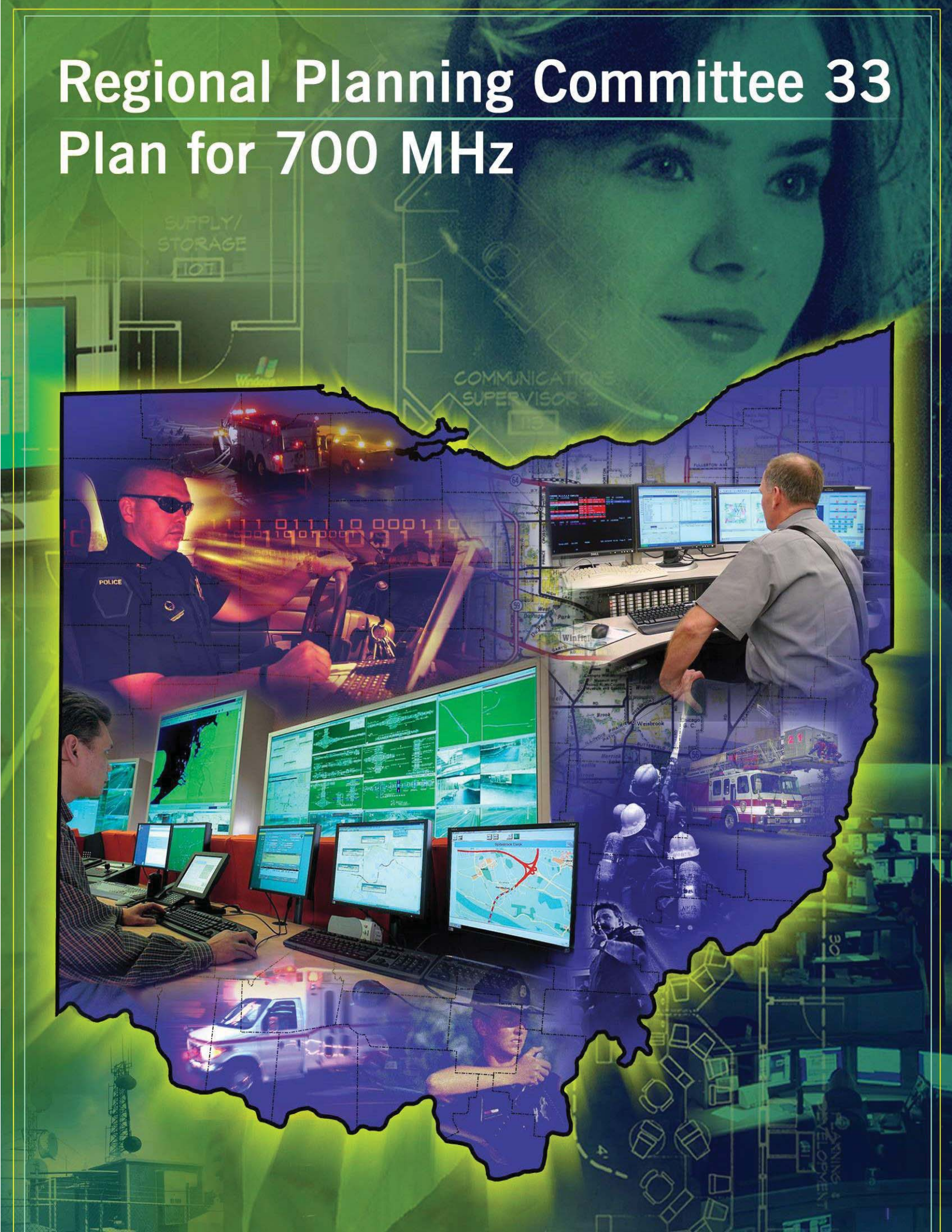
Regional Planning Committee 33 Plan for 700 MHz



December 8, 2008

Federal Communications Commission
Office of the Secretary
445 12th Street, SW
Washington, DC 20554

Attention: Chief, Public Safety and Homeland Security Bureau
Subject: WTB Docket No. 02-378, Region 33 - 700 MHz Regional Plan

Dear Chief Poarch:

On behalf of Regional Planning Committee 33 (Region 33), I am pleased to submit the Plan[1] for the use of the 700 MHz public safety narrowband voice frequencies pursuant to the rules of Federal Communications Commission. The Region 33 Plan has been developed in conformance with the Second Report and Order[2] as well as the related Orders of the Commission. In addition, the table of 700 MHz channels[3] has been updated to include the new assignments as developed by the Computer Assisted Pre-coordination Resource and Database System (CAPRAD)[4].

Region 33 believes that this Plan sufficiently addresses each of the common elements required under the Commission's rules[5]. In the compilation of the Plan, Region 33 provided notice of all meetings, opportunities for comment, and how we reasonably considered the views expressed by participants. The Plan was coordinated with each of the neighboring Regional Planning Committees[6]. Additionally, the Plan has been adopted by the Region with acknowledgement of the Commission's regulatory provisions relative to land mobile radio operation proximate to the Canadian border[7]. Finally, this Plan is representative of all public safety entities in Region 33 and the details of the Region's activities to meet the requirements of the Commission[8] relative to Plan development are offered within the body of this document.

On behalf of the first responders and citizens of the State of Ohio, we look forward to the review of this Plan by the Commission's staff.

Respectfully submitted,

Paul M. Mayer

Paul M. Mayer
Chairperson, Regional Planning Committee 33

---

[1] *See* 47 CFR §90.527(a)(1)
[2] *See* FCC 07-132
[3] *See* 47 CFR §90.531(b)(6)
[4] *See* DA 07-4587 Appendix Bullet Point One, Page 3
[5] *See* 47 CFR §90.527(a)
[6] *See* 47 CFR §90.527(a)(5)
[7] *See* 47 CFR §90.533
[8] *See* 47 CFR §90.527(a)(6)

1. INTRODUCTION

1.1 Background

In the early 1990's public safety officials testified before the United States Congress (Congress) regarding the lack of spectrum for public safety agencies throughout the country. Additional land mobile radio spectrum was needed to meet the requirements for current and future public safety communications programs. As a result, Congress created the Public Safety Wireless Advisory Committee (PSWAC), comprised of a cross-section of public safety officials, who were charged with studying the problem and making recommendations to Congress. The PSWAC report recommended that 97.5 MHz of new spectrum be allocated to public safety to meet the needs for the next 15 years. PSWAC further recommended that interoperability within and among public safety and public service providers be a basic and essential requirement.

In 1996, Congress directed the Federal Communications Commission (FCC) to allocate 24 MHz of spectrum to public safety. Subsequently, the FCC established a federal advisory committee, called the National Coordinating Committee (NCC), to address interoperability, technology, and implementation issues to be considered for the 700 MHz spectrum. At the conclusion of the NCC project work, the Commission stated[9] "The actions we take today are based on the recommendations that we received from the Public Safety National Coordination Committee (NCC),[10] an advisory committee established in accordance with the Federal Advisory Committee Act".[11] From the NCC's work, the FCC required that a Regional Plan be prepared by regions outlining the use of public safety radio frequencies in the 700 MHz band[12] and submitted for approval by the FCC. The Commission stated further that the plan must be approved before any agency within a region would receive channels from the new allocation.

Region 33 held its first public meeting on February 28, 2001. Region 33 800 MHz chairman, Donald Flahan, designated Raymond R. Smith as convener of the meeting. The purpose of the first meeting was to describe the 700 MHz planning process and to elect officers including the first chair:

Raymond R. Smith, Planning Consultant
State of Ohio, Multi-Agency Radio Communication System
940 Matterhorn Drive, Reynoldsburg, Ohio 43068
Telephone: 614-863-2808
E-mail: rsmith4@insight.rr.com

[9] See FCC 01-10

[10] See Public Safety National Committee's Recommendations to the Federal Communications Commission for Technical and Operational Standards for Use of the 764-776 MHz and 794-806 MHz Public Safety Band Pending Development of Final Rules (Feb 25, 2000)(NCC Report).

[11] 5 U.S.C. App. 2 (1988)

[12] Throughout this Plan, the term "700 MHz" relates to those channels included in 47 CFR §90.531 for which the Regional Planning Committees have responsibility

1.2 Purpose

The purpose of the Region 33 Plan is to document and ensure that the process leading to document development results in the maximum public benefit of the 700 MHz spectrum by eligible licensees[13]. The eligible agencies are:

A. State and local government entities[14]
B. Nongovernmental agencies[15]

This plan gives priority to those public safety and public service agencies that are primarily responsible for the protection of life and property, and where assigned frequencies will be utilized in the most efficient manner possible through trunked and future advanced technologies.

This plan has been developed in a manner so that all 700 MHz voice narrow band spectrum available for all public safety and public service applicants in the region will be impartially allocated according to criteria set forth in this document, as well as the spectrum available for use through United States government negotiations with Canada and when television stations transition to other spectrum[16].

1.3 Major Elements of the Plan and the National Standards Adopted by the NCC

The major elements of the Plan and those elements specified by the Commission in Part 90 Subpart R[17]. The Region 33 plan has been developed in conformity with the NCC planning guidelines. If there is a conflict between this plan, the NCC documents or the FCC rules, the Commission's rules will prevail. It is expected that Regional Plans for other regions may differ from this plan based on local needs. By officially sanctioning this plan, the FCC finds conformity to the appropriate regulatory planning requirements. Nothing in the plan is intended to interfere with the proper functions and duties of organizations certified by the FCC for frequency coordination in the Private Land Mobile Services, but rather it provides procedures representing the consensus of those that developed the Region 33 Plan. If there is a perceived conflict, then the judgment of the FCC will prevail.

1.4 RPC Membership and Participation

The members of the Region 33 planning committee can be found in Appendix (A). This listing includes each member's agency affiliation, mailing address, phone number and e-mail address. The officers of the RPC are noted as: Chair, Vice Chair and

[13] *See* 47 CFR §90.523
[14] *See* 47 CFR §90.523(a)
[15] *See* 47 CFR §90.523(b)
[16] *See* Deficit Reduction Act of 2005 and Title III Digital Television Transition and Public Safety Act
[17] *See* 47 CFR §90.527(a)(2)

Secretary/Treasurer. The Region 33 committee membership represents a cross-section of public safety and public service users in the region.

All persons working in eligible public safety agencies and non-governmental organizations were invited to participate in the planning process and to have their positions heard and considered fairly[18]. This was accomplished through notices published by the Commission as well as electronic messages distributed among the public safety agencies of Ohio.

1.5 Region Description

Region 33 encompasses the entire state of Ohio land mass and waterways and is bordered by the following regions: Region 21 (Michigan), Region 14 (Indiana), Region 17 (Kentucky), Region 44 (West Virginia) and Region 36 (Western Pennsylvania). For the purposes of frequency planning Region 55 (Western New York) must also be considered because the northeast corner of Region 33 is less than 70 miles from the southwestern corner of Region 55 (Chautauqua County). Region 33 also shares an international border with Canada; which, under current agreement with the United States, creates restrictions within Region 33 for the use of the 700 MHz spectrum.

Region 33 has eighty-eight (88) counties and numerous cities and metropolitan areas. The 2000 census for the region was 11,353,140[19] which represented a 4.9% increase over the 1990 census. Native American population represents 0.2% of the region population. Region 33 (Ohio) ranks as the 7th most populous state in the United States and its 41,004 square miles makes it 35th in overall size. Region 33 counties, cities, villages and townships; including maps showing population patterns and future growth trends are found in Appendix (B).

Region 33 is very diverse having a large industrial area in the northeast, a significant agriculture base, and 29 counties in the southeastern portion of the region that falls within the Appalachian Economic Area. The region has six (6) metropolitan areas, (Akron/Canton, Cincinnati, Cleveland, Columbus, Dayton, and Toledo) that are urban and have heavy concentrations of commercial business and population. The terrain varies from rugged Appalachian foothills in the southeast, rolling hills through the central portion of the region and flat farmlands in the west.

There are various individual mutual aid compacts and agreements implemented throughout the region, primarily between fire service agencies. With the exception of those established by the Ohio Statewide Interoperability Executive Committee (SIEC), there are no known existing organized interoperability agreements in the region that employ uniform standard operating procedures that cross different public safety services. Various public safety services have shared channel usage used under emergency conditions. These are generally service specific; i.e., law enforcement, fire and

[18] *Id.*
[19] *See* Quick Facts, United States Census Bureau

emergency services. Few conditions currently exist within Region 33 where cross service communication routinely occurs during emergency situations.

Region 33, being one state, has the typical governmental subdivisions; state, county, township and municipalities. Each subdivision, to the level of its legislated responsibility, has public safety responsibility for police, fire prevention and control, natural resource preservation and control, prisoner detention, emergency medical services, and highway maintenance. Federal agencies have a presence in the region. Only one major military facility, Wright-Patterson Air Force Base, and six (6) Coast Guard stations are located in the region. There are no cross jurisdiction arrangements or agreements that reach outside of Region 33. There are no recognizable tribal governments in this region[20].

This regional plan will consider, for planning purposes, the communication needs of all currently eligible entities under the FCC's 700 MHz band plan[21]. Additionally, this plan will consider the communication needs of those public safety service associated operations as the Region 33 planning committee may deem necessary and desirable to meet local needs as permitted by the Commission[22].

1.6 Notification Process

The initial notification of meetings process started in late December, 2000 and was accomplished through public notices posted on the FCC and Association of Public-Safety Communications Officials International, Inc (APCO) websites. The Commission also published a Public Notice[23] of the convening meeting. Further, advertisements were placed in newspapers with wide distribution in Region 33 and the Ohio APCO bulletin. Ongoing notices were placed on the FCC and Ohio APCO websites. Additionally, personal contact with several individuals who had interest in the 700 MHz planning occurred throughout the process to encourage participation.

A list server was set up to announce meetings and share information among members of the planning committee. Representatives of bordering states RPC's were given access to the list server to ensure distribution of the Region 33 documents and process. Comments were solicited from all eligible parties through the list server and at the RPC meetings.

Comments received from eligible parties were forwarded to the appropriate subcommittee chairs for review and deliberation by their subcommittees. Relevant comments were passed on to the RPC for consideration and implementation in the plan.

---

[20] *See* American Indian Resource Directory listing of federally recognized tribes http://www.indians.org/Resource/FedTribes99/fedtribes99.html

[21] *See* 47 CFR §90.531

[22] *See* 47 CFR §90.523(b)

[23] *See* DA 01-40

When the Region 33 plan is completed it will be published in the Computer Assisted Pre-coordination Resource and Database System (CAPRAD) to receive final comments. The document will be posted on the Region 33 list server for comment for the general public. The plan will also be distributed to all border regions for their review and comment.

Appendix (C) includes copies of notices, comments and submissions. It also includes the dates, names of publications, and websites where meetings were announced.

2. REGIONAL PLAN ADMINISTRATION

2.1 Regional Planning Committee

Regional Planning Committee 33 will remain a functional entity after the approval of this Plan to discharge its responsibilities established by the Federal Communications Commission. The Region 33 By-Laws may be found in Appendix (D) of this plan. Meetings will be scheduled in accordance with the By-Laws or as directed by the RPC chair. Minutes can be found in Appendix E.

The Chairperson of Regional Planning Committee is:

Robert M. Bill

MARCS Program Office
4200 Surface Road
Columbus, OH 43228
Phone: 614-995-0063
Fax: 614-995-0067
Email: Bob.Bill@das.ohio.gov

2.2 Implementation Subcommittee

The Implementation subcommittee is responsible for monitoring adherence to the Region 33 plan. The membership of this committee shall consist of the Interoperability subcommittee chairperson and three other members of the RPC selected by the RPC chairperson. Membership of the committee will be determined at the annual meeting. The committee will remain in place permanently to resolve inter-regional issues and recommend regional plan changes to the FCC.

The Implementation Subcommittee duties are as follows:

- Annually review and update the Region 33 plan as necessary;
- Monitor various system(s) implementation progress;
- Communicate with applicants to determine if implementation of their systems is in accordance with provisions of their applications;
- Make recommendations to the RPC on applicants that fail to implement systems;
- Make recommendations to resolve inter-regional issues.

2.3 Technical Subcommittee

The primary responsibility of the Region 33 Technical subcommittee will be to review applications from agencies within the region for conformance to plan requirements. The Technical subcommittee will have access to the CAPRAD system, and will review and recommend approval of applications, as they are received in the system. Applications

approved by the RPC will be forwarded to the selected coordinator, then to the FCC for licensure. The membership of this committee will consist of the Technical subcommittee chairperson, the Interoperability subcommittee chairperson and three other members of the RPC selected by the RPC chair. Membership of the Technical subcommittee will be determined at the annual meeting.

The Technical subcommittee duties are as follows:

- Review applications for compliance to the Region 33 Plan;
- Deal with appeals/applicant clarifications and applicant presentations;
- Recommend approval or denial to the RPC Chair;
- Maintain coordination with neighboring RPC's and FCC certified frequency coordinators and advisors;
- Update the Computer Assisted Pre-coordination Resource and Database (CAPRAD).

2.4 Interoperability Subcommittee

Ohio has elected to create a State Interoperability Executive Committee (SIEC) to oversee interoperability channels. The Ohio SIEC intends to include a member of the Region 33 RPC on its committee. The Region 33 interoperability subcommittee will serve as liaison with the Ohio SIEC and assist in the statewide interoperability planning process. The RPC believes the state has used good judgment by including RPC representation on the SIEC.

The Interoperability subcommittee duties are as follows:

- Work with the Ohio SIEC in the development of a statewide interoperability plan;
- Load interoperability channel assignments in CAPRAD;
- Review application interoperability plans for conformance to the state plan.

3. ALLOCATION OF GENERAL USE SPECTRUM

3.1 General Provisions

This portion of the plan provides a basis for proper spectrum utilization[24]. Its purpose is to evaluate the implementation of 700 MHz radio communication systems within the region. Region 33 places greater emphasis on agencies that provide services that result in preserving personal life and property protection and such agencies will receive the highest priority.

Systems operating in the Region 33 must comply with the FCC rules and regulations[25]. All systems using six or more narrowband channels in the 769-775 MHz and 799-805 MHz frequency bands must be trunked systems[26], except for those utilized for interoperability[27]. Mobile and portable transmitters operating on narrowband channels in the 769-775 MHz and 799-805 MHz frequency bands must be capable of operating on all of the designated nationwide narrowband Interoperability channels[28]. Mobile radios shall be digital and incorporate P25, Phase 1, on interoperability channels of a type accepted by the FCC.

The Region 33 Plan adopts the NCC's recommended Pre-Assignment Rules and Recommendations outlined in Appendix (F) as the appropriate method used by the National Law Enforcement Telecommunications Council's, to develop CAPRAD as the base allotment methodology. A description of CAPRAD can be found in paragraph 5.4 of this plan.

Upon approval of this plan, Region 33 will announce that 700 MHz public safety channels are available in the Region and that channels have been assigned into pool allotments to counties within the Region. All available methods will be used to inform public safety entities of the availability of 700 MHz channels. All requests for channels will be handled on a first come, first serve basis. Region 33 encourages small agencies to join multi-agency systems as such systems promote spectrum efficiency allowing small and large agency capacity needs to be met[29].

Agencies that desire spectrum must submit a complete application package containing various documents. A list of the documents is stated in Section 4.1 titled **Region 33 Application Requirements.** All applicants will use CAPRAD for the preparation and submission of applications[30].

---

[24] *See* 47 CFR §90.527(a)(4)
[25] *See* 47 CFR §90 Subpart R and other applicable parts per the Communications Act of 1934 (as amended)
[26] *See* 47 CFR §90.537(a)
[27] *See* 47 CFR § 90.531(b)(1)(iii) and 47 CFR §90.537(b)
[28] *See* 47 CFR §90.547(a)
[29] *See* 47 CFR §90.527(a)(6)
[30] *See* 47 CFR § 90.527(b)(3)

3.2 Channel Allotments

3.2.1 General Use Channels[31]

All agencies requesting spectrum during the initial filing window will be allotted channels if plan requirements are met. CAPRAD allotments are made in 25 KHz blocks of four (4) adjacent 6.25 KHz channels to allow for various digital technologies. Requests for voice channels will be allocated on the basis of one 12.5 KHz frequency (two 6.25 KHz channel pairs) per one voice resource requested. It is the forthcoming requirement of the FCC to achieve one voice or data path per channel (6.25 KHz)[32].

Applicants should acknowledge their migration path to 6.25 KHz when applying for channels in Region 33 to meet the spectral efficiency requirements of the Commission[33]. The Region will consider requests for four (4) channel blocks to support low-speed data operations requiring a 25 KHz frequency pursuant to the Commission's rules[34] of such operation.

Special note: Although the CAPRAD system distributes frequencies geographically by county nationwide, this does not imply that counties have ownership of the frequencies. Channels are available to all eligible Region 33 public safety entities on a first come first serve basis.

CAPRAD maximizes the spectrum utilization. See Appendix (G) for the CAPRAD table of channel allocations for Region 33. The committee has determined that sufficient spectrum has been allocated for interoperability in the national plan to meet the current and future needs of this region.

