz	867.1375 MHz	Phoenix, Mesa Note 3	

687	822.1500 MHz	867.1500 MHz	Phoenix, Mesa Note 3	
688	822.1625 MHz	867.1625 MHz	Phoenix, Mesa Note 3	
689	822.1750 MHz	867.1750 MHz	Phoenix, Mesa Note 3	
690	822.1875 MHz	867.1875 MHz	Phoenix, Mesa Note 3	
691	822.2000 MHz	867.2000 MHz	Phoenix, Mesa Note 3	Tucson, Pima Co.
692	822.2125 MHz	867.2125 MHz	Phoenix, Mesa Note 3	
693	822.2250 MHz	867.2250 MHz	Phoenix, Mesa Note 3	Tucson, Pima Co.
694	822.2375 MHz	867.2375 MHz	Phoenix, Mesa Note 3	
695	822.2500 MHz	867.2500 MHz	Phoenix, Mesa Note 3	
696	822.2625 MHz	867.2625 MHz	Phoenix, Mesa Note 3	
697	822.2750 MHz	867.2750 MHz	Phoenix, Mesa Note 3	
698	822.2875 MHz	867.2875 MHz	Phoenix, Mesa Note 3	
699	822.3000 MHz	867.3000 MHz	Phoenix, Mesa Note 3	
700	822.3125 MHz	867.3125 MHz	Phoenix, Mesa Note 3	
701	822.3250 MHz	867.3250 MHz	Phoenix, Mesa Note 3	
702	822.3375 MHz	867.3375 MHz	Phoenix, Mesa Note 3	
703	822.3500 MHz	867.3500 MHz	Phoenix, Mesa Note 3	Tucson, Pima Co.
704	822.3625 MHz	867.3625 MHz	Phoenix, Mesa Note 3	
705	822.3750 MHz	867.3750 MHz	Phoenix, Mesa Note 3	Tucson, Pima Co.
706	822.3875 MHz	867.3875 MHz	Phoenix, Mesa Note 3	
707	822.4000 MHz	867.4000 MHz	Phoenix, Mesa Note 3	
708	822.4125 MHz	867.4125 MHz	Phoenix, Mesa Note 3	
709	822.4250 MHz	867.4250 MHz	Phoenix, Mesa Note 3	
710	822.4375 MHz	867.4375 MHz	Phoenix, Mesa Note 3	
711	822.4500 MHz	867.4500 MHz	Phoenix, Mesa Note 3	Tucson, Pima Co.
712	822.4625 MHz	867.4625 MHz	Phoenix, Mesa Note 1, 3	Guard Band
713	822.4750 MHz	867.4750 MHz	Guard Band	State of Arizona
714	822.4875 MHz	867.4875 MHz	State of Arizona	Guard Band
715	822.5125 MHz	867.5125 MHz	8TAC3	8TAC3
716	822.5375 MHz	867.5375 MHz	State of Arizona	State of Arizona
717	822.5500 MHz	867.5500 MHz	Guard Band	Guard Band
718	822.5625 MHz	867.5625 MHz	CAP	CAP
719	822.5750 MHz	867.5750 MHz	Guard Band	
720	822.5875 MHz	867.5875 MHz	Phoenix, Mesa Note 3	
721	822.6000 MHz	867.6000 MHz	Phoenix, Mesa Note 3	
722	822.6125 MHz	867.6125 MHz	Phoenix, Mesa Note 3	
723	822.6250 MHz	867.6250 MHz	Phoenix, Mesa Note 3	
724	822.6375 MHz	867.6375 MHz	Phoenix, Mesa Note 3	
725	822.6500 MHz	867.6500 MHz	Phoenix, Mesa Note 3	
726	822.6625 MHz	867.6625 MHz	Phoenix, Mesa Note 3	
727	822.6750 MHz	867.6750 MHz	Phoenix, Mesa Note 3	
728	822.6875 MHz	867.6875 MHz	Phoenix, Mesa Note 3	
729	822.7000 MHz	867.7000 MHz	Phoenix, Mesa Note 3	
730	822.7125 MHz	867.7125 MHz	Phoenix, Mesa Note 3	