3.2.2 Low Power "Campus Eligible" General Use Channels

In the implementation of the 700 MHz spectrum throughout Region 33, there may be opportunities for increased channel reuse when developing systems for "campus" type operations. Examples may be: hospitals, stadiums, malls, universities, transit systems, ports or other places of public gatherings. In many cases, these facilities require a smaller or more specific geographical coverage area than assumed in the initial channel packing plan and may be able to be reused more efficiently. These "campus" type systems also, in many cases, require in-building or confined space/tunnel radio coverage or communications along a linear pathway, such as maintenance or right of way. Public safety channels can be allotted to this type of operation in a Region and can lead to effective system development. If power levels and Area of Protection (AOP) are taken into account increased spectral efficiency can be achieved. In order to facilitate this method of system implementation channels may be identified in certain areas of Region

[31] *See* 47 CFR § 90.531(b)(6)
[32] *See* 47 CFR § 90.535(b)
[33] *Id.*
[34] *Id.*

33 that may be used in a smaller area. These channels will NOT be eligible for use throughout a county. The following criteria must be followed when requesting channels from the RPC for operations of this type:

- The 50dBu service contour of the proposed system must not exceed an area more than two (2) miles from the proposed service area. When this two (2) mile distance extends to an adjacent Region, the applicant must obtain concurrence from the adjacent Region. Reduced external antenna height, along with reduced ERP, directional antenna, distributed antenna systems, radiating "leaky coax" are all tools that should be employed in the development of these types of systems. Region 33 will ensure the development of these types of systems will not interfere with co-channel or adjacent channel users within Region 33 or adjacent Regions. The Chair, or a majority of the members of this Region has the authority to request and require engineering studies from the applicant to verify that no harmful interference will be introduced to any co-channel or adjacent channel existing user prior to application approval. For 20 KHz co-channel assignments, the 50dBu service contour of the proposed stations will be allowed to extend beyond the defined service area of a distance not to exceed two (2) miles. An adjacent/alternate 25 KHz channel shal be allowed to have 60dBu (50,50) contour touch, but not overlap the 40dBu service (50,50) contour of an adjacent/alternate system being protected. Evaluations should be made in both directions to ensure compliance. Systems utilizing "campus" channels are subject to approval of the RPC. The RPC is the final authority on parameters associated with "campus" type operations.

- If Region 33 receives an application for low power fixed use and the proposed service contour encroaches onto an adjacent Region prior to the channel allotted to the Region being implemented in a specific system, the application must be modified so the service contour does not encroach into the adjacent Region. Otherwise, the applicant must supply Region 33 with written concurrence from the adjacent Region permitting the original design.

3.3 Orphaned Channels

The Region will reassign "orphan" voice channels pursuant to the provisions of the NCC and as permitted by the Commission's rules. An orphaned channel may be used at another location within the county area where it was originally approved, if it meets co-channel and adjacent channel interference criteria. When such reassignment of orphan channels exceeds the guidelines of the NCC, the Region will re-file the Plan with the Commission for review and approval[35].

When in the best interest of public safety communications and efficient spectrum utilization within the Region 33, the RPC shall have the authority to move these orphaned channels, and/or co-channel or adjacent channel allotments affected by the movement of

[35] *See* 47 CFR § 90.527(b)

orphaned channels, to other areas throughout the Region, as deemed necessary to retain spectrum efficiency and/or minimize co-channel or adjacent channel interference. If it is required to move a channel allotment to a location outside of the county area to which it was originally approved, the Region 33 Technology subcommittee will review the application. The subcommittee will advise the RPC whether the revised channel allotment meets frequency coordination guidelines and should, or not be, moved to accommodate the application at hand. The movement of the revised channel allotments can be approved by a majority vote of the RPC members at a regular or special meeting of the RPC.

3.4 Low Power Channels

Purpose

The purpose of this document is to provide guidelines relative to the use of the low power 700 MHz channels under the authority of the Regional Planning Committee (RPC) as defined by 47 CFR §90.531(b)(3).

Eligibility

The following entities are eligible to use low-power channels under the control of the Regional Planning Committee pursuant to 47 CFR §90.523(a) and (b).

(a) *State or local government entities.*

Any territory, possession, state, city, county, town, or similar State or local governmental entity is eligible to hold authorizations in the 769–775 MHz and 799–805 MHz frequency bands.

(b) *Nongovernmental organizations.*

A nongovernmental organization (NGO) that provides services, the sole or principal purpose of which is to protect the safety of life, health, or property, is eligible to hold an authorization for a system operating in the 769–775 MHz and 799–805 MHz frequency bands for transmission or reception of communications essential to providing such services if (and only for so long as) the NGO applicant/licensee:

(1) Has the ongoing support (to operate such system) of a state or local governmental entity whose mission is the oversight of or provision of services, the sole or principal purpose of which is to protect the safety of life, health, or property;

(2) Operates such authorized system solely for transmission of communication essential to providing services the sole or principal purpose of which is to protect the safety of life, health, or property; and

(3) All applications submitted by NGOs must be accompanied by a new, written certification of support (for the NGO applicant to operate the applied for system) by the state or local governmental entity referenced in paragraph (b)(1) of this section.

Low-power 700 MHz Channel Use

Frequencies will be used in a simplex or repeater mode as specified within this provision of the Region's Plan for 700 MHz. The Plan will combine two channels as contained in 47 CFR §90.531(b)(3) to yield a 12.5 KHz simplex operating frequency. In the repeater mode, four 700 MHz channels shall be combined to yield a 12.5 KHz transmit and 12.5 KHz receive frequency.

Use within the Region

The low-power 700 MHz frequencies are limited to transmissions with the effective radiated power (ERP) as specified by the Commission[36]. These frequencies can be used at the broad discretion of first responders in one of two methodologies, direct radio-to-radio or simplex operation and as an Incident Area Network (IAN) or other low power technology requiring a repeater capability. The use of these frequencies for official public safety or public service communications is permitted by a single public safety agency prior to the actual invocation of interoperable communications between two or more public safety agencies. Communications of a personal non-official purpose are prohibited.

Assignment of Frequencies

Typically, first responders will have broad discretion in the use of these channels. However, if an incident is of sufficient scale to invoke the National Incident Management System (NIMS), the Incident Commander shall determine which low-power channels shall be used for first responders as well as the use of simplex and/or IAN repeater technology.

Modulation

Pursuant to 47 CFR §90.525(a), operation on these channels may utilize digital or analog modulation. For the purpose of this Plan, analog operations will be utilized. Analog operations will utilize the 11K0F3E emission type.

Programming of Frequencies

Eligible licensees are encouraged to program related frequencies into 700 MHz capable mobile and portable radios as may be practical pursuant to the Service Assignment tables on the following pages. This programming is not mandatory as some licensees may have insufficient capacity in subscriber devices to accommodate these frequencies.

[36] *See* 47 CFR § 90.531(b)(3), *See* 47 CFR § 90.541(d), and *See* 47 CFR § 90.545(b)(4)

Service Assignments

A table of repeater and direct or simplex assignments begins on the following pages. These assignments notate specific frequencies reserved for EMS, fire, and law enforcement users. For all other users, Generic Public Safety/Public Service frequencies exist that can be used by any eligible licensee as defined by 47 CFR §90.531.

Repeater/Incident Area Network Operation

From the Department of Homeland Security SAFECOM Statement of Requirements[37], ***An incident area network (IAN) is a network created for a specific incident. This network is temporary in nature***. For the IAN or other repeater operation, the Region will follow the national deployment model; the lower frequency shall be used for the Repeater transmitter frequency while the upper frequency is employed for mobile/portable transmissions. Repeater operation is identified by the "2" (2-channel) behind the service name, e.g. "7TAC**2**1 meaning 700 MHz (7) Tactical (TAC) Frequency with Repeater (2) frequency 1 (1).

Freq. Name	Repeater TX	Repeater RX	Applicable Service
7TAC21	Channels 1-2	Channels 961-962	Generic Public Safety/Service
7TAC22	Channels 3-4	Channels 963-964	Generic Public Safety/Service
7TAC23	Channels 957-958	Channels 1917-1918	Generic Public Safety/Service
7FIRE21	Channels 5-6	Channels 965-966	Fire
7FIRE22	Channels 7-8	Channels 967-968	Fire
7MED21	Channels 949-950	Channels 1909-1910	EMS
7MED22	Channels 951-952	Channels 1911-1912	EMS
7LAW21	Channels 953-954	Channels 1913-1914	Law Enforcement
7LAW22	Channels 955-956	Channels 1915-1916	Law Enforcement

Freq. Name	Subscriber TX	Subscriber RX	Service (Notes)
7TAC21	Channels 961-962	Channels 1-2	Generic Public Safety/Service
7TAC22	Channels 963-964	Channels 3-4	Generic Public Safety/Service
7TAC23	Channels 1917-1918	Channels 957-958	Generic Public Safety/Service
7FIRE21	Channels 965-966	Channels 5-6	Fire (1)
7FIRE22	Channels 967-968	Channels 7-8	Fire (1)
7MED21	Channels 1909-1910	Channels 949-950	EMS (2)
7MED22	Channels 1911-1912	Channels 951-952	EMS (2)
7LAW21	Channels 1913-1914	Channels 953-954	Law Enforcement (3)
7LAW22	Channels 1915-1916	Channels 955-956	Law Enforcement (3)

[37] *See* SAFECOM Statement of Requirements, March 10, 2004, page 6.

Direct Radio-to Radio or Simplex Operation

Direct or simplex operation is identified by the "1" (1-channel) behind the service name, e.g. "7TAC**1**1 meaning 700 MHz (7) Tactical (TAC) Frequency with "Direct" or simplex communications (1) on frequency 1 (1). The channel names includes a "D" to indicate Direct.

Use (Notes)	Channels	Name
Generic Public Safety/Service	Channels 1-2	7TAC11D
Generic Public Safety/Service	Channels 3-4	7TAC12D
Generic Public Safety/Service	Channels 961-962	7TAC13D
Generic Public Safety/Service	Channels 963-964	7TAC14D
Generic Public Safety/Service	Channels 957-958	7TAC15D
Generic Public Safety/Service	Channels 1917-1918	7TAC16D
Fire Incident Management (1)	Channels 5-6	7FIRE11D
Fire Incident Management (1)	Channels 7-8	7FIRE12D
Fire Incident Management (1)	Channels 965-966	7FIRE13D
Fire Incident Management (1)	Channels 967-968	7FIRE14D
EMS (2)	Channels 949-950	7MED11D
EMS (2)	Channels 951-952	7MED12D
EMS (2)	Channels 1909-1910	7MED13D
EMS (2)	Channels 1911-1912	7MED14D
Law Enforcement (3)	Channels 953-954	7LAW11D
Law Enforcement (3)	Channels 955-956	7LAW12D
Law Enforcement (3)	Channels 1913-1914	7LAW13D
Law Enforcement (3)	Channels 1915-1916	7LAW14D

(1) These frequencies only programmed into mobile and portable radios used in the fire radio service.

(2) These frequencies only programmed into mobile and portable radios used in the EMS radio service.

(3) These frequencies only programmed into mobile and portable radios used in the law enforcement radio service.

3.5 Spectrum Utilization Agreements

By using CAPRAD the need for regional agreements relative to the use of spectrum is virtually eliminated for narrowband channels. Region 33 has not entered into any special agreements over the use of spectrum in border regions. If special situations occur in the future the RPC will act on behalf of regional entities in any border matter that may arise. In some instances Region 33 public safety agencies may allow other agencies access and/or use of their system. In such cases a Memo of Understanding such shown in Appendix (H) must be completed and recorded with the RPC.

3.6 Funding Requirements

Since Region 33 has elected to use the first come first serve method of approving applications for frequencies, abuses could occur. In order to prevent the potential for frequency "warehousing" applicants must submit clear documentation with their applications indicating that funding is available to implement the frequencies requested. This may be in the form of legislation, letter or other recognizable document signed by an official authorized to commit funding for the project.

3.7 Slow Growth Plans

The Commission requires that land mobile radio systems authorized to operate in the 769-775 MHz and 799-805 MHz frequency bands must be constructed and placed into operation within 12 months from the date of grant of the authorization[38]. However, licensees may request a longer construction period, up to but not exceeding 5 years, pursuant to 47 CFR §90.155(b).

Agencies submitting applications where funding is questionable and the progress for the system may be limited, slow growth plans must be submitted if the agency anticipates system implementation taking more than five (5) years. An agency must provide convincing affirmative evidence once a year after the plan is approved showing that they are actually in the process of implementing their proposed system. If the slow growth plan is not submitted, and acted upon by an agency, its licensed frequencies will be forfeited back to the General Pool for reallocation to other potential users.

3.8 Use of Long-Range Communications

During incidents of major proportions where public safety requirements might include the need for long-range communications in and out of a disaster area, alternate radio communications plans are to be addressed by the lead agencies within this region. These agencies shall integrate the appropriate interface to the five (5) national channels at a minimum. Such long-range communications could be amateur radio operations, satellite communications and/or long-range emergency preparedness communications systems. They then could provide the means to communicate outside the area for themselves and

[38] *See* 47 CFR § 90.551

the smaller agencies that might need assistance. Instances, such as; earthquakes, terrorist attacks, hurricanes, floods, widespread forest fires or nuclear reactor problems, could be cause for such long range communications.

3.9 Expansion of Existing 800 MHz Systems

Existing 800 MHz systems that are to be expanded to include the frequency bands of 700 MHz will have to meet requirements of both the 700 MHz and 800 MHz Region 33 plans. These systems will not be required to meet the reassignment requirements outlined in Section 3.10 of this plan. Available 800 MHz NPSPAC channels must be utilized, where applicable, before 700 MHz channels will be approved.

3.10 TV/DTV Stations during DTV Transition

Region 33 is currently impacted by a number of TV/DTV stations operating in channels 60-69 in the United States and Canada, thus, applicants must perform the necessary engineering analysis as outlined in Appendix (I) to ensure that no interference will occur from the applicant's system operation to existing TV/DTV stations. While analog full-power television broadcasting will end on February 17, 2009, some Canadian television operation may continue operations until the United States and Canada reach a treaty on the use of spectrum in the 700 MHz band. Region 33 will follow the requirements of the Commission[39] relative to the use of the 700 MHz spectrum at a location or locations north of Line A[40].

3.11 Design and Engineering Responsibilities

Spectrum efficiency is of primary importance in the development of systems. As high-level systems reach capacity, the smaller systems in the public safety service must consider uniting their communications efforts, using advanced technology, to formulate larger systems. Where smaller conventional 700 MHz subsystems needs are requested, those frequencies utilized must not interfere with the trunked systems.

Disruptive interference with communications will not be permitted. No co-channel interference within an authorized area of coverage will be tolerated and requests for channels will undergo engineering analysis, on a case-by-case basis, by a FCC certified frequency coordinators. Section 5 of this plan outlines frequency coordination technical requirements and responsibilities and Appendices F and I provide important engineering information. Applicants for radio communications in the 700 MHz public safety services in Region 33 will be required to provide channel loading criteria information for the proposed system. The provisions of the Region 33 plan must be used as a guide for establishing any new system. Strict adherence for limiting area coverage to the boundaries of the applicant's jurisdiction must be observed. Overlap or extended

[39] *See* 47 CFR § 90.533
[40] *See* 47 CFR § 90.7

coverage must be minimized even where systems utilizing 700 MHz trunked radio systems are proposing to inter mix systems for cooperative and/or mutual aid purposes.

Antenna heights are to be limited to provide only the necessary coverage of the applicant. When antenna locations are restricted to only the "high ground" transmitter outputs and special antenna patterns must be employed to produce the necessary coverage with the proper amount of ERP. All necessary precautions must be taken to gain maximum reuse of the 700 MHz spectrum.

The Region acting together with the FCC certified frequency coordinators are responsible for the coordination of the 700 MHz spectrum and will be responsible for the engineering consideration of an application. Separation of co-channel transmitters will be determined using the most recent version of TIA/EIA TSB88-A, coverage needs of the applicant, natural separation barriers, antenna patterning, and limited ERP, where possible. System tests and/or propagation studies should also be provided to establish minimum distances for separation. (See Appendix F)

Six (6) metropolitan areas, described in Section 1.6 of this plan, consist of heavy industrial, commercial and high rise structures that may require enhanced coverage. Agencies in these areas may propose increased signal strength to 50 dBu within their operational jurisdictions in order to attain in-building coverage. These areas must limit coverage to five (5) miles outside their operational jurisdiction.

3.12 Reassignment of Frequencies

It is anticipated that, in all but the most unusual cases, most frequencies outside of the 700 MHz band presently utilized by a licensee will be turned back for reassignment when applying for new 700 MHz channels. The FCC certified frequency coordinators are responsible for assignment of these channels. Normal application and coordination procedures will be followed with returned channels to the appropriate pool. It is not consistent with the goals and objectives of Region 33 to permit direct reassignment of radio frequencies between agencies. All VHF and UHF frequencies are to be returned to their respective radio service pool for assignment. Also, agencies shall not informally reassign frequencies to other radio services within their political structure simply to take advantage of surplus equipment and frequencies. Agencies must submit a letter with their application for 700 MHz channels; addressed to the FCC, outlining the channels they will turn back for reassignment and a reasonable date that the channels will be returned to the appropriate pool.

The RPC Technical subcommittee will carefully review applications to determine if the applicant intends to relinquish the appropriate number of channels. If the subcommittee determines that an insufficient number of frequencies are not being returned by the applicant, the matter will be brought before the RPC at either a special or regularly scheduled meeting for a review and vote of the membership. If the RPC agrees with the

subcommittee's determination, the application will be returned to the applicant for further review.

After the RPC and applicant have agreed to the specific channels to be returned for reassignment, the applicant's agency will modify the existing FCC licensee(s), through the certified FCC frequency coordinator, that processes the channels agreed upon. The coordinator will move the designated channels from the original call sign and create a new one, which will be attached to a newly created FCC FRN number. Part of the reassignment agreement will be for the agency to provide the RPC the authority, and password, to use the FRN number associated with the reassigned channels to cancel the new call sign on the agreed upon date when the new 700 MHz allotments are implemented. This will enable other agencies in the area to benefit from the applicant's reassigned legacy radio channels. It is anticipated that agencies need a migration period that will vary in length where agencies will be utilizing both existing channels and their new 700 MHz allotment.

Expansion of existing 800 MHz systems with the use of 700 MHz channels, LEERN, Inter-City, statewide fire and sheriff's mutual aid or SIEC designated inter-operability channels and "Microwave" radio frequencies or systems licensed within the "Microwave Public Safety Pool" (Radio Service Code "MW") will be exempt from reassignment.

3.13 Implementation of Channels

Should system implementation not begin within two (2) years, or if projected planned channel loading is not attained within four (4) years after granting of license, the Region will communicate with the FCC requesting that the channels be returned for re-assignment to others. A one (1) year extension may be supported by the RPC if it can be shown that circumstances are beyond the control of the applicant. The applicant will be responsible for contacting the FCC to request an extension. Applicants must be acting to the fullest extent of their power to implement the project within their authority.

System implementation will be monitored by the RPC Implementation subcommittee who will be responsible for determining the progress being made on implementation. Monitoring of systems implementation by the subcommittee will take place on one (1) year intervals. If progress is made and the system is ultimately implemented the system can be determined "complete". If progress is not made, the licensee will be advised in writing that they are in default of their plan, and the Region 33 plan, and the consequences of their lack of progress. The Implementation subcommittee will inform the RPC and PW frequency coordinator of the situation. The Implementation subcommittee will continue to monitor the progress of any system determined in default and if progress is still not being made the subcommittee will inform the RPC and recommend informing the FCC of the lack of progress. The licensee in default can appeal this action or can allow the license to be withdrawn. If the authorized frequencies are withdrawn they will be returned to the frequency allotment pool for future use.

3.14 Interoperability Channels

Interoperability between federal, state, and local governments during daily, emergency and disaster operations will normally take place on the interoperability channels identified in the state and the national plan. Additionally, through the use of an S-160 and MOU or equivalent agreement(s), (See Appendix H), a licensee may permit federal agency use of non-federal communication system spectrum if deemed appropriate. Such use, on other than interoperability channels, is to be in full compliance with FCC requirements governing the use of spectrum.

The State of Ohio[41] will administer the interoperability channels via a State Interoperability Executive Committee (SIEC) under NCC guidelines. If the state is unable to form a SIEC and develop interoperability operating procedures then this Regional Planning Committee will do so. The following are some recommendations of the Region to the SIEC:

A. Tactical Channels

All mobile and portable units operating in this region should have all the interoperability channels as specified by the Region operating through delegation by the State of Ohio[42], in both repeat and direct modes, programmed into each 700 MHz mobile and portable radio[43]. The radio must be programmed with the minimum number of channels called for in the NCC guidelines or as the SIEC specifies. The channel display will be in accordance with the guidelines adopted by the National Public Safety Telecommunications Council.

B. Deployable Systems

This plan strongly supports use of deployable systems, both conventional and trunked. Deployable systems are prepackaged systems that can deploy by ground or air to an incident to provide additional coverage and capacity on interoperability channels. This will minimize the expense of installing extensive fixed infrastructure and recognizes the difficulty of providing coverage of the region due to environmental constraints.

Agencies should have conventional deployable systems capable of being tuned to any of the interoperability tactical channels. Those agencies that are part of a multi-agency trunked system that commonly provide mutual aid to each other are encouraged to have trunked deployable systems that operate on the tactical channels designated by the FCC for interoperability use. The SIEC should develop the operational details for deploying these systems.