731	822.7250 MHz	867.7250 MHz	Phoenix, Mesa Note 3	
732	822.7375 MHz	867.7375 MHz	Phoenix, Mesa Note 3	
733	822.7500 MHz	867.7500 MHz	Phoenix, Mesa Note 3	
734	822.7625 MHz	867.7625 MHz	Phoenix, Mesa Note 3	
735	822.7750 MHz	867.7750 MHz	Phoenix, Mesa Note 3	
736	822.7875 MHz	867.7875 MHz	Phoenix, Mesa Note 3	
737	822.8000 MHz	867.8000 MHz	Phoenix, Mesa Note 3	
738	822.8125 MHz	867.8125 MHz	Phoenix, Mesa Note 3	
739	822.8250 MHz	867.8250 MHz	Phoenix, Mesa Note 3	
740	822.8375 MHz	867.8375 MHz	Phoenix, Mesa Note 3	
741	822.8500 MHz	867.8500 MHz	Phoenix, Mesa Note 3	Tucson, Pima Co.
742	822.8625 MHz	867.8625 MHz	Phoenix, Mesa Note 3	
743	822.8750 MHz	867.8750 MHz	Phoenix, Mesa Note 3	Tucson, Pima Co.
744	822.8875 MHz	867.8875 MHz	Phoenix, Mesa Note 3	
745	822.9000 MHz	867.9000 MHz	Phoenix, Mesa Note 3	
746	822.9125 MHz	867.9125 MHz	Phoenix, Mesa Note 3	
747	822.9250 MHz	867.9250 MHz	Phoenix, Mesa Note 3	Tucson, Pima Co.
748	822.9375 MHz	867.9375 MHz	Phoenix, Mesa Note 3	
749	822.9500 MHz	867.9500 MHz	Phoenix, Mesa Note 3	
750	822.9625 MHz	867.9625 MHz	Phoenix, Mesa Note 3	
751	822.9750 MHz	867.9750 MHz	Phoenix, Mesa Note 3	Guard Band
752	822.9875 MHz	867.9875 MHz	Phoenix, Mesa Note 3	State of Arizona
753	823.0125 MHz	868.0125 MHz	8TAC4	8TAC4
754	823.0375 MHz	868.0375 MHz	Phoenix, Mesa Note 3	State of Arizona
755	823.0500 MHz	868.0500 MHz	Phoenix, Mesa Note 3	Guard Band
756	823.0625 MHz	868.0625 MHz	Phoenix, Mesa Note 3	
757	823.0750 MHz	868.0750 MHz	Phoenix, Mesa Note 3	
758	823.0875 MHz	868.0875 MHz	Phoenix, Mesa Note 3	
759	823.1000 MHz	868.1000 MHz	Guard Band	
760	823.1125 MHz	868.1125 MHz	CAP	CAP
761	823.1250 MHz	868.1250 MHz	Guard Band	
762	823.1375 MHz	868.1375 MHz	Phoenix, Mesa Note 3	
763	823.1500 MHz	868.1500 MHz	Phoenix, Mesa Note 3	Tucson, Pima Co.
764	823.1625 MHz	868.1625 MHz	Phoenix, Mesa Note 3	
765	823.1750 MHz	868.1750 MHz	Phoenix, Mesa Note 3	Tucson, Pima Co.
766	823.1875 MHz	868.1875 MHz	Phoenix, Mesa Note 3	
767	823.2000 MHz	868.2000 MHz	Phoenix, Mesa Note 2, 3	Tucson, Pima Co.
768	823.2125 MHz	868.2125 MHz	Phoenix, Mesa Note 3	
769	823.2250 MHz	868.2250 MHz	Phoenix, Mesa Note 3	
770	823.2375 MHz	868.2375 MHz	Phoenix, Mesa Note 3	
771	823.2500 MHz	868.2500 MHz	Phoenix, Mesa Note 3	
772	823.2625 MHz	868.2625 MHz	Phoenix, Mesa Note 3	
773	823.2750 MHz	868.2750 MHz	Phoenix, Mesa Note 3	
774	823.2875 MHz	868.2875 MHz	Phoenix, Mesa Note 3	Tucson, Pima Co.

775	823.3000 MHz	868.3000 MHz	Phoenix, Mesa Note 3	
776	823.3125 MHz	868.3125 MHz	Phoenix, Mesa Note 3	Tucson, Pima Co.
777	823.3250 MHz	868.3250 MHz	Phoenix, Mesa Note 3	
778	823.3375 MHz	868.3375 MHz	Phoenix, Mesa Note 3	
779	823.3500 MHz	868.3500 MHz	Phoenix, Mesa Note 3	
780	823.3625 MHz	868.3625 MHz	Phoenix, Mesa Note 3	Coconino
781	823.3750 MHz	868.3750 MHz	Phoenix, Mesa Note 3	Tucson
782	823.3875 MHz	868.3875 MHz	Phoenix, Mesa Note 3	
783	823.4000 MHz	868.4000 MHz	Phoenix, Mesa Note 3	
784	823.4125 MHz	868.4125 MHz	Phoenix, Mesa Note 3	
785	823.4250 MHz	868.4250 MHz	Phoenix, Mesa Note 3	Tucson
786	823.4375 MHz	868.4375 MHz	Phoenix, Mesa Note 3	
787	823.4500 MHz	868.4500 MHz	Phoenix, Mesa Note 2, 3	Tucson, Pima Co.
788	823.4625 MHz	868.4625 MHz	Phoenix, Mesa Note 3	
789	823.4750 MHz	868.4750 MHz	Phoenix, Mesa Note 3	
790	823.4875 MHz	868.4875 MHz	Phoenix, Mesa Note 3	
791	823.5000 MHz	868.5000 MHz	Phoenix, Mesa Note 3	
792	823.5125 MHz	868.5125 MHz	Phoenix, Mesa Note 3	
793	823.5250 MHz	868.5250 MHz	Phoenix, Mesa Note 3	
794	823.5375 MHz	868.5375 MHz	Phoenix, Mesa Note 3	Tucson
795	823.5500 MHz	868.5500 MHz	Guard Band	
796	823.5625 MHz	868.5625 MHz	CAP	CAP
797	823.5750 MHz	868.5750 MHz	Guard Band	
798	823.5875 MHz	868.5875 MHz	Guard Band	
799	823.6000 MHz	868.6000 MHz	CAP	CAP
800	823.6125 MHz	868.6125 MHz	Guard Band	
801	823.6250 MHz	868.6250 MHz	Phoenix, Mesa Note 3	Tucson
802	823.6375 MHz	868.6375 MHz	Phoenix, Mesa Note 3	
803	823.6500 MHz	868.6500 MHz	Phoenix, Mesa Note 3	Tucson, Yuma City
804	823.6625 MHz	868.6625 MHz	Phoenix, Mesa Note 3	
805	823.6750 MHz	868.6750 MHz	Phoenix, Mesa Note 3	Tucson, Flagstaff, Yuma City
806	823.6875 MHz	868.6875 MHz	Phoenix, Mesa Note 3	
807	823.7000 MHz	868.7000 MHz	Phoenix, Mesa Note 3	
808	823.7125 MHz	868.7125 MHz	Phoenix, Mesa Note 2, 3	Tucson, Pima Co.
809	823.7250 MHz	868.7250 MHz	Phoenix, Mesa Note 3	
810	823.7375 MHz	868.7375 MHz	Phoenix, Mesa Note 3	Tucson, Pima Co.
811	823.7500 MHz	868.7500 MHz	Guard Band	
812	823.7625 MHz	868.7625 MHz	Maricopa Co.	
813	823.7750 MHz	868.7750 MHz	Maricopa Co.	
814	823.7875 MHz	868.7875 MHz	Maricopa Co.	Tucson, Pima Co.
815	823.8000 MHz	868.8000 MHz	Maricopa Co.	
816	823.8125 MHz	868.8125 MHz	Maricopa Co.	
817	823.8250 MHz	868.8250 MHz	Maricopa Co.	

818	823.8375 MHz	868.8375 MHz	Maricopa Co.	
819	823.8500 MHz	868.8500 MHz	Maricopa Co.	Tucson
820	823.8625 MHz	868.8625 MHz	Maricopa Co.	
821	823.8750 MHz	868.8750 MHz	Maricopa Co.	Tucson, Yuma City
822	823.8875 MHz	868.8875 MHz	Maricopa Co.	
823	823.9000 MHz	868.9000 MHz	Maricopa Co.	Tucson, Yuma City
824	823.9125 MHz	868.9125 MHz	Maricopa Co.	
825	823.9250 MHz	868.9250 MHz	Maricopa Co.	Tucson, Flagstaff
826	823.9375 MHz	868.9375 MHz	Maricopa Co.	
827	823.9500 MHz	868.9500 MHz	Maricopa Co.	
828	823.9625 MHz	868.9625 MHz	Guard Band	Guard Band
829	823.9750 MHz	868.9750 MHz	State of Arizona	State of Arizona
830	823.9875 MHz	868.9875 MHz	Guard Band	Guard Band

Notes:

Note 1: These channels will require specific coordination with the State of Arizona.

Note 2: Channels 624, 647, 767, 787, and 808 were allocated to Scottsdale. Their 5 channels are incorporated in the allocations for Maricopa County by an agreement with Maricopa County.

Note 3: The proposed Phoenix/Mesa allocation is to be considered a design pool, which includes the existing Phoenix MDT system and the new P25 trunked radio network. The participants in the P25 trunked radio network will include (but is not limited to): Phoenix, Mesa, Glendale, Peoria, Tempe, Goodyear, Apache Junction, Gilbert, Salt River, Gila River, Avondale, El Mirage, Guadalupe, Laveen, Daisey Mtn., Surprise, Tolleson, The Sun Cities, Sun Lakes, and Buckeye.

Allocated Channels by User

PHOENIX/MESA

670	671	672	673	674	675	676	678	679	680	681	682
683	684	685	686	687	688	689	690	691	692	693	694
695	696	697	698	699	700	701	702	703	704	705	706
707	708	709	710	711	712	720	721	722	723	724	725
726	727	728	729	730	731	732	733	734	735	736	737
738	739	740	741	742	743	744	745	746	747	748	749
750	751	752	754	755	756	757	758	762	763	764	765
766	767	768	769	770	771	772	773	774	775	776	777
778	779	780	781	782	783	784	785	786	787	788	789
790	791	792	793	794	801	802	803	804	805	806	807
808	809	810									

TUCSON

605	610	612	614	616	618	624	634	642	644	646	651
662	666	671	673	683	685	691	693	703	705	711	741

743	747	763	765	767	774	776	781	785	787	794	801
803	805	808	810	814	819	821	823	825			

FLAGSTAFF

606	805	825									
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YUMA CITY

610	803	805	821	823							
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COCONINO

612	645	780									
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MARICOPA COUNTY

604	605	609	610	611	612	613	614	615	616	617	618
619	620	621	622	623	624	625	626	627	628	634	635
636	642	643	644	645	646	647	648	6449	650	651	652
653	654	655	656	657	658	659	660	661	662	663	664
665	666	812	813	814	815	816	817	818	819	820	821
822	823	824	825	826	827						