[41] *See* 47 CFR §90.525(a)
[42] *See* 47 CFR §90.525(b)
[43] *See* 47 CFR §90.547

It is expected that the tactical channels set aside for trunked operation will be heavily used by deployable systems. Therefore, the tactical channels cannot be assigned to augment general use trunked systems.

C. Monitoring of Calling Channels

It is desired that the state of Ohio take responsibility for monitoring the interoperability calling channels. This would include assignment of channels to mutual aid incidents as required. The SIEC will develop operational guidelines for this function.

D. Interoperability Incident Command System Standards

The 700 MHz allocation and the NCC requires that interoperability channel usage employ the ICS standards and offers the SIEC an opportunity to incorporate interoperability standards within all public safety bands in the region.

E. Air to Ground (previously known as secondary trunked channels)

In its Report and Order (FCC 14-172) dated October 24, 2014 the FCC re-designated the 700 MHz Secondary Trunked channels and reserved them for specific Air to Ground communications between low-altitude aircraft and associated ground stations. The secondary channels are the most suitable channels for this specific Air to Ground purpose as they have no incumbents and little risk of co-channel interference since there are no current Secondary Trunked licensees.

The eight (8) 12.5 KHz Air to Ground channels are listed below:

FCC Channel	Base	Mobile	Status
21-22	769.131250	799.131250	Available
101-102	769.631250	799.631250	Available
181-182	770.131250	800.131250	Available
261-262	770.631250	800.631250	Available
659-660	773.118750	803.118750	Available
739-740	773.618750	803.618750	Available
819-820	774.118750	804.118750	Available
899-900	774.618750	804.618750	Available

The FCC also adopted a two (2) watt ERP limit for the use of these channels along with restricting airborne use of these channels to altitudes below 1500 feet Above Ground Level (AGL) to limit area impacted by the airborne operations. Given the proximity of these Secondary Trunking Channels to the designated Interoperability channels in the 700 MHz band (immediately adjacent to), the FCC assigned the responsibility for coordinating these channels to each state while permitting aircraft use on both the upper and lower portion of each Secondary Trunked Channel pair.

Region 33 will collaborate with the Ohio SIEC to administer and manage the Air to Ground Channels (secondary trunk channels).

3.15 Use of Former Reserve Channels

The FCC has designated the former "Reserve" channels for use of the RPCs under FCC 14-172. These channels may be considered a "pool" of frequencies to be used on a first come, first served basis in those areas where the entire allotment of 700 channels has already been used or in areas where certain channels are precluded from use either by adjacent region or adjacent channel dispute.

The channels are set forth in 47CRF90.531(b)(2) as:
37, 38, 61, 62, 77, 78, 117, 118, 141, 142, 157, 158, 197, 198, 221, 222, 237, 238, 277, 278, 301, 302, 317, 318, 643, 644, 683, 684, 699, 700, 723, 724, 763, 764, 779, 780, 803, 804, 843, 844, 859, 860, 883, 884, 923, 924, 939, 940, 997, 998, 1021, 1022, 1037, 1038, 1077, 1078, 1101, 1102, 1117, 1118, 1157, 1158, 1181, 1182, 1197, 1198, 1237, 1238, 1261, 1262, 1277, 1278, 1603, 1604, 1643, 1644, 1659, 1660, 1683, 1684, 1723, 1724, 1739, 1740, 1763, 1764, 1803, 1804, 1819, 1820, 1843, 1844, 1883, 1884, 1899, 1900.

DEPLOYABLE TRUNKED CHANNELS

On February 13, 2015, NPSTC and the NRPC recommended a set of six former reserve channels (12.5 kHz bandwidth) to be allocated nationwide for 700 MHz deployable systems. In Public Notice DA 15-483 of April 23, 2015, the FCC approved the NPSTC/NRPC recommendation. Channels available for deployable use in Region 33 are listed below:

Deployable Trunked Channel	Channel Number	Base Frequency	Mobile Frequency
A	37-38	769.23125	799.23125
B	61-62	769.38125	799.38125
C	117-118	769.73125	799.73125
D	141-142	769.88125	799.88125
E	883-884	774.51875	804.51875
F	939-940	774.86875	804.86875

MOBILE REPEATER CHANNELS

Region 33 adds former reserve channels (12.5 KHz bandwidth) 77-78 and 157-158 to be utilized as 2 watt vehicular repeater frequencies (MO3), to be coordinated for and specifically for use with 800 MHz systems in the region due to the needed separation between these frequencies and those utilized by public safety in the 800 MHz band.

We also add former reserve channels (12.5 KHz bandwidth) 859-860 and 923-924 as 2 watt non-800 MHz vehicular repeater frequencies (MO3) to be coordinated for use with other systems in the region.

Vehicular Repeater Channel	Channel Number	Base Frequency	Mobile Frequency
A	77-78	769.481250	799.481250
B	157-158	769.981250	799.981250
C	859-860	774.368750	804.368750
D	923-924	774.768750	804.768750

"FLOATING" GENERAL USE CHANNELS

We modify the Region 33 700 MHz plan to utilize the remaining former 12.5 KHz reserve channels as "floating allotments" to supplement the existing General Use allotments in each region: 197-198, 221-222, 237-238, 277-278, 301-302, 317-318, 643-644, 683-684, 699-700, 723-724, 763-764, 779-780, 803-804, 843-844. Allowing these remaining channels to supplement the existing General Use allotments utilized within the region will promote maximum flexibility of the use of these channels in each region.

"Floating General Use Channel	Channel Number	Base Frequency	Mobile Frequency
A	197-198	770.231250	800.231250
B	221-222	770.381250	800.381250
C	237-238	770.481250	800.481250
D	277-278	770.731250	800.731250
E	301-302	770.881250	800.881250
F	317-318	770.981250	800.981250
G	643-644	773.018750	803.018750
H	683-684	773.268750	803.268750
I	699-700	773.368750	803.368750
J	723-724	773.518750	803.518750
K	763-764	773.768750	803.768750
L	779-780	773.868750	803.868750
M	803-804	774.018750	804.018750
N	843-844	774.268750	804.268750

These channels are available to all existing allotments where the channel use can be most optimum. Region 33 will utilize the same intra-region and inter-region coordination practices with these new, flexible General Use allotments as in use in our current plan.

4. PROCESSING AND EVALUATING APPLICATIONS

4.1 Region 33 Application Requirements

To request channels in Region 33 a full application package must be submitted by CAPRAD at http://caprad.nlectc.du.edu/cp/index.jsp . The application must contain the following:

- Completed FCC ULS 601 Form(s);
- Statement of need for installing a new 700 MHz system to include an explanation of the budget commitment for the proposed system with agency budgets and funding sources
- Explanation of the systems future growth for all agencies involved in the system
- Explanation of how the system will interface with long distance radio communications, such as; amateur radio, satellite communications, and/or long range emergency preparedness communications systems
- Details of engineering surveys and/or maps showing radio coverage will not exceed the applicant's requirements or create interference to other systems, TV or Canadian broadcasters
- List all participating agencies radio frequencies. Describe how they are utilized and the date they are to be returned to the appropriate pool

- Explain how the system will communicate with other services in other bands and certify that the applicant's agency will comply with the interoperability requirements of the SIEC plan
- Any 800 MHz systems that are expanding to 700 MHz channels shall explain how they plan to meet the interoperability requirements of both plans
- List mobile and portable units by agency inventory
- Indicate the PW frequency coordinator the applicant desires to have co-ordinate the license application (AASHTO, APCO, FCCA, or IMSA)
- Applicants shall provide a review analysis of the approval matrix scoring components, found in Appendix (K) of this plan, and incorporate the point score their application has attained which will be reviewed by the Technical Subcommittee if a competing application is received

The Chair will distribute the application request to other agencies with allotments from CAPRAD in the plan for review. Adjacent regions will be informed if they are affected by the application. Absent disputes from other agencies, applications will be reviewed by the Region 33 planning committee to assure compliance with the plan and approved. The RPC will note approval on the application and forward it to the designated coordinator for technical review. The CAPRAD database will reflect the approved application and place the channels for the proposed system in "pre-license" status. Upon approval by the frequency coordinator the application will be forwarded to the FCC for licensure. Any conflicts encountered during the process will be returned for resolution.

4.2 Applicant Evaluation

The applicant evaluation criteria established in the NCC process, and as further defined in this plan[44], will be followed for approval. All requests will be considered on a first come, first serve basis. In cases, where specific frequency allotments are requested by numerous applicants at the same time, the applicant evaluation matrix point system contained in Appendix (K) will be utilized to determine the successful applicant. In all cases, area of coverage, technical requirements, and channel loading criteria will be applied. Exceptions may apply upon unique circumstances, after review and approval by the RPC. Deviations from FCC rules are not to be approved unless a fully justified waiver request has been presented to the RPC. The Region 33 Technical subcommittee will evaluate and process applications within thirty (30) days after notified of receipt by CAPRAD.

4.3 Intra-Region Dispute Resolution and Appeals Process

It is the intent of this RPC to resolve disputes in a timely and fair manner to all parties. Minor disputes may be brought before the RPC chair for resolution. If the chair can not resolve the dispute within two (2) weeks, or the dispute is complex, adversarial, or the chair is party to the dispute, then the grievant must follow the formal Appeals Process outlined in Appendix (L).

[44] *See* 47 CFR §90.527(a)(4)

5. PROCEDURES FOR FREQUENCY COORDINATION

5.1 Process

Region 33 has accepted the CAPRAD assignment of narrowband channels, without modification and incorporated the modified assignments into the Plan.

5.2 Coverage

It is the responsibility of the licensee to restrict or limit the coverage to the area of the applicant's jurisdiction and in the case of formal mutual aid agreements, to the service district area as approved by the Region. It is expected that the most recent version of TIA/EIA TSB88-C will be used. This plan uses the same standard developed for the 800 MHz NPSPAC plan as follows: the desired coverage of a system is considered to be, as a maximum, three (3) miles outside of the boundary of the applicant's serviced jurisdiction. The maximum "designed mean signal strength" at this contour shall be at least +40dBu or greater (+40dB above one micro-volt per meter), using five (5) feet above ground with a ¼ wave whip antenna. In order to allow for practical system design, the three (3) mile pad may be altered on a case-by-case basis, and the maximum/minimum coverage radius in all cases shall not exceed five (5) miles.

5.3 Interference

Engineering analysis for co-channel and adjacent channel assignments will be made in accordance with most recent version of TIA/EIA TSB88-C and the best available information on the technology proposed for or occupying the co-channel and adjacent channel(s). This plan will not protect agencies from interference if their systems utilize low quality receivers.

5.4 700 MHz Public Safety Frequency Pre-Coordination Database

The purpose of the Computer Assisted Pre-Coordination Resource and Database (CAPRAD) is to create a nationwide centralized database to manage the distribution of 700 MHz public-safety spectrum. CAPRAD will serve as a central repository of 700 MHz frequency information including regional plans, application submittals, approvals, coordination, and licensure. Applicants will be able to make application, receive regional approval, acquire coordination from their selected coordinating body and submit application to the FCC for licensure via CAPRAD. By using CAPRAD, pre-coordination is accomplished by the system as it designs the allotment based on a distribution of voice channel frequencies to every county in the continental United States. CAPRAD utilizes population density, census data, height above average terrain (HAAT) and public safety use curves generated by the Public Safety Wireless Advisory Committee to provide spectrally efficient channel assignments to specific counties. Border considerations are also designed in the algorithm of the system.

The CAPRAD system features website access with a graphical user interface, an informational front page and secure access for registered users. The system is comprised of several interactive, relational databases that provides a frequency availability "notebook", search and report generating tools, interface to the FCC's automated systems. This access includes the Universal Licensing System (ULS) with nightly data comparison and updates, and on-line help features for queries, entries and updates.

The system also serves as a repository for supplemental information such as; completed regional and state plans, a list of television channels with potential impact, contact information for RPC chairpersons or others as required, and RPC frequency limitations by regions and adjacent regions and will serve as a coordination tool for all public safety frequency coordinators.

6. ADJACENT REGION COORDINATION

6.1 Adjacent Region Review

Region 33 has adopted the use of the CAPRAD system for frequency allotments and management. This region will post its 700 MHz plan on the CAPRAD system for review and comment from adjacent regions. The use of CAPRAD will virtually eliminate the need for detailed border coordination with neighboring regions if they incorporate CAPRAD for assignment of voice channels.

6.2 Inter-Region Coordination and Dispute Resolution[45]

Region 33 has adopted the standard "Inter-Regional Coordination Agreement". In the event that a dispute arises between Region 33 and any adjacent Region or Regions, regarding spectrum allocations or implementation, that cannot be resolved within sixty (60) day the parties to the dispute will request a hearing before the National Regional Planning Oversight Committee. Details and a signed agreement with adjacent Regions can be found in Appendix (N).

6.3 Use of CAPRAD in adjacent Regions

The NCC Implementation Subcommittee has recommended that all regions use the CAPRAD allotment of channels to facilitate coordination with adjacent regions. This will allow spectrum allotments for regions that do not immediately form a 700 MHz planning committee. Counties or other geographic subdivisions within 70 miles of a regional border must share spectrum with adjacent region(s). The sharing is built in to the CAPRAD channel packing program, as it views all counties, nationwide, as separate entities while ignoring state borders. With all criteria being equal, this ensures all counties are provided sufficient spectrum in relation to their surrounding counties. The appropriate ration of channels shall be allotted to counties in adjacent regions based upon each county's population. A 25 kHz block of four (4) consecutive 6.25 KHz channels will be used to distribute spectrum between regions. Included is a description of affected border areas demographics.

[45] *See* 47 CFR §90.527(a)(5)

7. FUTURE PLANNING

The initial process of assignments will be known as Window One. In this window, the CAPRAD pre-coordination database will be employed as the initial basis of channel allotments for geographical areas within Region 33, including the independent cities using criteria such as current population, 2000 Census data, height above average terrain (HAAT), and public safety use curves generated by the Public Safety Wireless Advisory Committee (PSWAC) or other relevant data to provide spectrally efficient frequency allotments.

In Window One, all channels identified in this Plan will be available to applicants. In addition, channels may be provided to an applicant pursuant to the provisions of this Plan.

Applications for channels shall be submitted to the Technical Committee and reviewed by the Regional Committee for vote at the next scheduled meeting.

The initial window will be open from time of Commission approval of the Plan and further from that date, for a period of three (3) years. Three (3) years after the approval of the Plan by the Commission, Window One will close.

Channel allocations as approved by the Region 33 Technical Committee will be updated and maintained within the CAPRAD database.

7.1 Windows of Future Channel Assignments

In the future, Region 33 will issue channels in 700 MHz under a continual process in which there will be a second filing windows for applicants. This window for applications will be known as Window Two and will become effective upon the expiration of Window One.

When Window Two opens in the future, any channel in any geographical area not assigned to a licensee becomes open and available to any other applicant provided that no harmful co-channel and/or adjacent channel user is created through a reassignment of the channel.

7.2 Review of the Plan's Effectiveness

As a standing agenda item for every meeting of Region 33, the Chair of the Technical Committee shall provide a report to the membership detailing the use of the spectrum and any administrative or operational issues arising from this Plan. In addition, the meeting Chair shall invite comments from members and any other persons in attendance at meetings relative to the effectiveness of the Plan.

At any time in which the Region Chair or the Chair of the Technical or Operations Committees has reason to believe that a provision of the Plan is adversely affecting public safety communications within Region 33, the Chairperson or Vice Chairperson operating in their absence has an affirmative responsibility to report the issues to the appropriate Committee for immediate attention.

Upon review of the reported conflict no later than sixty (60) days after the initial allegation; the appropriate Chair shall report the Committee's findings to the Region 33 Chairperson. The Region 33 Chairperson shall review the findings of the Committee reviewing the allegation. Depending upon the findings of the Chairperson of Region 33, one of three possible outcomes will be initiated.

A. Allegation Unfounded – No further action is Required. The person reporting the alleged issue shall be informed of the Region's decision.

B. Allegation Founded – Immediate Action not Required. When there is an affirmative finding of a problem with the Region's Plan and the matter can be appropriately deferred until placed on the agenda of the next meeting, the deferral of action is appropriate.

C. Allegation Founded – Immediate Action Required. When the Chairperson of Region 33 finds that a provision of the Plan is causing or may cause adverse impact to an applicant or potential applicant, the Chairperson may take executive action and grant relief by temporarily suspending a provision of this Plan until a Regional Meeting can be called. In the event that executive action is taken and a provision of this Plan is suspended, the effective period of suspension shall not extend beyond sixty (60) days unless ratified by the Region at a meeting called in response to the Chairperson's findings and executive action.

7.3 Inter-Regional Dispute Resolution Process

As executed and placed in this Plan, each Regional Planning Committee has signed an Inter-Regional Dispute Resolution Agreement. The Regions will follow the procedures included in the Dispute Resolution Agreement.

7.4 Modifications to the Plan

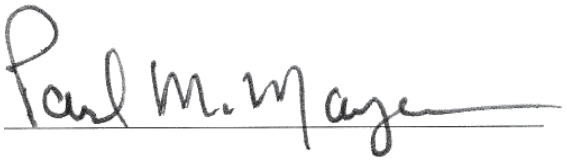
In recognition that there will be amendments made to the Plan, the bylaws of the Region 33 700 MHz Planning Committee incorporate provisions permitting the amendments as may be necessary.

The Region 33 Plan will be modified when required by submitting a written request, signed by the regional planning committee, to the Chief, Public Safety and Homeland Security Bureau. The request will contain the full text of the modification, and certify that successful coordination of the modification with all adjacent regions has occurred and that all such regions concur with the modification.

8.1 CERTIFICATION

8.2 Chairman Certification Signature[46]

I hereby certify that all planning committee meetings, including subcommittee or executive committee meetings were open to the public. A summary of the Region 33 deliberations pursuant to the development of this plan can be found in Appendix (E).

Signed 

[46] *See* 47 CFR §90.527(a)(8)

Appendix A - Region 33 Members

This listing is provided in compliance with §90.527(a)(1)

Robert Armstrong
Sylvania Police
6636 Maplewood Ave.
Sylvania, Ohio 43560
419-885-8903
chief.tele@sylvaniapolice.com
Voting member

Greg Berquist, Vice Chair
Lima County SO/BSSA
333 North Main St.
Lima, Ohio 45801
419-993-1424
berquist@wcoil.com
Voting member

Robert Bill
Ohio Emergency Management Agency
2855 W. Dublin-Granville Rd.
Columbus, Ohio 43226
614-799-3640
bbill@dps.state.oh.us
Voting member

David Borden
Columbus Fire
220 Greenlawn Ave.
Columbus, Ohio 43223
614-645-5776
dmborden@cmhmetro.net
Voting member

Kenny Brooks
Ohio Department of Transportation
1980 W. Broad St.
Columbus, Ohio 43223
Kenny.brooks@dot.state.oh.us
Voting member

Dennis Cole
Lucas County
2144 Monroe St.
Toledo, Ohio 43624
dcole@co.lucas.oh.us
Voting member

Richard Elliott
Warren County
500 Justice Dr.
Lebanon, Ohio 45036
513-695-1319
relliott@telecom.co.warren.oh.us
Voting member

Michael Engelhaupt
M/A Com., Inc.
4002 N. Hampton Dr.
Powell, Ohio 43065
614-734-0105
engelham@tycoelectronics.com
Non-voting member

Lynne Feller
Wayne County
201 W. North St.
Wooster, Ohio 44691
330-287-5700
lcf911@aol.com
Voting member

Larry Fisher
Delaware County
10 Court St.
Delaware, Ohio 43015
740-833-2163
lfisher@co.delaware.oh.us
Voting member

George Franey
Mifflin Township Police/OACP
155 Olde Ridenour Rd.
Gahanna, Ohio 43230
614-471-3548
gwfraney@aol.com
Voting member

Matt Franke
City of Oxford
101 E. High St.
Oxford, Ohio 45056
513-524-5252
mfranke@cityoxford.com
Voting member

William Halsey
Lucas County Emergency Mgmt.
2144 Monroe St.
Toledo, Ohio 43624
419-213-6503
whalsey@co.lucas.oh.us
Voting member

John Hawn
M/A Com., Inc.
4002 N. Hampton Dr.
Powell, Ohio 43065
614-734-0103
hawnj@tycoelectronics.com
Non-voting member

William Hopstetter
Ohio Dept. of Natural Resources
1894 Fountain Square Ct.
Columbus, Ohio 43224
614-265-6854
bill.hopstetter@dnr.state.oh.us
Voting member

Greg Keefer
Newark Fire
75 S. 4th St.
Newark, Ohio 43055
740-349-6754
g-roy@prodigy.net
Voting member

Paul Kindell
Warren County
500 Justice Dr.
Lebanon, Ohio 43036
513-695-1318
pkindell@wcoh.net
Voting member

Barry King
Cincinnati Police
310 Ezzard Charles Dr.
Cincinnati, Ohio 45214
513-352-2595
barry.king@cinpd.rcc.org
Voting member

Aaron Giles
TRW Corp.
2885 W. Dublin-Granville Rd.
Dublin, Ohio 43235
614-985-1252
aaron.giles@trw.com
Non-voting member