PIMA

605	610	624	651	671	673	683	685	691	693	703	705
711	741	743	747	763	765	767	774	776	787	808	810
814											

CAWCD (CAP)

607	630	632	668	718	760	796	799				
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STATE OF ARIZONA

637	638	640	713	714	716	829					
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NOT ASSIGNABLE

603 641 717 828 830

APPENDIX V - PROCEDURE FOR DETERMINING SERVICE AREA

1. Convert proposed BASE STATION power ERP to dB below 1 kW ERP.
2. Subtract value in step 1 from 41 dBu.
3. In look-up table 1 determine the two- (2) height columns that correspond most closely to proposed BASE STATION H.A.A.T.
4. Interpolate between the listings under the two- (2) columns to determine where the value in step 2 falls.
5. Read the mileage from the "MILES" column. This is the radius of the proposed service area.

EXAMPLE

The service area of a 100-watt ERP station with an antenna height above average terrain of 450 feet would be calculated as follows:

$$\begin{aligned} P \text{ (dBk)} &= 10 \times \log (100) - 30 \\ &= 10 \times 2 - 30 \\ &= -10 \end{aligned}$$

$$\begin{aligned} F \text{ (dBu)} &= 41 - (-10) \\ &= 51 \text{ dBu} \end{aligned}$$

From the look-up tables, 51 falls between 50.5 in the 400 ft. column and 52.9 in the 500 ft. column. The corresponding mileage would be 12.

INTERFERENCE PROTECTION

1. Convert proposed BASE STATION ERP to dB below 1 kW ERP.
2. Subtract value in step 1 from 16 dBu.
3. In look-up table 2 determine the two (2) height columns that correspond most closely to the proposed BASE STATION H.A.A.T.
4. Interpolate between the listings under the two- (2) columns to determine where the value in step 2 falls.

5. Read the mileage from the column "MILES". This value is the minimum distance between the proposed BASE STATION and the nearest point of another co-channel service area. (Service area may be obtained from the co-channel user or by calculations used in "PROCEDURE FOR DETERMINING SERVICE AREA".)

ADJACENT CHANNEL INTERFERENCE PROTECTION

1. Convert proposed BASE STATION ERP to dB below 1 kW ERP.
2. Subtract value in step 1 from 26 dBu.
3. In look-up table 2 determine the two (2) height columns that correspond most closely to the proposed BASE STATION H.A.A.T.
4. Interpolate between the two listings to determine where the value in step 2 falls.
5. Read the mileage from the "MILES" column. This value is the minimum distance between the proposed BASE STATION and the nearest point of the adjacent channel service area.

LOOK UP TABLE 1

	UHF F(50,50)					dBu/kW ERP				
MILES	100'	200'	300'	400'	500'	600'	700'	800'	900'	1000'
5	60.8	66.0	68.3	70.6	72.9	74.1	75.3	76.6	77.8	79.0
6	56.9	61.7	64.0	66.4	68.7	69.9	71.1	72.2	73.4	74.6
7	53.4	58.2	60.5	62.8	65.1	66.3	67.5	68.6	69.8	71.0
8	50.2	55.1	57.4	59.7	62.0	63.2	64.4	65.6	66.8	68.0
9	47.4	52.4	54.7	57.1	59.4	60.9	61.8	63.0	64.2	65.4
10	44.8	49.9	52.3	54.6	57.0	58.2	59.4	60.7	61.9	63.1
11	42.4	47.7	50.1	52.5	54.9	56.1	57.3	58.5	59.7	60.9
12	40.2	45.6	48.0	50.5	52.9	54.1	55.3	56.6	57.8	59.0
13	38.2	43.7	46.2	48.6	51.1	52.3	53.5	54.8	56.0	57.2
14	36.2	41.9	44.4	47.0	49.5	50.7	51.9	53.0	54.2	55.4
15	34.6	40.1	42.7	45.3	47.9	49.1	50.3	51.4	52.6	53.8
16	33.0	38.5	41.1	43.7	46.3	47.5	48.7	49.8	51.0	52.2
17	31.5	37.0	39.6	42.3	44.9	46.1	47.2	48.4	49.5	50.7
18	30.0	35.6	38.2	40.9	43.5	44.6	45.8	46.9	48.1	49.2
19	28.7	34.3	36.9	39.5	42.1	43.3	44.4	45.6	46.7	47.9
20	27.5	33.0	35.6	38.2	40.8	41.9	43.1	44.2	45.4	46.5
21	26.4	31.7	34.3	36.9	39.5	40.7	41.8	43.0	44.1	45.3
22	25.3	30.6	33.2	35.7	38.3	39.5	40.6	41.8	42.9	44.1
23	24.3	29.5	32.0	34.6	37.1	38.3	39.4	40.6	41.7	42.9
24	23.3	28.4	30.9	33.4	35.9	37.1	38.3	39.4	40.6	41.8
25	22.4	27.4	29.9	32.3	34.8	36.0	37.2	38.3	39.5	40.7
26	21.5	26.4	28.9	31.3	33.8	35.0	36.2	37.3	38.5	39.7
27	20.7	25.4	27.8	30.3	32.7	33.9	35.1	36.3	37.5	38.7
28	19.9	24.5	26.9	29.3	31.7	32.9	34.1	35.3	36.5	37.7
29	19.1	23.6	26.0	28.3	30.7	31.9	33.1	34.4	35.6	36.8
30	18.4	22.7	25.1	27.4	29.8	31.0	32.2	33.5	34.7	35.9

REFERENCE:

BASE ON 50% OF THE SIGNALS FALLING INTO THE CHARTED SIGNAL LEVELS 50% OF THE TIME AT THE DISTANCES LISTED.

HARMFUL INTERFERENCE - LOOK UP TABLE II

MILES	UHF F (50,10)					dBu/KW ERP				
	100'	200'	300'	400'	500'	600'	700'	800'	900'	1000'
10	43.8	50.1	52.5	54.9	57.4	58.6	59.8	61.0	62.2	63.3
11	41.7	47.6	50.1	52.5	54.9	56.2	57.5	58.7	60.0	61.2
12	39.6	45.8	48.4	51.0	53.6	54.7	55.8	56.9	58.0	59.2
13	37.4	43.4	46.2	49.0	51.8	52.9	54.0	55.2	56.3	57.4
14	35.7	42.0	44.7	47.4	50.1	51.2	52.4	53.6	54.8	56.0
15	33.9	40.3	42.8	45.4	47.9	49.2	50.5	51.7	53.0	54.3
16	32.2	38.5	41.2	43.9	46.6	47.7	48.9	50.1	51.3	52.5
17	31.2	37.1	39.8	42.5	45.2	46.3	47.5	48.7	49.9	51.1
18	29.7	35.7	38.3	40.8	43.4	44.7	46.1	47.4	48.7	50.1
19	28.7	34.7	37.2	39.8	42.3	43.6	44.9	46.1	47.4	48.7
20	27.7	33.3	35.7	38.2	40.6	41.9	43.3	44.6	45.9	47.3
21	27.0	32.2	34.5	36.9	39.2	40.5	41.9	43.2	44.5	45.8
22	25.9	30.8	33.3	35.7	38.2	39.4	40.7	41.9	43.2	44.4
23	25.2	29.7	32.1	34.4	36.8	38.1	39.4	40.7	42.1	43.4
24	24.5	29.0	31.3	33.5	35.7	37.0	38.4	39.7	41.0	42.3
25	23.8	28.0	30.2	32.4	34.7	36.0	37.3	38.6	40.0	41.3
26	23.1	27.3	29.4	31.5	33.6	34.9	36.3	37.6	38.9	40.3
27	22.4	26.3	28.5	30.7	32.9	34.2	35.4	36.7	37.9	39.2
28	21.7	25.5	27.5	29.5	31.5	32.8	34.2	35.5	36.8	38.2
29	21.0	24.8	26.8	28.8	30.8	32.1	33.3	34.6	35.8	37.1
30	20.3	24.2	26.0	27.9	29.7	31.0	32.3	33.5	34.8	36.1
31	19.6	23.5	25.3	27.2	29.0	30.3	31.6	32.8	34.1	35.3
32	19.1	22.8	24.6	26.5	28.3	29.5	30.7	31.9	33.1	34.1
33	18.5	22.6	24.3	26.0	27.7	28.8	29.9	31.0	32.1	33.3
34	18.0	21.7	23.5	25.2	27.0	28.1	29.2	30.3	31.4	32.6
35	17.5	21.2	22.9	24.6	26.3	27.4	28.5	29.6	30.7	31.8
36	17.2	20.7	22.3	23.9	25.5	26.7	27.8	28.9	30.0	31.2
37	16.8	20.3	21.9	23.6	25.2	26.3	27.3	28.3	29.4	30.5
38	16.5	19.6	21.2	22.9	24.5	25.6	26.6	27.7	28.7	29.7
39	16.1	19.3	20.7	22.0	23.5	24.5	25.6	26.6	27.7	28.7
40	15.7	18.9	20.3	21.7	23.1	24.2	25.2	26.2	27.3	28.3
41	15.4	18.2	19.7	21.2	22.8	23.7	24.7	25.7	26.7	27.7
42	15.0	17.8	19.3	20.7	22.0	23.0	24.0	25.0	26.0	27.0
43	14.7	17.5	18.9	20.3	21.7	22.6	23.5	24.4	25.3	26.3

HARMFUL INTERFERENCE - LOOK UP TABLE II (Cont.)