Paul Mayer
Ohio Dept. of Admin. Services
1320 Arthur E. Adams Dr.
Columbus, Ohio 43221
614-995-0063
paul.mayer@das.state.oh.us
Voting member

Bruce Moritz
Allen-Clay Joint Fire Dept.
400 Main St.
Clay Center, Ohio 43408
419-885-4733
moritz301@toast.net
Voting member

Satoru Persons
Franklin County
373 S. High St.
Columbus, Ohio 43215
614-462-4255
siperson@co.franklin.oh.us
Voting member

Scott Skeldon
Ohio Fire Chiefs Association
9689 U.S. Route 42
Plain City, Ohio 43064
614-873-8990
ChiefSkeldon@aol.com
Voting member

Paul Slaughter
Union County SO
221 W. Fifth St.
Marysville, Ohio 43040
937-645-4127
pslaughter@co.union.oh.us
Voting member

Raymond Smith / Chair
State of Ohio – MARCS Program
940 Matterhorn Dr.
Reynoldsburg, Ohio 43068
614-863-2808
rsmith4@insight.rr.com
Voting member

Steven Smith
Licking County Emergency Mgmt.
155 E. Main St.
Newark, Ohio 43055
740-349-6437
ssmith@lcounty.com
Voting member

Jay Somerville
City of Dublin
6565 Commerce Pkwy.
Dublin, Ohio 43017
614-410-4816
jsomerville@dublin.oh.us
Voting member

Reggie Strauss
Davis-Besse NPP
5501 N. State Route 2
Oak Harbor, Ohio 43449
419-221-7235
rwstrauss@firstenergycorp.com
Voting member

Carlton Stroop
State Highway Patrol
1970 W. Broad St.
Columbus, Ohio 43223
614-466-2393
cstroop@dps.state.oh.us
Voting member

John Tracy
Delaware County
10 Court St.
Delaware, Ohio 43015
740-833-2160
jtracy@co.delaware.oh.us
Voting member

Thomas Trufant
City of Columbus
220 Greenlawn Ave.
Columbus, Ohio 43223
tatrufant@cmhmetro.net
Voting member

Holly Wayt
City of Westerville
29 S. State St.
Westerville, Ohio 43081
614-901-6799
hewayt@ci.westerville.oh.us
Voting member

Michael Wren
Montgomery County
2712 Springboro Pike
Dayton, Ohio 45439
937-496-7042
wrenm@mcohio.org
Voting member

David Ziegler
Columbus Police
220 Greenlawn Ave.
Columbus, Ohio 43223
614-645-7344
daziegler@cmhmetro.net
Voting member

Donald Svoboda
Motorola Corp.
12955 Snow Rd.
Parma, Ohio 44253
216-265-2188
don.svoboda@motorola.com
Non-voting member

David Waddell
Butler County SO
301 S. Third St.
Hamilton, Ohio 45011
dpw513@aol.com
Voting member

Greg Wentz
Hamilton County
2377 Civic Center Dr.
Cincinnati, Ohio 45231
513-575-8445
greg.wenz@hcc.hamilton-co.org
Voting member

David Zawodny
City of Toledo
3917 Imla
Toledo, Ohio 43612
419-936-2539
david.zawodny@ci.toledo.oh.us
Voting member

Chris Zigo
Motorola Corp.
5671 Wilcox Rd.
Dublin, Ohio 43016
614-799-0963
chris.zigo@motorola.com
Non-voting member

Appendix B - Region 33 Population Trends

County	1960	1970	1980	1990	2000
Ohio	9,706,397	10,652,017	10,797,630	10,847,115	11,353,140
Adams	19,982	18,957	24,328	25,371	27,330
Allen	103,691	111,144	112,241	109,755	108,473
Ashland	38,771	43,303	46,178	47,507	52,523
Ashtabula	93,067	98,237	104,215	99,821	102,728
Athens	46,998	54,889	56,399	59,549	62,223
Auglaize	36,147	38,602	42,554	44,585	46,611
Belmont	83,864	80,917	82,569	71,074	70,226
Brown	25,178	26,635	31,920	34,966	42,285
Butler	199,076	226,207	258,787	291,479	332,807
Carroll	20,857	21,579	25,598	26,521	28,836
Champaign	29,714	30,491	33,649	36,019	38,890
Clark	131,440	157,115	150,236	147,548	144,742
Clermont	80,530	95,725	128,483	150,187	177,977
Clinton	30,004	31,464	34,603	35,415	40,543
Columbiana	107,004	108,310	113,572	108,276	112,075
Coshocton	32,224	33,486	36,024	35,427	36,655
Crawford	46,775	50,364	50,075	47,870	46,966
Cuyahoga	1,647,895	1,721,300	1,498,400	1,412,140	1,393,978
Darke	45,612	49,141	55,096	53,619	53,309
Defiance	31,508	36,949	39,987	39,350	39,500
Delaware	36,107	42,908	53,840	66,929	109,989
Erie	68,000	75,909	79,655	76,779	79,551
Fairfield	63,912	73,301	93,678	103,461	122,759
Fayette	24,775	25,461	27,467	27,466	28,433
Franklin	682,962	833,249	869,132	961,437	1,068,978
Fulton	29,301	33,071	37,751	38,498	42,084
Gallia	26,120	25,239	30,098	30,954	31,069
Geauga	47,573	62,977	74,474	81,129	90,895
Greene	94,642	125,057	129,769	136,731	147,886
Guernsey	38,579	37,665	42,024	39,024	40,792
Hamilton	864,121	924,018	873,224	866,228	845,303
Hancock	53,686	61,217	64,581	65,536	71,295
Hardin	29,633	30,813	32,719	31,111	31,945
Harrison	17,995	17,013	18,152	16,085	15,856

Henry	25,392	27,058	28,383	29,108	29,210
Highland	29,716	28,996	33,477	35,728	40,875
Hocking	20,168	20,322	24,304	25,533	28,241
Holmes	21,591	23,024	29,416	32,849	38,943
Huron	47,326	49,587	54,608	56,240	59,487
Jackson	29,372	27,174	30,592	30,230	32,641
Jefferson	99,201	96,193	91,564	80,298	73,894
Knox	38,808	41,795	46,304	47,473	54,500
Lake	148,700	197,200	212,801	215,499	227,511
Lawrence	55,438	56,868	63,849	61,834	62,319
Licking	90,242	107,799	120,981	128,300	145,491
Logan	34,803	35,072	39,155	42,310	46,005
Lorain	217,500	256,843	274,909	271,126	284,664
Lucas	456,931	484,370	471,741	462,361	455,054
Madison	26,454	28,318	33,004	37,068	40,213
Mahoning	300,480	303,424	289,487	264,806	257,555
Marion	60,221	64,724	67,974	64,274	66,217
Medina	65,315	82,717	113,150	122,354	151,095
Meigs	22,159	19,799	23,641	22,987	23,072
Mercer	32,559	35,265	38,334	39,443	40,924
Miami	72,901	84,342	90,381	93,182	98,868
Monroe	15,268	15,739	17,382	15,497	15,180
Montgomery	527,080	606,148	571,697	573,809	559,062
Morgan	12,747	12,375	14,241	14,194	14,897
Morrow	19,405	21,348	26,480	27,749	31,628
Muskingum	79,159	77,826	83,340	82,068	84,585
Noble	10,982	10,428	11,310	11,336	14,058
Ottawa	35,323	37,099	40,076	40,029	40,985
Paulding	16,792	19,329	21,302	20,488	20,293
Perry	27,864	27,434	31,032	31,557	34,078
Pickaway	35,855	40,071	43,662	48,255	52,727
Pike	19,380	19,114	22,802	24,249	27,695
Portage	91,798	125,868	135,856	142,585	152,061
Preble	32,498	34,719	38,223	40,113	42,337
Putnam	28,331	31,134	32,991	33,819	34,726
Richland	117,761	129,997	131,205	126,137	128,852
Ross	61,215	61,211	65,004	69,330	73,345
Sandusky	56,486	60,983	63,267	61,963	61,792
Scioto	84,216	76,951	84,545	80,327	79,195
Seneca	59,326	60,696	61,901	59,733	58,683

Shelby	33,586	37,748	43,089	44,915	47,910
Stark	340,345	372,210	378,823	367,585	378,098
Summit	513,569	553,371	524,472	514,990	542,899
Trumbull	208,526	232,579	241,863	227,813	225,116
Tuscarawas	76,789	77,211	84,614	84,090	90,914
Union	22,853	23,786	29,536	31,969	40,909
Van Wert	28,840	29,194	30,458	30,464	29,659
Vinton	10,274	9,420	11,584	11,098	12,806
Warren	65,711	84,925	99,276	113,909	158,383
Washington	51,689	57,160	64,266	62,254	63,251
Wayne	75,497	87,123	97,408	101,461	111,564
Williams	29,968	33,669	36,369	36,956	39,188
Wood	72,596	89,722	107,372	113,269	121,065
Wyandot	21,648	21,826	22,651	22,254	22,908

Appendix C - Meeting Notices, Comments and Submissions

Meeting Notices

The Region 33 planning committee rigorously adhered to the NCC's guidelines for notifying interested parties on the 700 MHz planning process, to encourage participation.

Initial notices were placed on the FCC website, APCO state and national websites. Legal notices were placed in the Cleveland Plain Dealer, Columbus Dispatch and Cincinnati Inquirer newspapers that have wide distribution throughout Region 33 to notify readers of the first meeting.

Direct invitations were sent by e-mail to the following entities on January 4 and 5, 2001:

- American Association of State Highway and Transportation Officials, Inc. (AASHTO)
- Association of Public-Safety Communications Officials, Inc. (APCO)
- International Municipal Signal Association (IMSA)
- International Association of Fire Chief's (IAFC)
- Forestry Conservation Commission Association (FCCA)
- Ohio Fire Chief's Association
- Ohio Township Trustee's Association
- State and Local Government Association
- Ohio Municipal League
- County Commissioner's Association
- County Engineer's Association
- Ohio State Coroner's Association
- Ohio Association of Chief's of Police
- U.S. Department of Alcohol, Tobacco and Firearms
- U.S. Department of Justice
- Federal Bureau of Investigation
- U.S. Bureau of Indian Affairs
- Ohio Department of Public Safety
- Ohio Department of Youth Services
- Ohio Emergency Management Agency
- Ohio Highway Patrol
- Ohio Department of Administrative Services
- Ohio Department of Natural Resources
- Ohio Department of Transportation
- Ohio Public Utilities Commission
- Ohio Department of Rehabilitation and Correction
- Ohio Attorney General's Office
- TRW, Inc.
- ITT, Inc.

- Motorola, Inc.
- MA/Com, Inc

Region 33 continued to notify entities via e-mail announcing scheduled meetings during the planning process. Meeting notices were posted on the FCC website and the Ohio APCO website. Minutes from previous meetings were also posted on the Ohio APCO website.

Documents supporting the regions notices in newspapers are on file with the region chairman along with copies of the notices posted on the FCC's website. Copies are available for inspection if necessary.

PUBLIC NOTICE

Federal Communications Commission
445 12th St., S.W.
Washington, D.C. 20554

News media information 202 / 418-0500
Fax-On-Demand 202 / 418-2830
TTY 202 / 418-2555
Internet: http://www.fcc.gov
ftp.fcc.gov

DA 01-40
January 10, 2001

WIRELESS TELECOM ACTION

REGION 33 (OHIO) 700 MHz PUBLIC SAFETY PLANNING COMMITTEE ANNOUNCES FIRST MEETING

The Region 33 (Ohio) 700 MHz Public Safety Planning Committee announces that its first meeting will be held on February 28, 2001 at 10:00 a.m., at the State of Ohio Emergency Operations Center, 2855 West Dublin-Granville Road, Columbus, Ohio. The purpose of the meeting is to formulate a statewide plan for the future use of radio frequencies in the 764/776 and 794/806 MHz band. These frequencies would be utilized by all eligible public safety providers, whose sole or principal purpose is to protect the safety of life, health, or property in Ohio, pursuant to 47 U.S.C. §337(f)(1)(A). It is essential that participants be representatives of all eligible public safety providers in order to ensure that your agencies' future spectrum needs are considered in the allocation process. Administrators who are not oriented in the communications field should delegate someone with this knowledge to attend, participate and represent your agency's needs.

All interested parties wishing to participate in the planning for the use of new public safety spectrum in the 700 MHz band should plan to attend. For further information, please contact:

Raymond R. Smith, Convener
State of Ohio
Region 33, 700 MHz Public Safety Planning Committee
1320 Arthur E. Adams Drive, Rm. 402
Columbus, Ohio 43221
(614) 466-2257 (voice)
(614) 995-0071 (fax)
email: ray.smith@das.state.oh.us

PUBLIC NOTICE

Federal Communications Commission
445 12th St., S.W.
Washington, D.C. 20554

News media information 202 / 418-0500
Fax-On-Demand 202 / 418-2830
TTY 202 / 418-2555
Internet: http://www.fcc.gov
ftp.fcc.gov

DA 01-2923
December 18, 2001

WIRELESS TELECOMMUNICATIONS BUREAU ACTION

REGION 33 (OHIO) 700 MHz PUBLIC SAFETY PLANNING COMMITTEE ANNOUNCES FIFTH PLANNING MEETING

The Region 33 (Ohio) 700 MHz Public Safety Planning Committee announces that its fifth meeting will be held on February 20, 2002 at 10:30 a.m., at the Ottowa County Emergency Operations Center at 315 Madison Street (Courthouse basement), Port Clinton, Ohio. The purpose of the meeting is to continue the allocation planning process of the 700 MHz spectrum for public safety in Region 33 (Ohio). This spectrum would be utilized by all eligible public safety providers whose sole or principal purpose is to protect the safety of life, health, or property in Ohio. It is essential that participants be representatives of all eligible public safety providers in order to ensure that each agency's future spectrum needs are considered in the allocation process. Administrators who are not oriented in the communications field should delegate someone with this knowledge to attend, participate and represent your agency's needs.

All interested parties wishing to participate in the planning for the use of new public safety spectrum in the 700 MHz band should plan to attend. For further information, please contact:

Raymond R. Smith, Chairman
State of Ohio
Region 33, 700 MHz Public Safety Planning Committee
940 Matterhorn Drive
Reynoldsburg, OH 43068-1714
PH: 614-863-2808
FX: 614-995-0071
Email: rsmith4@insight.rr.com

PUBLIC NOTICE

Federal Communications Commission
445 12th St., S.W.
Washington, D.C. 20554

News media information 202 / 418-0500
Fax-On-Demand 202 / 418-2830
TTY 202 / 418-2555
Internet: http://www.fcc.gov
ftp.fcc.gov

DA 02-276
February 7, 2002

WIRELESS TELECOMMUNICATIONS BUREAU ACTION

REGION 33 (OHIO) 700 MHz PUBLIC SAFETY PLANNING COMMITTEE ANNOUNCES SIXTH PLANNING MEETING

The Region 33 (Ohio) 700 MHz Public Safety Planning Committee announces that its sixth meeting will be held on April 9, 2002 at 10:00 a.m., at the State of Ohio Emergency Operations Center at 2855 Dublin-Granville Road, Columbus, Ohio. The purpose of the meeting is to continue the allocation planning process of the 700 MHz spectrum for public safety in Region 33.

The Region 33 Public Safety Planning Committee meeting is open to the public. All eligible public safety providers whose sole or principal purpose is to protect the safety of life, health, or property in Ohio may utilize these frequencies. It is essential that not only public safety, but all government, Native American Tribal, and non-governmental organizations eligible under Section 90.523 of the Commission's Rules be represented in order to ensure that each agency's future spectrum needs are considered in the allocation process. Administrators who are not oriented in the communications field should delegate someone with this knowledge to attend, participate and represent your agency's needs.

All interested parties wishing to participate in the planning for the use of new public safety spectrum in the 700 MHz band should plan to attend. For further information, please contact:

Raymond R. Smith, Chairman
State of Ohio
Region 33, 700 MHz Public Safety Planning Committee
940 Matterhorn Drive
Reynoldsburg, OH 43068-1714
PH: 614-863-2808
FX: 614-995-0071
Email: rsmith4@insight.rr.com

PUBLIC NOTICE

News media information 202 / 418-0500
Fax-On-Demand 202 / 418-2830
TTY 202 / 418-2555
Internet: http://www.fcc.gov
ftp.fcc.gov

Federal Communications Commission
445 12th St., S.W.
Washington, D.C. 20554

DA 02-963
April 26, 2002

WIRELESS TELECOMMUNICATIONS BUREAU ACTION

REGION 33 (OHIO) 700 MHz PUBLIC SAFETY PLANNING COMMITTEE ANNOUNCES SEVENTH PLANNING MEETING

The Region 33 (Ohio) 700 MHz Public Safety Planning Committee announces that its seventh meeting will be held on June 26, 2002 at 10:30 a.m., at the Hamilton County Communications Center at 2377 Civic Center Drive, Cincinnati, Ohio. The purpose of the meeting is to continue the allocation planning process of the 700 MHz spectrum for public safety in Region 33.

The Region 33 Public Safety Planning Committee meeting is open to the public. All eligible public safety providers whose sole or principal purpose is to protect the safety of life, health, or property in Ohio may utilize these frequencies. It is essential that not only public safety, but all government, Native American Tribal, and non-governmental organizations eligible under Section 90.523 of the Commission's Rules be represented in order to ensure that each agency's future spectrum needs are considered in the allocation process. Administrators who are not oriented in the communications field should delegate someone with this knowledge to attend, participate and represent your agency's needs.

All interested parties wishing to participate in the planning for the use of new public safety spectrum in the 700 MHz band should plan to attend. For further information, please contact:

Raymond R. Smith, Chairman
State of Ohio
Region 33, 700 MHz Public Safety Planning Committee
940 Matterhorn Drive
Reynoldsburg, OH 43068-1714
PH: 614-863-2808

PUBLIC NOTICE

News media information 202 / 418-0500
Fax-On-Demand 202 / 418-2830
TTY 202 / 418-2555
Internet: http://www.fcc.gov
ftp.fcc.gov

Federal Communications Commission
445 12th St., S.W.
Washington, D.C. 20554

DA 02-1854
July 31, 2002

WIRELESS TELECOMMUNICATIONS BUREAU ACTION

REGION 33 (OHIO) 700 MHz PUBLIC SAFETY PLANNING COMMITTEE ANNOUNCES EIGHTH PLANNING MEETING

The Region 33 (Ohio) 700 MHz Public Safety Planning Committee announces that its eighth meeting will be held on September 26, 2002 at 10:00 a.m., at the Ohio Emergency Management Center at 2855 West Dublin-Granville Rd., Columbus, Ohio. The purpose of the meeting is to continue the allocation planning process of the 700 MHz spectrum for public safety in Region 33 (Ohio).

The Region 33 Public Safety Planning Committee meeting is open to the public. All eligible public safety providers whose sole or principal purpose is to protect the safety of life, health, or property in Ohio may utilize these frequencies. It is essential that not only public safety, but all government, Native American Tribal, and non-governmental organizations eligible under Section 90.523 of the Commission's Rules be represented in order to ensure that each agency's future spectrum needs are considered in the allocation process. Administrators who are not oriented in the communications field should delegate someone with this knowledge to attend, participate and represent your agency's needs.

All interested parties wishing to participate in the planning for the use of new public safety spectrum in the 700 MHz band should plan to attend. For further information, please contact:

Raymond R. Smith, Chairman
State of Ohio
Region 33, 700 MHz Public Safety Planning Committee
940 Matterhorn Drive
Reynoldsburg, OH 43068-1714

PUBLIC NOTICE

News media information 202 / 418-0500
Fax-On-Demand 202 / 418-2830
TTY 202 / 418-2555
Internet: http://www.fcc.gov
ftp.fcc.gov

Federal Communications Commission
445 12th St., S.W.
Washington, D.C. 20554

DA 02-3469
December 16, 2002

WIRELESS TELECOMMUNICATIONS BUREAU ACTION

REGION 33 (OHIO) 700 MHz PUBLIC SAFETY PLANNING COMMITTEE ANNOUNCES NINTH PLANNING MEETING

The Region 33 (Ohio) 700 MHz Public Safety Planning Committee announces that its ninth meeting will be held on March 6, 2003 at 10:00 a.m., at the Canton Post of the State Highway Patrol, 4710 Shuffel Road, Canton, Ohio. The purpose of the meeting is to continue the allocation planning process of the 700 MHz spectrum for public safety in Region 33 (Ohio).

The Region 33 Public Safety Planning Committee meeting is open to the public. All eligible public safety providers whose sole or principal purpose is to protect the safety of life, health, or property in Ohio may utilize these frequencies. It is essential that not only public safety, but all government, Native American Tribal, and non-governmental organizations eligible under Section 90.523 of the Commission's Rules be represented in order to ensure that each agency's future spectrum needs are considered in the allocation process. Administrators who are not oriented in the communications field should delegate someone with this knowledge to attend, participate and represent your agency's needs.

All interested parties wishing to participate in the planning for the use of new public safety spectrum in the 700 MHz band should plan to attend. For further information, please contact:

Raymond R. Smith, Chairman
State of Ohio
Region 33, 700 MHz Public Safety Planning Committee
940 Matterhorn Drive
Reynoldsburg, OH 43068-1714
PH: 614-863-2808

PUBLIC NOTICE

News media information 202 / 418-0500
Fax-On-Demand 202 / 418-2830
TTY 202 / 418-2555
Internet: http://www.fcc.gov
ftp.fcc.gov

Federal Communications Commission
445 12th St., S.W.
Washington, D.C. 20554

DA 03-1032
March 31, 2003

WIRELESS TELECOMMUNICATIONS BUREAU ACTION

REGION 33 (OHIO) 700 MHz PUBLIC SAFETY PLANNING COMMITTEE ANNOUNCES TENTH PLANNING MEETING

The Region 33 (Ohio) 700 MHz Public Safety Planning Committee announces that its tenth meeting will be held on June 18, 2003 at 10:00 a.m., at the Ohio Emergency Operations Center, 2855 West Dublin-Granville Road, Columbus, Ohio. The purpose of the meeting is to continue the allocation planning process of the 700 MHz spectrum for public safety in Region 33 (Ohio).

The Region 33 Public Safety Planning Committee meeting is open to the public. All eligible public safety providers whose sole or principal purpose is to protect the safety of life, health, or property in Ohio may utilize these frequencies. It is essential that not only public safety, but all government, Native American Tribal, and non-governmental organizations eligible under Section 90.523 of the Commission's Rules be represented in order to ensure that each agency's future spectrum needs are considered in the allocation process. Administrators who are not oriented in the communications field should delegate someone with this knowledge to attend, participate and represent your agency's needs.

All interested parties wishing to participate in the planning for the use of new public safety spectrum in the 700 MHz band should plan to attend. For further information, please contact:

Raymond R. Smith, Chairman
State of Ohio
Region 33, 700 MHz Public Safety Planning Committee
940 Matterhorn Drive
Reynoldsburg, OH 43068-1714
PH: 614-863-2808

PUBLIC NOTICE

News media information 202 / 418-0500
Fax-On-Demand 202 / 418-2830
TTY 202 / 418-2555
Internet: http://www.fcc.gov
ftp.fcc.gov

Federal Communications Commission
445 12th St., S.W.
Washington, D.C. 20554

DA 03-2272
July 11, 2003

WIRELESS TELECOMMUNICATIONS BUREAU ACTION

REGION 33 (OHIO) 700 MHz PUBLIC SAFETY PLANNING COMMITTEE ANNOUNCES ELEVENTH PLANNING MEETING

The Region 33 (Ohio) 700 MHz Public Safety Planning Committee announces that its eleventh meeting will be held on September 19, 2003 at 2:00 p.m., at the Ohio Emergency Operations Center, 2855 West Dublin-Granville Road, Columbus, Ohio. The purpose of the meeting is to continue the allocation planning process of the 700 MHz spectrum for public safety in Region 33 (Ohio).

The Region 33 Public Safety Planning Committee meeting is open to the public. All eligible public safety providers whose sole or principal purpose is to protect the safety of life, health, or property in Ohio may utilize these frequencies. It is essential that not only public safety, but all government, Native American Tribal, and non-governmental organizations eligible under Section 90.523 of the Commission's Rules be represented in order to ensure that each agency's future spectrum needs are considered in the allocation process. Administrators who are not oriented in the communications field should delegate someone with this knowledge to attend, participate and represent your agency's needs.

All interested parties wishing to participate in the planning for the use of new public safety spectrum in the 700 MHz band should plan to attend. For further information, please contact:

Raymond R. Smith, Chairman
State of Ohio
Region 33, 700 MHz Public Safety Planning Committee
940 Matterhorn Drive
Reynoldsburg, OH 43068-1714
PH: 614-863-2808

PUBLIC NOTICE

News media information 202 / 418-0500
Fax-On-Demand 202 / 418-2830
TTY 202 / 418-2555
Internet: http://www.fcc.gov
ftp.fcc.gov

Federal Communications Commission
445 12th St., S.W.
Washington, D.C. 20554

DA 04-59
January 14, 2004

WIRELESS TELECOMMUNICATIONS BUREAU ACTION

REGION 33 (OHIO) 700 MHz PUBLIC SAFETY PLANNING COMMITTEE ANNOUNCES PLANNING MEETING

The Region 33 (Ohio) 700 MHz Public Safety Planning Committee announces that its next planning meeting will be held on Thursday, February 19, 2004 at 1:00 p.m., at the Ohio Emergency Operations Center, 2855 West Dublin-Granville Road, Columbus, Ohio. The purpose of the meeting is to continue the allocation planning process of the 700 MHz and the 4.9 GHz spectrum for Public Safety in Region 33 (Ohio).

The Region 33 Public Safety Planning Committee meeting is open to the public. All eligible public safety providers whose sole or principal purpose is to protect the safety of life, health, or property in Ohio may utilize these frequencies. It is essential that not only public safety, but all government, Native American Tribal, and non-governmental organizations eligible under Section 90.523 of the Commission's Rules be represented in order to ensure that each agency's future spectrum needs are considered in the allocation process. Administrators who are not oriented in the communications field should delegate someone with this knowledge to attend, participate and represent your agency's needs.

All interested parties wishing to participate in the planning for the use of either the new public safety spectrum in the 700 MHz band and/or the newly allocated 4.9GHz band within Region 33 are encouraged to attend. For further information about the meeting, please contact:

Paul Mayer, Chairman
State of Ohio
Region 33, 700 MHz Public Safety Planning Committee
2323 West 5th Avenue, Suite 150
Columbus, Ohio 43204-4899

PUBLIC NOTICE

Federal Communications Commission
445 12th St., S.W.
Washington, D.C. 20554

News media information 202 / 418-0500
Fax-On-Demand 202 / 418-2830
TTY 202 / 418-2555
Internet: http://www.fcc.gov
ftp.fcc.gov

DA 08-950
April 23, 2008

PUBLIC SAFETY AND HOMELAND SECURITY BUREAU ACTION

REGION 33 (OHIO) PUBLIC SAFETY REGIONAL PLANNING COMMITTEES TO HOLD 700 MHz REGIONAL PUBLIC SAFETY PLANNING AND 800 MHz NPSPAC REGIONAL PUBLIC SAFETY PLANNING MEETINGS

PR Docket 91-258

The Region 33 (Ohio) Public Safety Regional Planning Committees will hold two consecutive planning meetings on Wednesday, June 25, 2008. Beginning at 10:00 a.m., at the 700 MHz Regional Public Safety Planning Committee will convene at the State of Ohio Emergency Operations Center, 2855 West Dublin-Granville Road, Columbus, Ohio. A complimentary lunch will be provided. Please R.S.V.P to the Chairman by June 20, 2008, with the number of people from your agency that will attend.

The agenda for the 700 MHz meeting includes discussion of the revised Region 33 700 MHz plan. The Region 33 700 MHz plan is posted on the Regional Planning Committee website, or a copy may be requested from the Chairman by direct email.

After a complimentary lunch, the 800 MHz Public Safety Regional Planning Committee will convene at the same location.

The agenda for the 800 MHz meeting includes:

- Review of the status of rebanding in the Wave 4 region.
- Review of the results of comment period regarding the *Further Notice of Proposed Rulemaking*, DA 07-4489, (rel. Nov. 1, 2007), and its subsequent updates.

Further agendas for both meetings will be available prior to the meeting date and will be circulated and posted on the websites.

Both Region 33 Public Safety Regional Planning Committee meetings are open to the public. All eligible public safety providers whose sole or principal purpose is to protect the safety of life, health, or property in Region 33 may utilize these frequencies. It is essential that public safety agencies in all areas of government, including state, municipality, county, and Native American Tribal, and non-governmental organizations eligible under Section 90.523 of the Commission's rules, 47 C.F.R. § 90.523, be represented in order to ensure that each agency's future spectrum needs are considered in the allocation process. Administrators who are not oriented in the communications field should delegate someone with this knowledge to attend, participate, and represent their agency's needs.

Appendix D - Authority and Administrative By-Laws

The authority for the Regional Planning Committee to carry out its assigned tasks is derived from the FCC Report and Order, Docket 96-86 and amendments thereto. In Region 33, each committee member that represents an eligible licensee, under FCC Part 90 the Public Safety Radio Services is entitled to one vote in all committee matters. The following administrative by-laws will govern the committee:

Name & Purpose

This organization is the Ohio Region 33 700 MHz. Planning Committee (hereinafter RPC). Its primary purpose is to foster cooperation, planning and development of a public safety communications plan in the State of Ohio and the implementation of this plan in the 700 MHz Public Safety band. The Conduct of Regional Meetings including without limitation, debate, and voting, shall be governed by Robert's Rules of Order, newly revised 1990 edition, ninth edition, Sarah Corbin Robert, Henry M. Robert III, and William J. Evans.

Membership, Meetings & Voting Procedures

The RPC shall have two classes of members: 'voting' and 'non-voting'.

Voting Members: Voting members shall consist of one representative from any agency engaged in public safety activities eligible to hold a radio license under USC 47 CFR §90.20, 47 CFR §90.523, or 47 CFR §2.103. Upon application, one designee of each FCC designated frequency coordination entity (APCO, IMSA/IAFC, AASHTO, FCCA) shall also be eligible for 'voting' membership. An agency shall be allowed no more than one vote for each distinct eligibility category within the agency's political organization or jurisdiction. Voting members may not vote on issues involving their entity.

Non-voting members are all others interested in furthering the goals of public safety communications.

New members may be added by application. Application forms are available from the RPC Secretary. Membership shall be granted upon approval of application until resignation or removal.

- In addition to any powers and rights as are vested in them by law, or these bylaws, the members shall have such other powers and rights as the membership may determine.

- A member may be suspended or removed with cause by vote of a majority of members after reasonable notice and opportunity to be heard. Failure to attend *50%* of the RPC meetings held in a calendar year shall be a specific cause for removal.

- Resignation: A member may resign by written notice to the Chairperson.

- Annual Meetings: The annual meeting of the members shall be held in conjunction with the September meeting of the Ohio Chapter of the Association of Public Safety Communications Officials, Inc.

- Special meetings of the RPC may be called by the Chairperson or the Vice-Chairperson or upon written application of two or more members.

- Reasonable notice of time and place of RPC meetings shall be given each member. Such notice need not specify the purpose of the meeting unless there is to be considered at the meeting: (i) amendment to these by-laws or (ii) removal or suspension of an officer.

It shall be reasonable and sufficient to notify members at least fourteen (14) days prior to a meeting at his or her usual or last known business address as is on record with the RPC Secretary.

Members shall keep the Secretary informed of their most current address/telephone information (including e-mail) so they may be kept properly informed of committee activities.

- At any meeting of the RPC members, twenty per cent of the voting members of record shall constitute a quorum. At no time shall a quorum be less than 10 voting members.

- Each voting member shall have one vote, so long as a quorum is present. A simple majority of votes cast shall decide any issue, except DISSOLUTION. In the event, a motion is made for dissolution of this committee, a vote of two thirds plus one of the membership will be required for approval.

Officers and Agents

The officers of the RPC shall be a Chairperson, Vice-Chairperson, Treasurer, Secretary and such other officers as may be deemed necessary by the membership.

- Election and Tenure: Chairperson and Vice-Chairperson shall be elected by the voting members at their first meeting and, thereafter, at the annual meeting. The term of office shall be one year. Officers may succeed themselves.

- Chairperson: The Chairperson shall be the chief executive officer of the RPC and, subject to the control of the voting members, shall have general charge and supervision of the affairs of the RPC. The Chairperson shall preside at all meetings of the RPC.

- Vice-Chairperson: The Vice-Chairperson, if any, shall have such duties and powers, as the Chairperson shall determine. The Vice-Chairperson shall have and may exercise all the powers and duties of the Chairperson during the absence of the Chairperson or in the event of his or her inability to act.

- Treasurer: The Treasurer shall be appointed by the Chairperson and is the chief financial and accounting officer of the RPC. The Treasurer shall be in charge of its financial affairs, funds, and valuable papers and shall keep full and accurate records thereof.

- Secretary: The Secretary shall be appointed by the Chairperson and shall record and maintain records of all proceedings of the members in a file or series of files kept for that purpose. The files shall be kept within the Region and shall be open at all reasonable times to the inspection of any member. Such file or files shall also contain records of all meetings and the original, or attested copies, of bylaws and names of all members and the address (including e-mail address, if available) of each. If the Secretary is absent from any meeting of members, a temporary Secretary chosen at the meeting shall exercise the duties of the Secretary at the meeting.

- Resignation: An officer may resign by delivering his or her written resignation to the Chairperson. Such resignation shall be effective upon receipt (unless specified to be effective at some other time), and acceptance thereof shall not be necessary to make it effective unless it so states.

- Vacancies: If the office of Chairperson or Vice-Chairperson becomes vacant, the voting members may elect a successor who shall hold office for the remainder of the normal term or until his or her successor is elected and qualified.

- Subcommittees or Working Groups shall be formed as necessary to fulfill the RPC missions and Goals. Initially, this RPC shall form Technology and Planning, Implementation and Interoperability subcommittees. The Chairpersons of these subcommittees shall be determined by the membership of said subcommittee except that the Interoperability Chair shall be a representative of the State of Ohio due to FCC mandated state involvement/leadership in this function. Subcommittees or working groups may be disbanded when their purpose is fulfilled at the discretion of the RPC Chairperson.

Amendments

These bylaws may be altered, amended or repealed in whole or in part by majority vote of the membership. The membership may otherwise adopt, alter, amend, or repeal any provision which FCC regulation or these bylaws requires action by the voting members.

Dissolution

This RPC may be dissolved upon completion of its stated purpose by vote of two-thirds plus one of the members. The FCC shall be notified.

Appendix E - Meeting Minutes

Meeting Minutes

Region 33 prepared minutes of every meeting indicating the action taken by the committee on specific planning issues. In order to save space in the Region 33 plan document the committee summarized meeting action as follows:

- The first Region 33 meeting was held on February 28, 2001 at the Ohio Emergency Management Center in Columbus, Ohio. Ray Smith was designated by the 800 MHz chairman as the convener of the first meeting.

  Elections were held for chair and vice-chair of the committee. A general discussion was conducted outlining the purpose of the meeting and the regional planning committee function Ray Smith, State of Ohio, was elected chair and Greg Berquist, Buckeye State Sheriff's Association, was elected vice-chair. Subcommittees were formed for implementation, technical and interoperability activities. Tom Trufant, city of Columbus, was appointed to chair the implementation subcommittee, Paul Mayer, Ohio MARCS program, was appointed to chair the interoperability subcommittee and Dave Ziegler, Columbus Fire, was appointed chair of the technical subcommittee. Timothy Hetzler was appointed to serve as committee secretary/treasurer. Thirty three members attended.

  Meeting adjourned with the next meeting scheduled for April 19, 2001 at the Ohio Emergency Management Center, Columbus, Ohio.

- The second meeting was held on April 19, 2001 at the Ohio Emergency Management Center in Columbus, Ohio. Draft by-laws were reviewed by the membership and comments taken for inclusion in the by-laws.

  Subcommittee memberships were determined and assignment of duties and activities were made. The committee also agreed to make application for the $2500 National Public Safety Telecommunication Council (NPSTC) funds that are available for planning committees. Motorola offered the assistance of their 700 MHz liaison representative, Betty Rinehart, to the planning committee. Twenty three members attended.

  The meeting adjourned with the next RPC meeting scheduled for June 27, 2001 at the Lucas County Emergency Service Building, Toledo, Ohio.

- The third meeting was held on June 27, 2001 at the Lucas County Emergency Services Building, Toledo, Ohio. Vice chair Greg Berquest conducted the meeting due to the chair being absent for a family emergency.

  The Implementation subcommittee submitted draft by-laws for further review by the committee. Several additional suggestions were provided. The Technical subcommittee

distributed the first draft of a dispute resolution process for membership review and future comment.

Sean O'Hara, of the Syracuse Research Corporation made a presentation to the committee on the Canadian border impact issues in the 700 MHz band and the DTV transition. Thirteen members attended the meeting

The meeting adjourned with the next RPC meeting scheduled for September 20, 2001 at the Ohio Emergency Management Center in Columbus, Ohio.

- The fourth meeting was held on September 20, 2001 at the Ohio Emergency Management Center, Columbus, Ohio.

  The Technical subcommittee presented the draft dispute resolution process to the committee for approval. Also, the NCC's recommended sharing agreement was submitted and approved. The Implementation subcommittee submitted the final draft of the committee by-laws for review and approval. The Secretary/Treasurer reported the receipt of the $2500 check from NPSTC to assist in the Region 33 planning process. The funds will be held in the APCO checking account for our use. Twenty one members attended the meeting.

  The meeting was adjourned with the next meeting scheduled for February 20, 2002 at the Ottawa County Emergency Management Center, Port Clinton, Ohio.

- The fifth meeting was held on February 20, 2002 at the Ottawa County Emergency Management Center, Port Clinton, Ohio. The meeting was different than previous meetings because the news media and local county commissioners were present. A local service provider had spread some false information about the 700 MHz spectrum allocation that created apprehension with local officials. The chairman gave a thorough review of events.

  The chairman reported on recent NCC meetings and the impact of Homeland security on public safety communication systems.

  The Implementation subcommittee submitted a "first draft" of the Region 33 plan for members to review and comment at the next meeting. Eighteen members attended the meeting

  The meeting was adjourned with the next meeting schedule for April 9, 2002 at the Ohio Emergency Management Center in Columbus, Ohio.

- The sixth meeting was held on April 9, 2002 at the Ohio Emergency Management Center, Columbus, Ohio.

The Implementation subcommittee presented an updated draft of the Region 33 plan. It will be distributed to all of the membership over the Yahoo server.

Mr. David Funk from NPSTC made a presentation on the Computer Aided Pre-coordination Resource and Database (CAPRAD) to the membership. Eighteen members attended the meeting.

The meeting was adjourned with the next meeting scheduled for June 26, 2002 at the Hamilton County Communications Center, Cincinnati, Ohio.

- The seventh meeting was held on June 26, 2002 at the Hamilton County Communications Center.

  The chair received at letter of resignation from the secretary/treasurer that was accepted by the committee. The chair will assume the secretary/treasurer duties until a replacement can be found.

  The chair appointed a nominating committee to recommend candidates for officers at the next RPC meeting. The final draft of the dispute resolution process was distributed to the membership for final review. Only minor cosmetic corrections were made and approved. The chair announced that he would be attending CAPRAD training in Denver, CO. in July. Seventeen members attended the meeting.

  The meeting was adjourned with the next meeting schedule for September 26, 2002 at the Ohio Emergency Management Center, Columbus.

- The eighth meeting was held at the Ohio Emergency Management Center in Columbus, Ohio on September 26, 2002. The chair reported that since the last meeting in June the state of Ohio has decided to assume responsibility for interoperability and have sent a request to the FCC asking that the declaration deadline be waived. The state asked for the RPC's support and agreed to have a representative on the State Interoperability Executive Committee (SIEC) from the RPC. The chair has supported the states action with a letter to the FCC.

  The implementation subcommittee conducted a line by line review of the draft regional plan with the committee membership. Minor corrections were made to the document and it was approved as amended. The chair will continue working on the appendices and have them ready for the next meeting. The committee is awaiting the database update in CAPRAD before final approval will be complete.

  The chair reported on the CAPRAD training that took place in Denver, CO at the National Public Safety Telecommunications Council support office.

  The nominating committee submitted its recommendation that Ray Smith continue and chair and Greg Berquist remain at vice chair for the next year. No other nominations

were made and a motion was made to accept. The committee approved the nominating committee's recommendation for new officers. Nineteen members attended the meeting.

The meeting adjourned with the next meeting scheduled for March 6, 2003 at the State Highway Patrol post in Canton.

- The ninth meeting was held at the State Highway Patrol Post in Canton, Ohio on March 6, 2003. The chair gave a brief summary of the events that occurred at the last NCC meeting in Washington DC in February.

  The chair introduced Darryl Anderson, the Ohio SIEC chair appointee. Mr. Anderson briefed the members on activities planned for the Ohio SIEC and invited all to attend their meets.

  The chair reported to the membership that the CAPRAD packing plan had been completed and distributed copies to the attendees for their review and comment at the next meeting. The chair also stated that he intended to have the wideband data channels assigned and entered into CAPRAD by the next meeting. It is the chairs intent to have the Region 33 plan ready for distribution and comment by adjacent regions after the next meeting. Eleven members attended the meeting. Severe weather conditions hampered travel.

  The meeting adjourned with the next meeting scheduled for June 18, 2003 at the Ohio Emergency Management Center, Columbus, Ohio.

- The tenth meeting was held on June 18, 2003 at the State Emergency Operations Center in Columbus. The chair reported on recent activities which would concern the plan or committee members.

  Region 5 had their plan returned from the Commission with several flaws, the major one stated was the Dispute Resolution process. Ours should be ok since it follows the NCC guidelines.

  Our draft plan was submitted to the surrounding states RPC,s with concurrence received from Indiana and Kentucky. Michigan and Western New York have not yet responded and Western Pennsylvania and West Virginia do not have RPC's formed yet. Contact with them will be handled in a different manner.

  The FCC has charged the 700 MHz. RPC's with developing a plan for use of the 4.9 GHz. Spectrum. More will be forthcoming on this in the near future.