MILES	100'	200'	300'	400'	500'	600'	700'	800'	900'	1000'
44	14.4	17.2	18.4	19.7	21.0	21.9	22.8	23.7	24.6	25.5
45	14.0	16.8	18.1	19.4	20.7	21.6	22.5	23.4	24.3	25.2
46	13.6	16.1	17.4	18.7	20.0	20.9	21.8	22.7	23.6	24.5
47	13.3	15.4	16.6	17.7	18.9	19.8	20.7	21.6	22.5	23.5
48	13.0	15.4	16.6	17.7	18.9	19.8	20.7	21.6	22.5	23.5
49	12.6	15.0	16.3	17.5	18.7	19.5	20.3	21.1	21.9	22.8
50	12.3	14.7	15.9	17.0	18.2	19.0	19.9	20.7	21.6	22.4
51	11.9	14.4	15.5	16.7	17.8	18.6	19.4	20.2	20.9	21.7
52	11.5	14.0	15.0	16.1	17.2	18.0	18.8	19.7	20.5	21.3
53	11.2	13.5	14.6	15.7	16.8	17.6	18.5	19.3	20.2	21.0
54	10.9	13.0	14.1	15.3	16.5	17.2	18.0	18.8	19.5	20.3
55	10.5	12.6	13.6	14.7	15.7	16.6	17.4	18.3	19.1	20.0
56	10.1	12.4	13.4	14.4	15.4	16.2	17.0	17.8	18.6	19.4
57	9.8	11.9	13.0	14.0	15.0	15.8	16.6	17.4	18.1	18.9
58	9.5	11.5	12.6	13.6	14.7	15.5	16.2	17.0	17.8	18.5
59	9.1	11.2	12.3	13.3	14.4	15.1	15.9	16.7	17.4	18.2
60	8.8	10.9	11.9	13.0	14.0	14.8	15.5	16.3	17.1	17.8
61	8.4	10.5	11.4	12.4	13.3	14.1	14.8	15.6	16.4	17.2
62	8.0	10.1	11.1	12.0	13.0	13.6	14.4	15.0	15.8	16.5
63	7.7	9.8	10.7	11.7	12.6	13.3	14.0	14.7	15.4	16.1
64	7.4	9.5	10.4	11.3	12.3	13.0	13.6	14.4	15.0	15.7
65	7.0	9.1	10.0	11.0	11.9	12.6	13.3	14.0	14.7	15.4
66	6.6	8.8	9.7	10.6	11.5	12.2	13.0	13.6	14.4	15.0
67	6.3	8.4	9.3	10.3	11.2	11.9	12.6	13.3	14.0	14.7
68	5.9	8.0	9.0	9.9	10.9	11.5	12.3	13.0	13.7	14.4
69	5.6	7.7	8.6	9.6	10.5	11.2	11.9	12.6	13.3	14.0
70	5.3	7.4	8.3	9.2	10.1	10.8	11.5	12.2	13.0	13.6

REFERENCE:

BASE ON 50% OF THE SIGNALS FALLING INTO THE CHARTED SIGNAL LEVELS 10% OF THE TIME AT THE DISTANCES LISTED.

APPENDIX VI - ADJACENT REGION CONCURRENCE

(Copies of concurrence letters are available through the ARRC)

APPENDIX VII - CELLULAR NOTIFICATIONS

(Copies of concurrence letters are available through the ARRC)

APPENDIX VIII - INTERAGENCY RADIO SYSTEM PLAN

See Arizona Public Safety Communications Advisory Commission, State Interoperability Executive Committee for latest version of statewide interoperability plan



PUBLIC NOTICE

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DA 01-2222

WIRELESS TELECOM ACTION

October 15, 2001

ARIZONA (REGION 3) PUBLIC SAFETY COMMITTEE RECEIVES APPROVAL FOR MINOR AMENDMENT TO ITS REGIONAL PUBLIC SAFETY PLAN

(PR DOCKET NO. 91-143)

By this notice, a minor amendment to the Region 3 Public Safety Radio Plan (Region 3 Plan) that revises the current channel allotments for radio frequencies in the 821-824/866-869 MHz bands within the state of Arizona is approved. The amendment includes a revision of the allocation of 800 MHz frequencies to accommodate both current, wideband analog users and new, narrowband digital users. This amendment provides additional channels for users in Maricopa County, while assuring that there are no harmful effects to other Arizona users. With the exception of the relocation of Arizona Mutual Aid Channel 6, there are no changes outside of Maricopa County.

The amendment separates the channel allocations in Maricopa County into three segments.

- 16 kHz analog channels at the low and high end of the allocated channels for use in the Maricopa County network.
- 12.5 kHz digital channels in the middle of the allocated channels for use in the Phoenix-Mesa metropolitan area.
- Mutual aid channels.

On July 26, 2001, the Commission issued a Public Notice (DA 01-1738) inviting interested parties to file comments regarding a proposed amendment to the Region 3 Plan that was filed with the Commission on May 25, 2001. We have reviewed the Region 3 request and find that it furthers the Region's spectrum planning and management capability. Further, we have received no comments in response to the Public Notice of July 26, 2001. The amendment request includes concurrences from each of the adjacent Regions 5 (Southern California), 7 (Colorado), 27 (Nevada), 29 (New Mexico), and 41 (Utah). The amendment, is therefore, accepted and approved as submitted. The Secretary's office will place the amended Region 3 Plan in the official docket file where it will remain available to the public.

In accordance with the Public Safety National Plan, each region is responsible for planning its use of the public safety radio frequency spectrum in the 821-824-866-869 MHz bands.¹ The Region 3 Plan was originally adopted by the Commission on September 4, 1991,² and was subsequently revised by letter on May 24, 1995, and by Public Notice on November 6, 1998³

Questions regarding this public notice may be directed to Ms. Joy Alford, Wireless Telecommunications Bureau (202) 418-0694, TTY (202) 418-7233.