  The NCC's charter will expire with the next meeting scheduled for July 17th. The agenda not yet known but one item to be presented is allocate some of the reserve data channels to the states. Most of their reports and data will be maintained on the FCC and NPSTC's web sites for archiving.

The Chair then announced that the next meeting was the 'annual meeting' and elections were needed. He further stated that his contract had not been renewed by the State and he and his wife were contemplating moving back to the Cleveland area. He requested that he not be considered for re-election to the Chair. He then asked Tom Trufant to chair the nominating committee. Greg Berquist and Robert Bill to also serve. This would give the committee a city / county / state balance.

The next meeting was scheduled for September 19th, 2PM at the same location, the State EOC.

For the good of the order: Paul Mayer took the floor and, on behalf of the group, presented the Chairman with a plaque thanking him for his many years of service to the public safety and communications communities of Ohio.

- The eleventh meeting was held on September 19th as scheduled by Vice Chair Berquist. Previous minutes reading waived since they had been both e-mailed to members and posted on the web site. The treasurer reported and was approved.

As advertised, the election of Chair and Vice-Chair was called. Robert Bill of the committee reported they had selected Paul Mayer for Chair and Greg Berquist to again be Vice-Chair. The follor was opened and there were no further nominations we received. At that time, the Vice-Chair, Mr. Berquist, asked for a motion for a voice vote to accept the slate as presented. Motion by Mr. Zawodny and Second by Ms. Wayt, the candidates were approved with no negative votes.

Sub-committee reports were next on the agenda: Implementation; no report, chairman Tom Trufant absent.

Technical; David Ziegler advised that he has the 4.9 GHz. rule making docket and is reviewing it. Mr. Ziegler's committee will finish reading the docket and report back at the next meeting.

Interoperability: Mr. Mayer reported that the National Coordination Committee (NCC) held their final meeting on July 17, 2003. Originally chartered by the FCC about four years ago and was extended a couple of times. Their work is about done, however; and will expire officially July 25th. On that date, the Chair submitted a final list of recommendations to the FCC (see http://wireless.fcc.gov/publicsafety/ncc/ncc_releases/2finalrecommendations.pdf)

This URL is posted in the bookmarks section of the RPC33 web site so those interested may view the entire document.

Mr. Mayer also recapped the recent activities of the SIEC. The survey data collected will be put into a usable format by the University of Cincinnati. The SIEC has drafted a "Request for Proposal" document to obtain the services of an engineering contractor to review this data, fill in any holes and formulate an Ohio Public Safety Communications Interoperability Plan.

Mr. Mayer then stated that he would also need to be replaced as chair of the Interoperability sub-committee. The Plan calls for this to be a State employee. He will review the available state members of the RPC and report back at the next meeting.

There being no further business, the meeting was adjourned and the next meeting set for November 19, 2003, same location.

OHIO REGION 33 700 MHz PLANNING COMMITTEE MEETING

Secretary's minutes of February 19, 2004
State of Ohio Emergency Operations Center
2855 W. Dublin-Granville Rd.
Columbus, Ohio

Chairman Paul Mayer called the Region 33 meeting to order at 1:15pm.

All in attendance made self-introductions.

Secretary's Report: No minutes from last meeting.

Treasurer's Report: Chairman Mayer received a check from previous Chairman Ray Smith in the amount of $1278.79. However, the check is now over 90 days old and has expired. Chairman Mayer will be working on getting another check re-issued to get into a new checking account.

Chairman Mayer passed out the agenda for the upcoming Ohio Statewide Interoperability Executive Committee meeting on Wednesday February 25, 2004. He encouraged everyone to attend. It will also be held at the Ohio Emergency Operations Center. Minutes from the meeting on January 21, 2004 were also attached.

Don Flahan has retired as the Frequency Advisor. Paul Mayer has been appointed by APCO to this position and will go to Florida the second week in March for training.

The 800 MHz. plan states that the Chairman shall be the APCO Local Advisor so Mayer will be also taking on that role also.. Chairman Mayer stated that, "everyone will be play by the same rules from now on".

Sub-committee Reports:

Implementation Sub –committee:
Tom Trufant, chair, was absent. He will be retiring as of February 27, 2004.
Greg Wenz, Hamilton County Communications, will be taking his place as the new chair of the Implementation Sub-committee.

Technical Sub-committee:
Dave Zawodny, chair, had no report. Discussed the fact that a coordination plan needs to be developed, but would like to see the Implementation sub-committee handle it. A procedure needs to be written. Sub-committee will be looking at other plans for direction.

Interoperability Sub-committee:
See minutes from SIEC meeting on January 21, 2004.

New Business

3 Federal Terrorism Grants – Money to be divided among various groups to include:
-CERT, Civilian Emergency Response Team
-Law Enforcement for training or equipment only, which will be administered through the County EMAs.
-Buckeye State Sheriff's Association for statewide information sharing. Will be placing 8 Communications vans in various strategic places within the state. Volunteer Sheriff Depts. in each BSSA district will be responsible for the placement, staffing, and maintaining of the vans, which will be programmed with MARCS and low/high UHF. Plan is possibly to put 2 vans in each district. Big issue seems to be, who will be paying for ongoing costs and what type of costs will there be?
Will be looking into specifics further and reporting back.

Funding for State Interoperability – no money.

RFP for consulting came back too high for EMA. They will be checking other avenues, possibly hiring a contractor for EOC building to be regulated by a committee.

Dave Borden reported that Franklin County received interoperability funding. They will be starting a regional interoperability committee to review interoperability problems. The committee will include representatives from adjacent county EMAs, Franklin County Fire Chiefs, Police Chiefs, Hospitals, etc. It will be a footprint for the state interoperability group.

A question came up about, how will the plan be implemented statewide if there is no funding provided? The task would be to put the plan together then go to the state legislature for funding.

When can the 700 MHz frequencies be used? The plan is under review, currently, by other regional (surrounding) states.
Must request permission from the state for vehicular repeaters, if needed.

Next meeting set for April 15, 2004 to be held immediately following the APCO State Chapter meeting at approximately 11-11:30am. Location will again be the State Emergency Operations Center at 2855 W. Dublin-Granville Rd. Columbus.

Meeting adjourned at 1:50pm.

Appendix F - Simplified 700 MHz Pre-assignment Rules Recommendation

Introduction

A process for doing the initial block assignments of 700 MHz channels before details of actual system deployments is required. In this initial phase, there is little actual knowledge of what specific equipment is to be deployed and where the sites will be. As a result, a high level simplified method is proposed to establish guidelines for frequency coordination. When actual systems are deployed, additional details will be known and the system designers will be required to select specific sites and supporting hardware to control interference.

Overview

Assignments will be based on a defined service area of each applicant. For Public Safety entities this will normally be a geographically defined area such as city, county or by a data file consisting of line segments creating a polygon that encloses the defined area.

For co-channel assignments, the 40 dBμ contour will be allowed to extend beyond the defined service area by 3 to 5 miles, depending on the type of environment, urban, suburban or low density. The interfering co-channel 5 dBμ will be allowed to touch but not overlap the 40 dBμ contour of the system being evaluated. All contours are (50,50).

For adjacent and alternate channels, the interfering channels 60 dBμ will be allowed to touch but not overlap the 40 dBμ contour of the system being evaluated. All contours are (50,50).

Discussion

The FCC limits the maximum field strength to 40 dB relative to 1μV/m (customarily denoted as 40 dBμ). It is assumed that this limitation will be applied similarly to the way it is applied in the 821-824/866/869 MHz band. That is, a 40 dBμ field strength can be deployed up to a defined distance from the edge of the service area, based on the size of the service area or type of applicant, i.e. city, county or statewide system. This is important as the potential for interference from CMRS infrastructure demands that public safety systems have adequate margins for reliability in the presence of interference. The value of 40 dBμ corresponds to a signal of -92.7 dBm, received by a half-wavelength dipole (λ/2) antenna. The thermal noise floor for a 6.25 kHz receiver would be in the range of -126 dBm, so there is a margin of approximately 33 dB available for "noise limited" reliability. Figure 1 shows show the various interfering sources and how they accumulate to form a composite noise floor that can be used to determine the "reliability" or probability of achieving the desired performance in the presence of various interfering sources with differing characteristics.

Allowing for a 3 dB reduction in the available margin due to CMRS OOBE noise lowers the reliability and/or the channel performance of Public Safety systems. TIA TR8 made this

allowance during the meetings in Mesa, AZ, January 2001. In addition, there are various channel bandwidths with different performance criteria and unknown adjacent and alternate channel assignments need to be accounted for. The co-channel and adjacent/alternate sources are shown in the right hand side of Figure 1. There would be a single co-channel source, but potentially several adjacent or alternate channel sources involved.

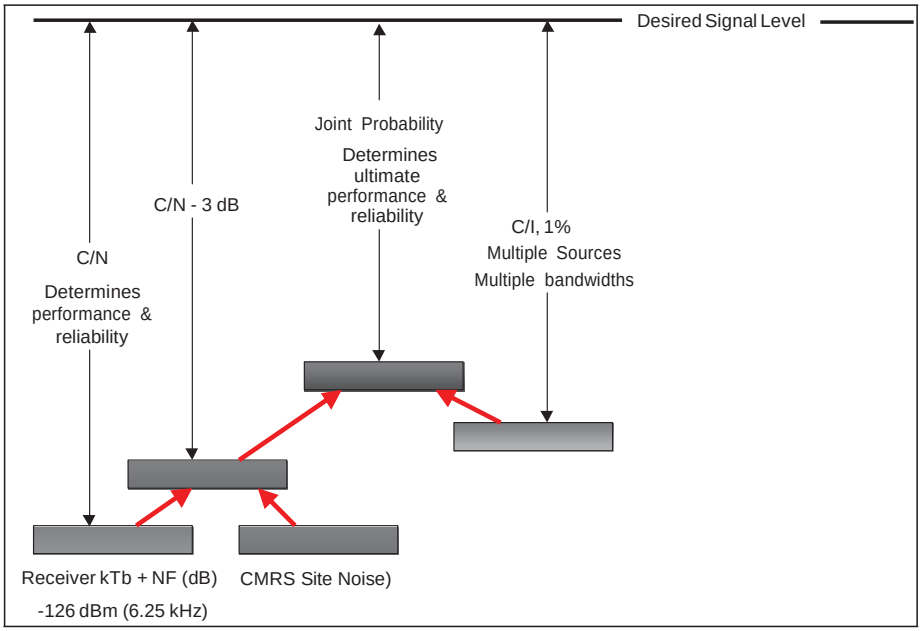


Figure 1 - Interfering Sources Create A "Noise" Level Influencing Reliability

It is recommended that co-channel assignments limit the C/I at the edge (worst case mile) be sufficient to limit that interference to <1%. A C/I ratio of 26.4 dB plus the required capture value required to achieve this goal.[47]. A 17 - 20 dB C/N is required to achieve channel performance. Table 1 shows estimated performance considering the 3 dB noise floor rise at the 40 dBμ signal level. Performance varies due to the different Cf/N requirements of the different modulations and channel bandwidths. These values are appropriate for a mobile on the street, but are considerably short to provide reliable communications to portables inside buildings.

[47] See Appendix A for an explanation of how the 1% interference value is defined and derived.

Comparison of Joint Reliability for various configurations				
Channel Bandwidth	6.25 kHz	12.5 kHz	12.5 kHz	25.0 kHz
Receiver ENBW (kHz)	6	6	9	18
Noise Figure(10 dB)	10	10	10	10
Receiver Noise Floor (dBm)	-126.22	-126.22	-124.46	-121.45
Rise in Noise Floor (dB)	3.00	3.00	3.00	3.00
New Receiver Noise Floor (dB)	-123.22	-123.22	-121.46	-118.45
40 dBu = -92.7 dBm	-92.7	-92.7	-92.7	-92.7
Receiver Capture (dB)	10.0	10.0	10.0	10.0
Noise Margin (dB)	30.52	30.52	28.76	25.75
C/N Required for DAQ = 3	17.0	17.0	18.0	20.0
C/N Margin (dB)	**13.52**	**13.52**	**10.76**	**5.75**
Standard deviation (8 dB)	8.0	8.0	8.0	8.0
Z	1.690	1.690	1.345	0.718
Noise Reliability (%)	**95.45%**	**95.45%**	**91.06%**	**76.37%**
C/I for <1% prob of capture	36.4	36.4	36.4	36.4
I (dBu)	3.7	3.7	3.7	3.7
I (dBm)	-129.0	-129.0	-129.0	-129.0
Joint Probability (C & I)	**94.2%**	**94.2%**	**90.4%**	**75.8%**
40 dBu = -92.7 dBm @ 770 MHz				

Table 1 Joint Probability For Project 25, 700 MHz Equipment Configurations.

To analyze the impact of requiring portable in building coverage, several scenarios are presented. The different scenarios involve a given separation from the desired sites. Then the impact of simulcast is included to show that the 40 dBμ must be able to fall outside the edge of the service area. From the analysis, recommendations of how far the 40 dBμ extensions should be allowed to occur are made.

Table 2 estimates urban coverage where simulcast is required to achieve the desired portable in building coverage. Several assumptions are required to use this estimate.

- Distance from the location to each site. Equal distance is assumed.

- CMRS noise is reduced when entering buildings. This is not a guarantee as the type of Table 2 Estimates urban coverage where simulcast is required to achieve the desired portable in building coverage. Several assumptions are required to use this estimate.

- deployments is unknown. It is possible that CMRS units may have transmitters inside buildings. This could be potentially a large contributor unless the CMRS OOBE is suppressed to TIA's most recent recommendation and the "site isolation" is maintained at 65 dB minimum.

- The 40 dBμ is allowed to extend beyond the edge of the service area boundary.

- Other configurations may be deployed utilizing additional sites, lower tower heights, lower ERP and shorter site separations.

Estimated Performance at 2.5 miles from each site				
Channel Bandwidth	6.25 kHz	12.5 kHz	12.5 kHz	25.0 kHz
Receiver Noise Floor (dBm)	-126.20	-126.20	-124.50	
Signal at 2.5 miles (dBm)	-72.7	-72.7	-72.7	-72.7
Margin (dB)	53.50	53.50	51.80	45.80
C/N Required for DAQ = 3	17.0	17.0	18.0	20.0
Building Loss (dB)	20	20	20	20
Antenna Loss (dBd)	8	8	8	8
Reliability Margin	8.50	8.50	5.80	-2.20
Z	1.0625	1.0625	0.725	-0.275
Single Site Noise Reliability (%)	**85.60%**	**85.60%**	**76.58%**	**39.17%**
Simulcast with 2 sites	97.93%	97.93%	94.51%	62.99%
Simulcast with 3 sites	99.70%	99.70%	98.71%	77.49%
Simulcast with 4 sites	99.96%	99.96%	99.70%	86.30%

Table 2, Estimated Performance From Site(s) 2.5 Miles From Typical Urban Buildings.

Table 2 shows for the example case of 2.5 miles that simulcast is required to achieve public safety levels of reliability. The difference in performance margin requirements would require more sites and closer site to site separation for wider bandwidth channels.

Figures 2 and 3 show how the configurations would potentially be deployed for a typical site with 240 Watts ERP. This is based on:

- 75 Watt transmitter, 18.75 dBW
- 200 foot tower
- 10 dBd 180 degree sector antenna +10.0 dBd
- 5 dB of cable/filter loss. - 5.0 dB

23.75 dBW ≈ 240 Watts (ERPd)

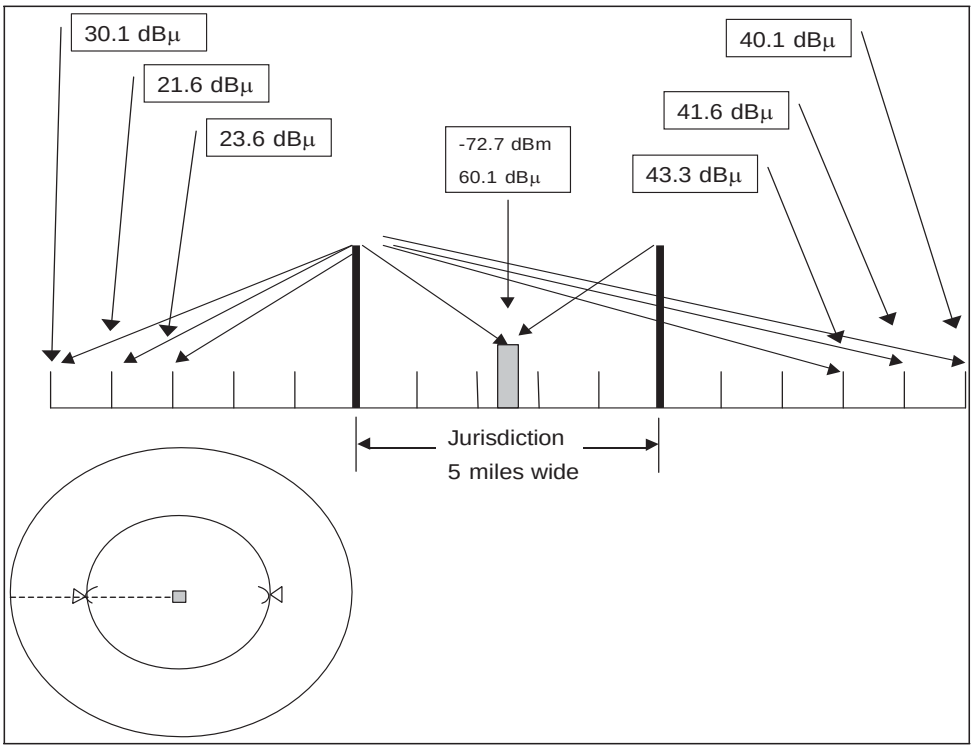


Figure 2 - Field Strength From Left Most Site

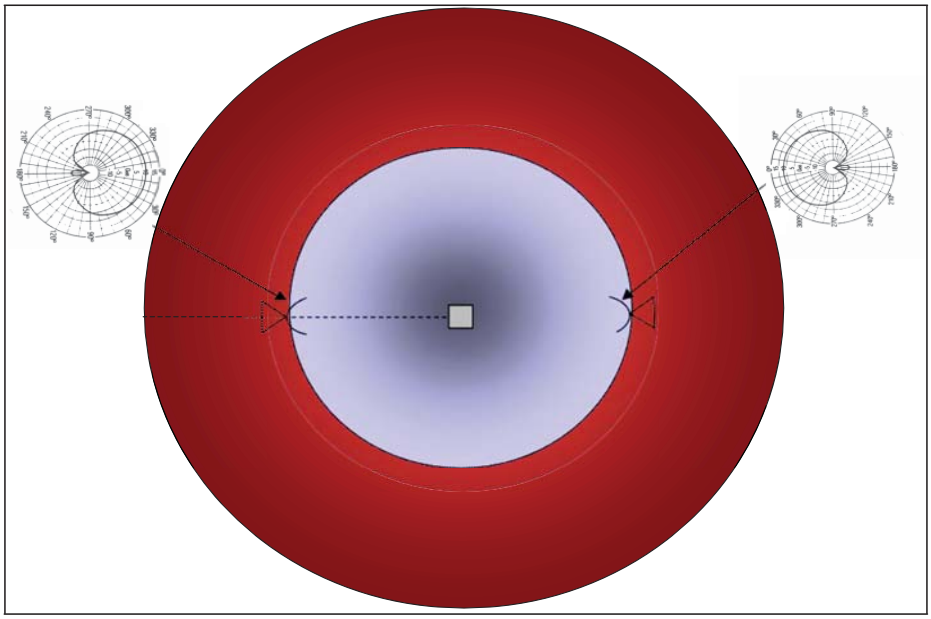


Figure 3 - Antenna Configuration Required To Limit Field Strength Off "Backside"

Figure 2 is for an urbanized area with a jurisdiction of a 5 mile circle. To provide the necessary coverage to portables in buildings at the center of the jurisdiction requires that the sites be placed along the edge of the service area utilizing direction antennas opriented toward the center of the service area (Figure 3). In this case, at 5 miles beyond the edge of the service area, the sites would produce a composite field strength of approximately 40 dBμ. Since one site is over 10 dB dominant, the contribution from the other site is not considered. The control of the field strength behind the site relies on a 20 dB antenna with a Front to Back Ratio (F/B) specification as shown in Figure 3. This performance may be optomistic due to back scatter off local obstructions in urbanized areas. However, use of antennas on the sides of buildings can assist in achieving better F/B ratios and the initial planning is not precise enough to prohibit using the full 20 dB.

The use of a single site at the center of the service area is not normally practical. To provide the necessary signal strength at the edge of the service area would produce a field strength 5 miles beyond in excess of 44 dBμ. However, if the high loss buildings were concentrated at the service area's center, then potentially a single site could be deployed, assuming that the building loss sufficiently decreases near the edge of the service area allowing a reduction in ERP to achieve the desired reliability.

Downtilting of antennas to control the 40 dBμ is not practical as the difference in angular discrimination from a 200 foot tall tower at 2.5 miles and 10 miles is approximately 0.6 degrees.

Tables 3 and 4 represent the same configuration, but for less dense buildings. In these cases, the distance to extend the 40 dBm can be determined from Table Z. Recommendations are made in Table 6.

Estimated Performance at 3.5 miles from each site				
Channel Bandwidth	6.25 kHz	12.5 kHz	12.5 kHz	25.0 kHz
Receiver Noise Floor (dBm)	-126.20	-126.20	-124.50	-118.50
Signal at 2.5 miles (dBm)	-77.7	-77.7	-77.7	-77.7
Margin (dB)	48.50	48.50	46.80	40.80
C/N Required for DAQ = 3	17.0	17.0	18.0	20.0
Building Loss (dB)	15	15	15	15
Antenna Loss (dBd)	8	8	8	8
Reliability Margin	8.50	8.50	5.80	-2.20
Z	1.0625	1.0625	0.725	-0.275
Single Site Noise Reliability (%)	**85.60%**	**85.60%**	**76.58%**	**39.17%**
Simulcast with 2 sites	97.93%	97.93%	94.51%	62.99%
Simulcast with 3 sites	99.70%	99.70%	98.71%	77.49%
Simulcast with 4 sites	99.96%	99.96%	99.70%	86.30%

Table 3 - Lower Loss Buildings, 3.5 Mile From Site(s)

Estimated Performance at 5.0 miles from each site				
Channel Bandwidth	6.25 kHz	12.5 kHz	12.5 kHz	25.0 kHz
Receiver Noise Floor (dBm)	-126.20	-126.20	-124.50	-118.50
Signal at 2.5 miles (dBm)	-82.7	-82.7	-82.7	-82.7
Margin (dB)	43.50	43.50	41.80	35.80
C/N Required for DAQ = 3	17.0	17.0	18.0	20.0
Building Loss (dB)	10	10	10	10
Antenna Loss (dBd)	8	8	8	8
Reliability Margin	8.50	8.50	5.80	-2.20
Z	1.0625	1.0625	0.725	-0.275
Single Site Noise Reliability (%)	**85.60%**	**85.60%**	**76.58%**	**39.17%**
Simulcast with 2 sites	97.93%	97.93%	94.51%	62.99%
Simulcast with 3 sites	99.70%	99.70%	98.71%	77.49%
Simulcast with 4 sites	99.96%	99.96%	99.70%	86.30%

Table 4 - Low Loss Buildings, 5.0 Miles From Site(s)

Note that the receive signals were adjusted to offset the lowered building penetration loss. This produces the same numerical reliability results, but allows increasing the site to building separation and this in turn lowers the magnitude of the "overshoot" across the service area.

Table 5 shows the field strength for a direct path and for a path reduced by a 20 dB F/B antenna. This allows the analysis to be simplified for the specific example being discussed.

Overshoot Distance (mi)	Field Strength (dBμ)	20 dB F/B (dBμ)
1	73.3	53.3
2	63.3	43.3
2.5	60.1	40.1
3	57.5	37.5
4	53.3	33.5
5	50.1	30.1
…	…	
10	40.1	
11	38.4	
12	37.5	
13	36.0	
14	34.5	
15	33.0	

Table 5 - Field Strength Vs. Distance From Site

This allows the overshoot to be 11 miles so the extension of the 40 dBm can be 4 miles for surbanized territory . For the more rural territory, the limit is the signal strength off the back of the antenna. So the result is that for various types of urbanized areas the offset of the 40 dBm should be:

Type of Area	Extension (mi.)
Urban (20 dB Buildings)	5
Suburban (15 dB Buildings)	4
Rural (10 dB Buildings)	3

Table 6 - Recommended Extension Distance Of 40 dBµ Field Strength

The 40 dBµ can then be constructed based on the defined service area without having to perform an actual prediction. Since the 40 dBµ is beyond the edge of the service area, some relaxation in the level of I is reasonable. Therefore a 35 dB ration is recommended and is consistent with what is currently being licensed in the 821-824/866-869 MHz Public Safety band.

Co-Channel Recommendation

- Allow the constructed 40 dBµ (50,50) to extend beyond the edge of the defined service area by the distance indicated in Table 6.

- Allow the Interfering 5 dBµ (50,50) to intercept but not overlap the 40 dBµ contour.

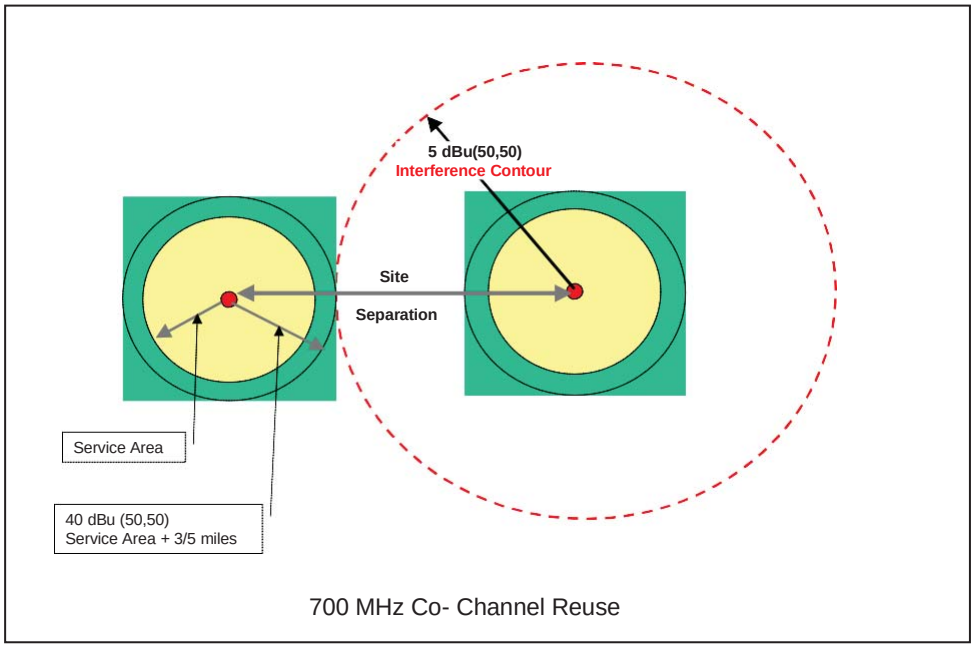


Figure 4 - Co-Channel Reuse Criterion

Adjacent and alternate Channel Considerations

Adjacent and alternate channels are treated as being noise sources that alter the composite noise floor of a victim receiver. Using the 47 CFR § 90.543 values of ACCP can facilitate the coordination of adjacent and alternate channels. The C/I requirements for <1% interference can be reduced by the value of ACCPR. For example to achieve an X dB C/I for the adjacent channel that is -40 dBc a C/I of [X-40] dB is required. Where the alternate channel ACP value is -60 dBc, then the C/I = [X-60] dB is the goal for assignment(s). There is a compounding of interference energy, as there are numerous sources, i.e. co channel, adjacent channels and alternate channels plus the noise from CMRS OOBE.

There is insufficient information in 47 CFR § 90.543 to include the actual receiver performance. Receivers typically have "skirts" that allow energy outside the bandwidth of interest to be received. In addition, the FCC defines ACCP differently than does the TIA. The term used by the FCC is the same as the TIA definition of ACP. The subtle difference is that ACCP defines the energy intercepted by a defined receiver filter. ACP defines the energy in a measured bandwidth that is typically wider than the receiver. As a result, the FCC values are optimistic at very close spacing and somewhat pessimistic at wider spacings, as the typical receiver filter is less than the channel bandwidth.

In addition, as a channel bandwidth is increased, the total noise is allowed to rise as it is initially defined in a 6.25 kHz channel bandwidth. However, the effect is diminished at very close spacings as the noise is rapidly falling off. At greater spacings, the noise is essentially flat and the receiver's filter limits the noise to the specified 3 dB rise in the thermal noise floor.

Digital receivers tend to be less tolerant to interference than analog. Therefore a 3 dB reduction in the C/(I+N) can reduce a DAQ = 3 to a DAQ = 2 which is threshold to complete receiver muting. Therefore at least 17 dB plus the margin for keeping the interference below 1% probability requires a total margin of 43.4 dB. However, this margin would be at the edge of the service area and the 40 dBμ is allowed to extend past the edge of the service area.

Frequency drift is controlled by the FCC requirement for 0.4-ppm stability when locked. This equates to approximately a 1 dB standard deviation, which is negligible when associated with the recommended initial lognormal standard deviation of 8 dB and can be ignored.

Project 25 requires that a transceiver receiver have an ACIPR of 60 dB. This implies that an ACCPR ≥ 65 dB will exist for a "companion receiver". A companion receiver is one that is designed for the specific modulation. At this time the highest likelihood is that receivers will be deploying the following receiver bandwidths at the following channel bandwidths.

Estimated Receiver Parameters	
Channel Bandwidth	Receiver Bandwidth
6.25 kHz	5.5 kHz
12.5 kHz	5.5 or 9 kHz

25 kHz	18.0 kHz

Table 7 - Estimated Receiver Parameters

Based on 47 CFR ¶ 90.543 and the P25 requirement for an ACCPR ≥ 65 dB into a 6.0 kHz channel bandwidth and leaving room for a migration from Phase 1 to Phase 2, allows for making the simplifying assumption that 65 dB ACCPR is available for both adjacent 25 kHz block.

Base initial (presorts) on 25 kHz channels. This provides the maximum flexibility by using 65 dB ACCPR for all but one possible combination of 6.25 kHz channels within the 25 kHz allotment.

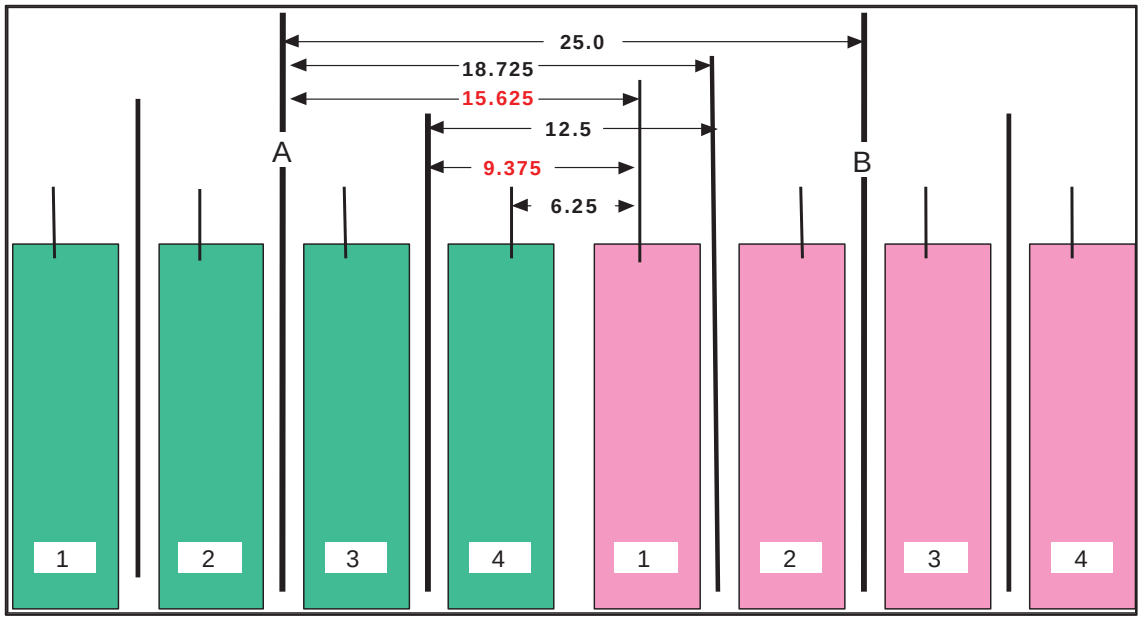


Figure 5, Potential Frequency Separations

Case	ACCPR
25 kHz	65 dB
18.725 kHz	65 dB
15.625 kHz	>40 dB
12.5 kHz	65 dB
9.375 kHz	>40 dB
6.25 kHz	65 dB

Table 8 - ACCPR Values For Potential Frequency Separations

All cases meet or exceed the FCC requirement. The most troublesome cases occur where the wider bandwidths are working against a Phase 2 narrowband 6.25 kHz channel. If system

designers keep this consideration in mind and move the edge 6.25 kHz channels inward on their own systems, then a constant value of 65 dB ACCPR can be applied across all 25 kHz channels regardless of what is eventually deployed.

For other blocks, it must be assumed that transmitter filtering in addition to transmitter performance improvements with greater frequency separation will further reduce the ACCPR.

Therefore it is recommended that a consistent value of 65 dB ACCPR be used for coordinating adjacent 25 kHz channel blocks. Rounding to be conservative due to the possibility of multiple sources allows the "I" contour to be approximately 20 dB above the 40 dBµ contour, 60 dBµ.

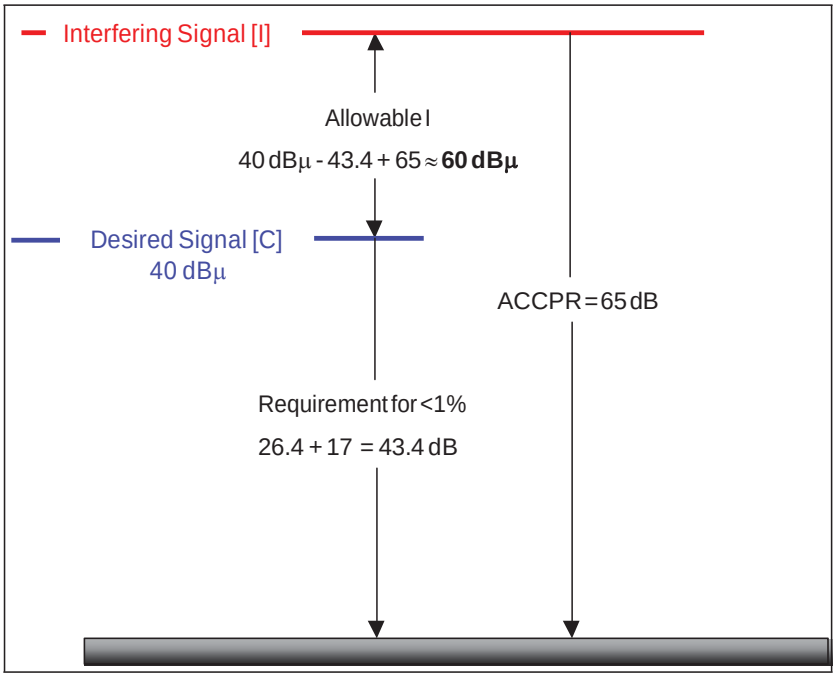


Figure 6 - Adjusted Adjacent 25 kHz Channel Interfering Contour Value

An adjacent Interfering (25 kHz) channel shall be allowed to have its 60 dBµ (50,50) contour touch but not overlap the 40 dBµ (50,50) contour of a system being evaluated. Evaluations should be made in both directions.

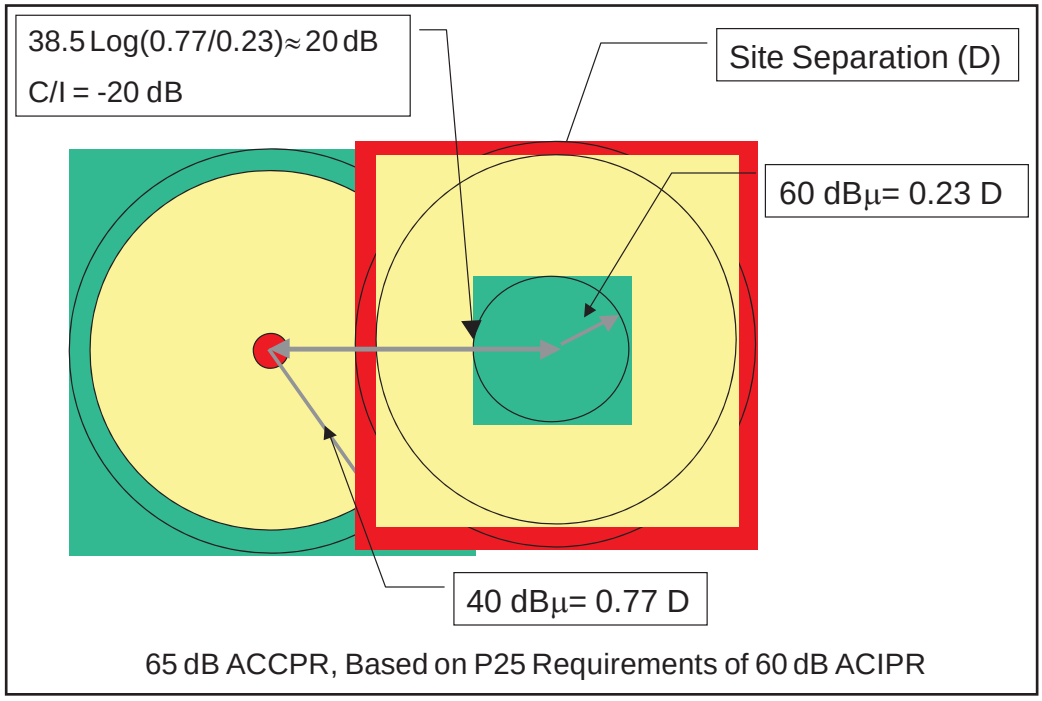


Figure 7 - Example Of Adjacent/Alternate Overlap Criterion

This simple method is only adequate for presorting large blocks to potential entities. A more detailed analysis should be executed in the actual design phase to take all the issues into consideration. Additional factors that should be considered include:

- Degree of Service Area Overlap
- Different size of Service Areas
- Different ERPs and HAATs
- Actual Terrain and Land Usage
- Differing User Reliability Requirements
- Migration from Project 25 Phase 1 to Phase 2
- Actual ACCP
- Balanced Systems
- Mobiles vs. Portables
- Use of voting
- Use of simulcast
- Radio specifications
- Simplex Operation
- Future unidentified requirements.

Special attention needs to be paid to the use of simplex operation. In this case, an interferer can be on an offset adjacent channel and in extremely close proximity to the victim receiver. This is especially critical in public safety where simplex operations are frequently used at a fire scene or

during police operation. This type operation is also quite common in the lower frequency bands. In those cases, evaluation of base to base as well as mobile to mobile interference should be considered and evaluated.

Appendix A

Carrier to Interference Requirements

There are two different ways that Interference is considered.

- Co Channel
- Adjacent and Alternate Channels

Both involve using a C/I ratio. The C/I ratio requires a probability be assigned. For example, a 10% Interference is specified, the C/I implies 90% probability of successfully achieving the desired ratio. At 1% interference, means that there is a 99% probability of achieving the desired C/I.

$$\frac{C}{I}\% = \frac{1}{2} \cdot erfc\left[\frac{C_{margin} - I}{2\sigma}\right] \qquad (1)$$

This can also be written in a form using the standard deviate unit (*Z*). In this case the *Z* for the desired probability of achieving the C/I is entered. For example, for a 90% probability of achieving the necessary C/I, *Z* = 1.28.

$$\frac{C}{I}\% = Z \cdot \sqrt{2} \cdot \sigma \qquad (2)$$

The most common requirements for several typical lognormal standard deviations (<) are included in the following table based on Equation (2).

Location Standard Deviation ( ) dB	5.6	6.5	8	10
Probability %				
10%	10.14 dB	11.77 dB	14.48 dB	18.10 dB
5%	13.07 dB	15.17 dB	18.67 dB	23.33 dB
4%	13.86 dB	16.09 dB	19.81 dB	24.76 dB
3%	14.90 dB	17.29 dB	21.28 dB	26.20 dB
2%	16.27 dB	18.88 dB	23.24 dB	29.04 dB
1%	18.45 dB	21.42 dB	26.36 dB	32.95 dB

Table A1 - Probability Of Not Achieving C/I For Various Location Lognormal Standard Deviations

These various relationships are shown in Figure A1, a continuous plot of equation(s) 1 and 2.