Action by Chief, Public Safety and Private Wireless Division, Wireless Telecommunications Bureau.

- FCC -

¹ Development and Implementation of a Public Safety National Plan and Amendment of Part 90 to Establish Service Rules and Technical Standards for Use of the 821-824/866-869 MHz Bands by the Public Safety Services, *Report and Order*, GN Docket No. 87-112, 3 FCC Rcd 905 (1987).

² Arizona Region Public Safety Plan, *Order*, Private Radio Docket 91-143, 6 FCC Rcd 5335 (1991).

³ Arizona (Region 3) Public Safety Committee Receives Approval For Minor Amendment To Its Regional Public Safety Plan, *Public Notice*, Private Radio Docket No. 91-143, 13 FCC Rcd 22460 (1998).



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DA 06-573
March 14, 2006

WIRELESS TELECOMMUNICATIONS BUREAU ACTION

WIRELESS TELECOMMUNICATIONS BUREAU APPROVES REGION 3 (ARIZONA) 800 MHz REGIONAL PLAN AMENDMENT

PR Docket No. 91-143

On August 23, 2005, the Region 3 (Arizona) 800 MHz Regional Review Committee submitted a proposed amendment to its Public Safety Plan for the use of the Public Safety National Plan frequencies in the 821-824/866-869 MHz band.¹ Region 3 requested Commission review and approval of the proposed amendment, which (a) adds a common nomenclature for the Common Calling and Tactical Interoperability Channels to assist in statewide interagency operations; (b) modifies provisions to allow permanent repeaters for the Tactical Channels with certain restrictions, and (c) makes other minor administrative changes. In addition, Region 3 requested a waiver of adjacent regional concurrence requirement for Region 29 (New Mexico) because Region 29 does not have an active 800 MHz regional planning committee. For the reasons discussed below, we grant the waiver request and approve the Region 3 800 MHz Plan Amendment.

Background. In accordance with the National Public Safety Plan, each region is responsible for planning its use of public safety radio frequency spectrum in the 821-824/866-869 MHz bands.² The National Plan specifies special policies and procedures governing the Public Safety Pool.³ Regional plans must include an explanation of how the plan has been coordinated with adjacent regions. For modifications, the regional chair may recommend, in writing, changes to a regional plan, and the Commission will give public notice soliciting comment on any such

¹ See Letter dated August 19, 2005, from Larry Sayers, Chair, Region 3 - Arizona Regional Review Committee (ARRC Letter), to Marlene H. Dortch, Secretary, FCC (submitting Amendment to Arizona NSPAC Plan) filed August 23, 2005 (Plan Amendment).

² See Development and Implementation of a Public Safety National Plan and Amendment to Part 90 to Establish Service Rules and Technical Standards for Use of the 821-824/766-869 MHz Bands by the Public Safety Services, *Report and Order*, Gen. Docket No. 87-112, 3 FCC Rcd 905 (1987) (*National Plan Report and Order*).

³ See 47 C.F.R. § 90.16, Public Safety National Plan.

proposals and issue appropriate orders upon review.¹ The Region 3 Plan, which was originally adopted by the Commission in September 1991, was amended in 1998 and 2001.²

Review of the Region 3 Plan Amendment. On August 23, 2005, Region 3 submitted its proposed Plan Amendment, which was reviewed by, and letters of concurrence obtained from, four out of five of regions adjacent to Region 3: Region 5 (Southern California), Region 7 (Colorado), Region 27 (Nevada), and Region 41 (Utah).³ In its letter, Region 3 advised that it was unable to obtain adjacent regional concurrence from Region 29 (New Mexico) because Region 29 does not have an active 800 MHz regional planning committee.⁴

Prior to the instant Plan Amendment, Region 3 received Commission approval for an amendment submission in October 2001, which included concurrences from the adjacent regions, including Region 29 (New Mexico).⁵ We note that the current Plan Amendment does not involve modifications to the channel assignments or existing allotments. In addition, we observe that this submission replaces all previous versions of the Arizona Public Safety Radio Spectrum Planning Committee Regional Plan on file with the Commission.⁶ The following is a summary of the Plan Amendment revisions:

- Allocated Common Calling/Tactical Interoperability Channels. This section updates the channel nomenclature, use of the calling and tactical interoperability channels and recommends the mandatory use of the names list by all agencies to facilitate interagency communications.⁷

⁴ See *National Plan Report and Order*, 3 FCC Rcd at 911 ¶ 57.

⁵ See *In The Matter of Arizona (Region 3) Public Safety Plan, Order*, PR Docket No. 91-143, 6 FCC Rcd 5335 (PRB 1991); *Wireless Telecommunications Bureau Announces Approval for Minor Amendment to its Regional Plan, Public Notice*, PR Docket No. 91-143, 13 FCC Rcd 22460 (PRB 1998); *Wireless Telecommunications Bureau Approves Arizona (Region 3) Minor Amendment to Its Regional Public Safety Plan, Public Notice*, PR Docket No. 91-143, DA 01-2222 (WTB PSPWD rel. Oct. 15, 2001).

⁶ See *supra* note 2.

⁷ See ARRC Letter at 1.

⁸ See *Wireless Telecommunications Bureau Approves Arizona (Region 3) Minor Amendment to Its Regional Public Safety Plan, Public Notice*, PR Docket No. 91-143, DA 01-2222 (WTB PSPWD rel. Oct. 15, 2001) (revising the allocation of 800 MHz frequencies to accommodate both wideband analog and new, narrowband digital users, and to provide additional channels for users in Maricopa County).

⁹ The Plan Amendment is labeled as “Version 4, August 2, 2005.”

¹⁰ See Plan Section 4.5 at 12. Allocated Common Calling/Tactical Interoperability Channels:
ICALL – (821/866.0125 MHz) National Public Safety Calling and Rural Tactical Operations Interoperability.
ITAC1 – (821/866.5125) Primary Fire and Emergency Medical Service, Statewide.
ITAC2 – (822/867.0125 MHz) – Primary Law Enforcement, Statewide.
ITAC3 – (822/867.0125 MHz) – Primary Fire and Emergency Medical Service, Statewide, Federal Government.
ITAC4 – (823/868.0125 MHz) – Primary Law Enforcement, Statewide; Federal Government.
AZTAC – (821/866.0375 MHz) – Primary Statewide for all Other Public Safety (including highway/forestry/local government/search and rescue).

- Tactical Interoperability Channel Requirements. For repeater establishment, the Arizona Regional Review Committee will determine the location of the tactical repeaters, and must be contacted by any agency using a transportable repeater within the coverage area of a permanent repeater. If an interoperability repeater is to be installed within seventy miles of the State boundary, the adjacent 800 MHz regional planning committee must be notified with the location in order to prevent interference to that region's interoperability capabilities.¹¹
- Plan Appendix IV- Frequency Allocation List (Allocated Channels by User) is updated to reflect prior Commission-approved allotment and channel assignment changes.¹²

Waiver Request. Section 1.925 of the Commission's Rules provides that a waiver of the Commission's Rules may be granted if it is shown that the underlying purpose of the rule(s) would not be served or would be frustrated by application to the instant case, and that a grant of the requested waiver would be in the public interest; or in view of the unique or unusual circumstances of the instant case, application of the rule(s) would be inequitable, unduly burdensome or contrary to the public interest or if the applicant has no reasonable alternative.¹³

In support of the waiver request, Region 3 explains that after multiple attempts and contacting several people, it was determined that Region 29 (New Mexico) does not have an active 800 MHz regional planning committee, as confirmed by the Julian Zamora, Chairman, Region 29 700 MHz Regional Planning Committee.¹⁴ A review of our regional planning records confirms that the Region 29 800 MHz regional planning committee status has remained unchanged. Accordingly, based on the record before us, we find that Region 3 exercised due diligence in its efforts to obtain adjacent regional concurrence from Region 29 (New Mexico), and that, under the circumstances presented, no reasonable alternative exists other than to seek a waiver of the adjacent concurrence requirement. Moreover, we believe that to postpone or delay the approval of the Region 3 (Arizona) 800 MHz Plan Amendment would be contrary to the public interest. Therefore, we find good cause to grant the Region 3 waiver request.

On December 30, 2005, the Region 3 Plan was placed on *Public Notice* for comment.¹⁵ We received no comments on the Plan. We have reviewed the Plan submitted by Region 3, and conclude that it complies with other applicable FCC rules and policies. Accordingly, pursuant to Section 4(i) of the Communications Act of 1934,

¹¹ See Plan Section 4.5.2.2, Repeater Establishment at 13-14.

¹² See Plan Appendix IV- Frequency Allocation List (Allocated Channels by User) at 57-66.

¹³ 47 C.F.R. § 1.925.

¹⁴ See ARRC Letter at 1. This fact is further corroborated by correspondence between the Region 29 (New Mexico) 700 MHz regional planning committee chair and Michael J. Wilhelm, Chief, Public Safety and Critical Infrastructure Division (PSCID), Wireless Telecommunications Bureau in November 2004. See Letter dated November 23, 2004 from Michael J. Wilhelm, Chief, PSCID, WTB to Julian Zamora, Communications Manager, City of Albuquerque, New Mexico (acknowledging that the former 800 MHz regional planning committee chair has retired and has not yet been replaced, and appointing Mr. Zamora to act as the convener to plan and conduct the initial Region 29 (New Mexico) 700 MHz RPC meeting).

¹⁵ See Comments Invited on Arizona (Region 3) 800 MHz Regional Review Committee Public Safety Plan Amendment, *Public Notice*, PR Docket No. 91-143, 20 FCC Rcd 20507 (WTB PSCID 2005). Comments were due January 30, 2006 and reply comments were due February 14, 2006.

Version August 14, 2007

as amended, 47 U.S.C. § 154(i), and Section 1.102(b) of the Commission's Rules, 47 C.F.R. § 1.102(b), the Region 3 (Arizona) 800 MHz Public Safety Plan Amendment is APPROVED.

This action is taken under delegated authority pursuant to Sections 0.131 and 0.331 of the Commission's Rules, 47 C.F.R. §§ 0.131, 0.331.

Action by the Chief, Public Safety and Critical Infrastructure Division, Wireless Telecommunications Bureau.

- FCC -