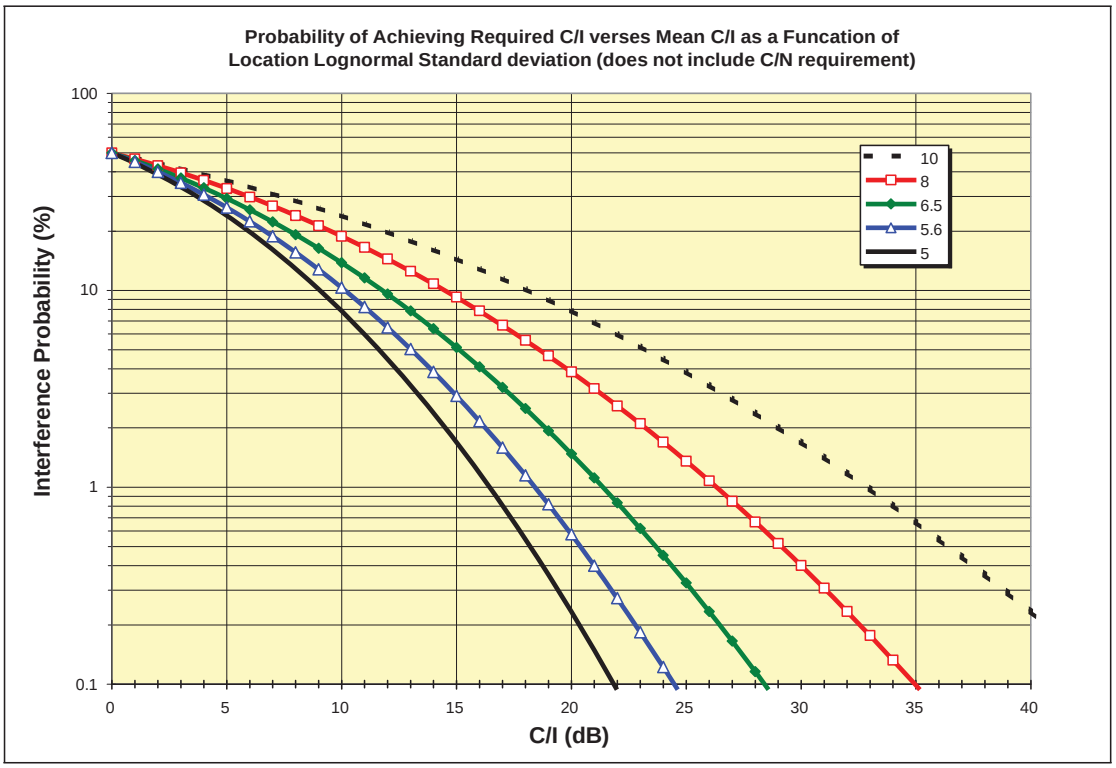


Figure A1, Probability Of Achieving Required C/I As A Function Of Location Standard Deviation

For co-channel the margin needs to include the "capture" requirement. When this is done, then a 1% probability of co channel interference can be rephrased to mean, there is a 99% probability that the "capture ratio" will be achieved. The capture ratio varies with the type of modulation. Older analog equipment has a capture ratio of approximately 7 dB. Project 25 FDMA is specified at 9 dB. Figure A1 shows the C/I requirement without including the capture requirement.

The 8 dB value for lognormal location standard deviation is reasonable when little information is available. Later when a detailed design is required, additional details and high-resolution terrain and land usage databases will allow a lower value to be used. The TIA recommended value is 5.6 dB. This provides the additional flexibility necessary to complete the design

To determine the desired probability that both the C/N and C/I will be achieved requires that a joint probability be determined. Figure A2 shows the effects of a family of various levels of C/N reliability and the joint probability (Y-axis) in the presence of various probabilities of Interference. Note that at 99% reliability with 1% interference (X-axis) that the reduction is nearly the difference. This is because the very high noise reliability is degraded by the interference, as there is little probability that the noise criterion will not be satisfied. At 90%, the 1% interference has a greater likelihood that it will occur simultaneously when the noise criterion not being met, resulting is a less degradation of the 90%

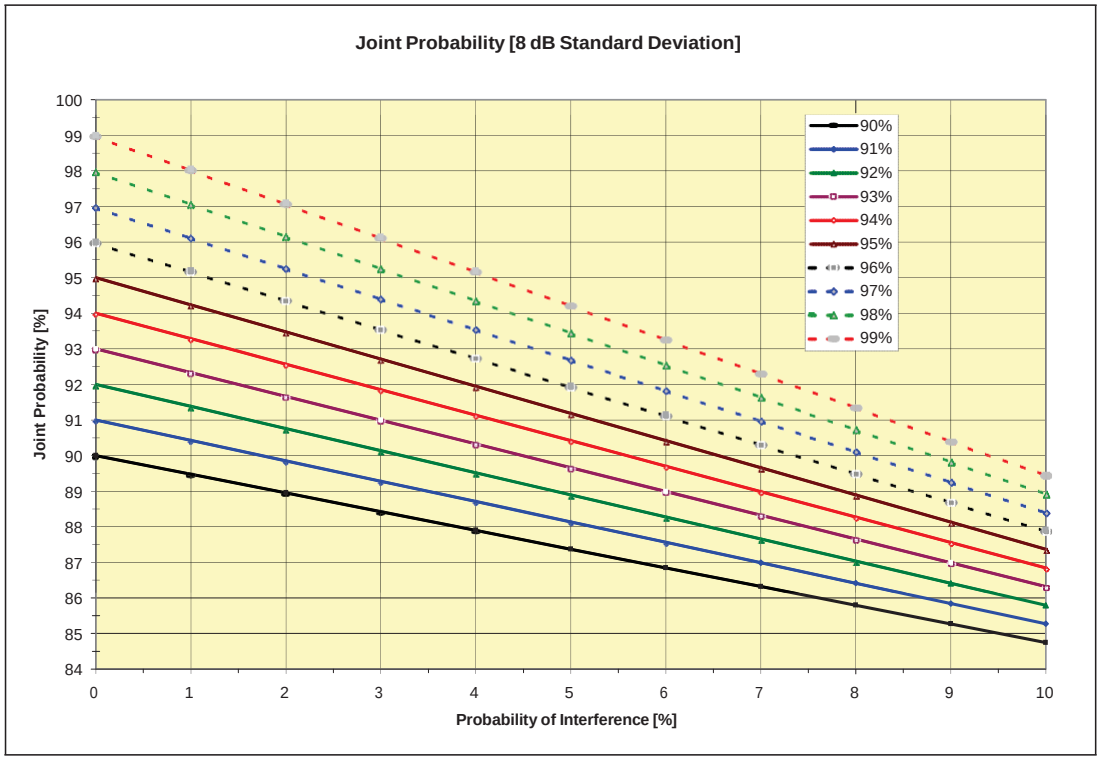


Figure A2 - Effect Of Joint Probability On The Composite Probability

For adjacent and alternate channels, the channel performance requirement must be added to the C/I ratio. When this is applied, then a 1% probability of adjacent/alternate channel interference can be rephrased to mean, there is a 99% probability that the "channel performance ratio" will be achieved.

Appendix G – Table of 700 MHz Channel Assignments

Region 33 - Ohio
Channel Allotments

Last Update: 04/27/2008

Adams	General Use	161-164	770.01250	800.01250
	General Use	257-260	770.61250	800.61250
	General Use	361-364	771.26250	801.26250
	General Use	401-404	771.51250	801.51250
	General Use	449-452	771.81250	801.81250
	General Use	537-540	772.36250	802.36250
	General Use	865-868	774.41250	804.41250
	State License	69-72	769.43750	799.43750
	State License	889-892	774.56250	804.56250
Allen	General Use	41-44	769.26250	799.26250
	General Use	85-88	769.53750	799.53750
	General Use	129-132	769.81250	799.81250
	General Use	253-256	770.58750	800.58750
	General Use	325-328	771.03750	801.03750
	General Use	421-424	771.63750	801.63750
	General Use	461-464	771.88750	801.88750
	General Use	529-532	772.31250	802.31250
	General Use	585-588	772.66250	802.66250
	General Use	701-704	773.38750	803.38750
	General Use	745-748	773.66250	803.66250
	General Use	833-836	774.21250	804.21250
	General Use	873-876	774.46250	804.46250
	State License	25-28	769.16250	799.16250
	State License	153-156	769.96250	799.96250
	State License	769-772	773.81250	803.81250
	State License	809-812	774.06250	804.06250
	State License	925-928	774.78750	804.78750
Ashland	General Use	249-252	770.56250	800.56250
	General Use	413-416	771.58750	801.58750
	General Use	489-492	772.06250	802.06250
	General Use	629-632	772.93750	802.93750
	General Use	709-712	773.43750	803.43750
	State License	25-28	769.16250	799.16250
	State License	73-76	769.46250	799.46250
	State License	929-932	774.81250	804.81250
Ashtabula	General Use	85-88	769.53750	799.53750
	General Use	349-352	771.18750	801.18750
	General Use	441-444	771.76250	801.76250
	General Use	501-504	772.13750	802.13750

	General Use	545-548	772.41250	802.41250
	General Use	597-600	772.73750	802.73750
	General Use	669-672	773.18750	803.18750
	General Use	789-792	773.93750	803.93750
	General Use	909-912	774.68750	804.68750
	State License	69-72	769.43750	799.43750
	State License	189-192	770.18750	800.18750
	State License	273-276	770.71250	800.71250
	State License	893-896	774.58750	804.58750
Athens	General Use	41-44	769.26250	799.26250
	General Use	161-164	770.01250	800.01250
	General Use	249-252	770.56250	800.56250
	General Use	341-344	771.13750	801.13750
	General Use	385-388	771.41250	801.41250
	General Use	449-452	771.81250	801.81250
	General Use	493-496	772.08750	802.08750
	General Use	589-592	772.68750	802.68750
	General Use	637-640	772.98750	802.98750
	General Use	677-680	773.23750	803.23750
	General Use	785-788	773.91250	803.91250
	General Use	833-836	774.21250	804.21250
	State License	269-272	770.68750	800.68750
	State License	729-732	773.56250	803.56250
	State License	849-852	774.31250	804.31250
	State License	889-892	774.56250	804.56250
Auglaize	General Use	57-60	769.36250	799.36250
	General Use	97-100	769.61250	799.61250
	General Use	165-168	770.03750	800.03750
	General Use	401-404	771.51250	801.51250
	General Use	445-448	771.78750	801.78750
	General Use	517-520	772.23750	802.23750
	General Use	901-904	774.63750	804.63750
	State License	113-116	769.71250	799.71250
	State License	229-232	770.43750	800.43750
	State License	849-852	774.31250	804.31250
Belmont	General Use	121-124	769.76250	799.76250
	General Use	177-180	770.11250	800.11250
	General Use	297-300	770.86250	800.86250
	General Use	341-344	771.13750	801.13750
	General Use	389-392	771.43750	801.43750
	General Use	437-440	771.73750	801.73750
	General Use	541-544	772.38750	802.38750
	General Use	593-596	772.71250	802.71250

	General Use	877-880	774.48750	804.48750
	General Use	917-920	774.73750	804.73750
	State License	185-188	770.16250	800.16250
	State License	225-228	770.41250	800.41250
	State License	305-308	770.91250	800.91250
	State License	733-736	773.58750	803.58750
Brown	General Use	353-356	771.21250	801.21250
	General Use	409-412	771.56250	801.56250
	General Use	561-564	772.51250	802.51250
	General Use	625-628	772.91250	802.91250
	General Use	677-680	773.23750	803.23750
	General Use	757-760	773.73750	803.73750
	State License	649-652	773.06250	803.06250
	State License	693-696	773.33750	803.33750
Butler	General Use	45-48	769.28750	799.28750
	General Use	165-168	770.03750	800.03750
	General Use	281-284	770.76250	800.76250
	General Use	337-340	771.11250	801.11250
	General Use	401-404	771.51250	801.51250
	General Use	449-452	771.81250	801.81250
	General Use	489-492	772.06250	802.06250
	General Use	533-536	772.33750	802.33750
	General Use	577-580	772.61250	802.61250
	General Use	701-704	773.38750	803.38750
	General Use	745-748	773.66250	803.66250
	General Use	821-824	774.13750	804.13750
	General Use	865-868	774.41250	804.41250
	General Use	905-908	774.66250	804.66250
	State License	73-76	769.46250	799.46250
	State License	189-192	770.18750	800.18750
	State License	653-656	773.08750	803.08750
	State License	765-768	773.78750	803.78750
	State License	853-856	774.33750	804.33750
Carroll	General Use	325-328	771.03750	801.03750
	General Use	405-408	771.53750	801.53750
	General Use	501-504	772.13750	802.13750
	General Use	545-548	772.41250	802.41250
	General Use	601-604	772.76250	802.76250
	State License	153-156	769.96250	799.96250
	State License	729-732	773.56250	803.56250
Champaign	General Use	13-16	769.08750	799.08750
	General Use	393-396	771.46250	801.46250
	General Use	441-444	771.76250	801.76250

	General Use	489-492	772.06250	802.06250
	General Use	533-536	772.33750	802.33750
	General Use	633-636	772.96250	802.96250
	General Use	785-788	773.91250	803.91250
	State License	693-696	773.33750	803.33750
	State License	929-932	774.81250	804.81250
Clark	General Use	53-56	769.33750	799.33750
	General Use	161-164	770.01250	800.01250
	General Use	321-324	771.01250	801.01250
	General Use	373-376	771.33750	801.33750
	General Use	413-416	771.58750	801.58750
	General Use	473-476	771.96250	801.96250
	General Use	573-576	772.58750	802.58750
	General Use	625-628	772.91250	802.91250
	General Use	677-680	773.23750	803.23750
	General Use	757-760	773.73750	803.73750
	General Use	861-864	774.38750	804.38750
	General Use	913-916	774.71250	804.71250
	State License	269-272	770.68750	800.68750
	State License	649-652	773.06250	803.06250
	State License	729-732	773.56250	803.56250
Clermont	General Use	97-100	769.61250	799.61250
	General Use	137-140	769.86250	799.86250
	General Use	209-212	770.31250	800.31250
	General Use	249-252	770.56250	800.56250
	General Use	293-296	770.83750	800.83750
	General Use	369-372	771.31250	801.31250
	General Use	441-444	771.76250	801.76250
	General Use	497-500	772.11250	802.11250
	General Use	545-548	772.41250	802.41250
	General Use	601-604	772.76250	802.76250
	State License	733-736	773.58750	803.58750
	State License	805-808	774.03750	804.03750
	State License	925-928	774.78750	804.78750
Clinton	General Use	85-88	769.53750	799.53750
	General Use	333-336	771.08750	801.08750
	General Use	377-380	771.36250	801.36250
	General Use	433-436	771.71250	801.71250
	General Use	485-488	772.03750	802.03750
	General Use	529-532	772.31250	802.31250
	General Use	613-616	772.83750	802.83750
	General Use	665-668	773.16250	803.16250
	State License	229-232	770.43750	800.43750

	State License	309-312	770.93750	800.93750
Columbiana	General Use	133-136	769.83750	799.83750
	General Use	257-260	770.61250	800.61250
	General Use	369-372	771.31250	801.31250
	General Use	513-516	772.21250	802.21250
	General Use	557-560	772.48750	802.48750
	General Use	609-612	772.81250	802.81250
	General Use	833-836	774.21250	804.21250
	State License	25-28	769.16250	799.16250
	State License	769-772	773.81250	803.81250
Coshocton	General Use	161-164	770.01250	800.01250
	General Use	345-348	771.16250	801.16250
	General Use	449-452	771.81250	801.81250
	General Use	621-624	772.88750	802.88750
	General Use	677-680	773.23750	803.23750
	General Use	757-760	773.73750	803.73750
	State License	269-272	770.68750	800.68750
	State License	693-696	773.33750	803.33750
Crawford	General Use	165-168	770.03750	800.03750
	General Use	365-368	771.28750	801.28750
	General Use	517-520	772.23750	802.23750
	General Use	673-676	773.21250	803.21250
	General Use	717-720	773.48750	803.48750
	General Use	901-904	774.63750	804.63750
	General Use	941-944	774.88750	804.88750
	State License	29-32	769.18750	799.18750
	State License	649-652	773.06250	803.06250
	State License	729-732	773.56250	803.56250
Cuyahoga	General Use	41-44	769.26250	799.26250
	General Use	81-84	769.51250	799.51250
	General Use	121-124	769.76250	799.76250
	General Use	161-164	770.01250	800.01250
	General Use	241-244	770.51250	800.51250
	General Use	285-288	770.78750	800.78750
	General Use	357-360	771.23750	801.23750
	General Use	417-420	771.61250	801.61250
	General Use	473-476	771.96250	801.96250
	General Use	517-520	772.23750	802.23750
	General Use	585-588	772.66250	802.66250
	General Use	637-640	772.98750	802.98750
	General Use	677-680	773.23750	803.23750
	General Use	717-720	773.48750	803.48750
	General Use	785-788	773.91250	803.91250

	General Use	825-828	774.16250	804.16250
	General Use	865-868	774.41250	804.41250
	General Use	905-908	774.66250	804.66250
	General Use	945-948	774.91250	804.91250
	State License	65-68	769.41250	799.41250
	State License	185-188	770.16250	800.16250
	State License	229-232	770.43750	800.43750
	State License	269-272	770.68750	800.68750
	State License	313-316	770.96250	800.96250
	State License	645-648	773.03750	803.03750
	State License	685-688	773.28750	803.28750
	State License	773-776	773.83750	803.83750
	State License	845-848	774.28750	804.28750
	State License	885-888	774.53750	804.53750
	State License	925-928	774.78750	804.78750
Darke	General Use	217-220	770.36250	800.36250
	General Use	257-260	770.61250	800.61250
	General Use	341-344	771.13750	801.13750
	General Use	381-384	771.38750	801.38750
	General Use	477-480	771.98750	801.98750
	General Use	545-548	772.41250	802.41250
	General Use	609-612	772.81250	802.81250
	General Use	673-676	773.21250	803.21250
	General Use	945-948	774.91250	804.91250
	State License	149-152	769.93750	799.93750
	State License	265-268	770.66250	800.66250
	State License	645-648	773.03750	803.03750
	State License	733-736	773.58750	803.58750
Defiance	General Use	45-48	769.28750	799.28750
	General Use	89-92	769.56250	799.56250
	General Use	137-140	769.86250	799.86250
	General Use	289-292	770.81250	800.81250
	General Use	417-420	771.61250	801.61250
	General Use	469-472	771.93750	801.93750
	General Use	673-676	773.21250	803.21250
	State License	313-316	770.96250	800.96250
	State License	733-736	773.58750	803.58750
	State License	805-808	774.03750	804.03750
Delaware	General Use	81-84	769.51250	799.51250
	General Use	169-172	770.06250	800.06250
	General Use	369-372	771.31250	801.31250
	General Use	417-420	771.61250	801.61250
	General Use	465-468	771.91250	801.91250

	General Use	505-508	772.16250	802.16250
	General Use	545-548	772.41250	802.41250
	General Use	593-596	772.71250	802.71250
	General Use	637-640	772.98750	802.98750
	General Use	713-716	773.46250	803.46250
	State License	149-152	769.93750	799.93750
	State License	265-268	770.66250	800.66250
	State License	653-656	773.08750	803.08750
Erie	General Use	45-48	769.28750	799.28750
	General Use	201-204	770.26250	800.26250
	General Use	289-292	770.81250	800.81250
	General Use	345-348	771.16250	801.16250
	General Use	457-460	771.86250	801.86250
	General Use	533-536	772.33750	802.33750
	General Use	633-636	772.96250	802.96250
	General Use	713-716	773.46250	803.46250
	General Use	861-864	774.38750	804.38750
	State License	69-72	769.43750	799.43750
	State License	225-228	770.41250	800.41250
	State License	733-736	773.58750	803.58750
	State License	805-808	774.03750	804.03750
Fairfield	General Use	89-92	769.56250	799.56250
	General Use	165-168	770.03750	800.03750
	General Use	329-332	771.06250	801.06250
	General Use	377-380	771.36250	801.36250
	General Use	421-424	771.63750	801.63750
	General Use	477-480	771.98750	801.98750
	General Use	565-568	772.53750	802.53750
	General Use	633-636	772.96250	802.96250
	General Use	741-744	773.63750	803.63750
	General Use	797-800	773.98750	803.98750
	General Use	941-944	774.88750	804.88750
	State License	25-28	769.16250	799.16250
	State License	73-76	769.46250	799.46250
	State License	145-148	769.91250	799.91250
	State License	773-776	773.83750	803.83750
Fayette	General Use	241-244	770.51250	800.51250
	General Use	445-448	771.78750	801.78750
	General Use	513-516	772.21250	802.21250
	General Use	589-592	772.68750	802.68750
	General Use	709-712	773.43750	803.43750
	State License	153-156	769.96250	799.96250
Franklin	General Use	17-20	769.11250	799.11250

	General Use	57-60	769.36250	799.36250
	General Use	97-100	769.61250	799.61250
	General Use	137-140	769.86250	799.86250
	General Use	177-180	770.11250	800.11250
	General Use	217-220	770.36250	800.36250
	General Use	257-260	770.61250	800.61250
	General Use	297-300	770.86250	800.86250
	General Use	353-356	771.21250	801.21250
	General Use	401-404	771.51250	801.51250
	General Use	457-460	771.86250	801.86250
	General Use	537-540	772.36250	802.36250
	General Use	577-580	772.61250	802.61250
	General Use	617-620	772.86250	802.86250
	General Use	661-664	773.13750	803.13750
	General Use	701-704	773.38750	803.38750
	General Use	749-752	773.68750	803.68750
	General Use	789-792	773.93750	803.93750
	General Use	837-840	774.23750	804.23750
	General Use	877-880	774.48750	804.48750
	General Use	917-920	774.73750	804.73750
	State License	33-36	769.21250	799.21250
	State License	113-116	769.71250	799.71250
	State License	193-196	770.21250	800.21250
	State License	233-236	770.46250	800.46250
	State License	273-276	770.71250	800.71250
	State License	313-316	770.96250	800.96250
	State License	645-648	773.03750	803.03750
	State License	685-688	773.28750	803.28750
	State License	725-728	773.53750	803.53750
	State License	765-768	773.78750	803.78750
	State License	805-808	774.03750	804.03750
	State License	845-848	774.28750	804.28750
	State License	885-888	774.53750	804.53750
	State License	925-928	774.78750	804.78750
Fulton	General Use	401-404	771.51250	801.51250
	General Use	453-456	771.83750	801.83750
	General Use	549-552	772.43750	802.43750
	General Use	621-624	772.88750	802.88750
	General Use	713-716	773.46250	803.46250
	General Use	833-836	774.21250	804.21250
	State License	145-148	769.91250	799.91250
	State License	185-188	770.16250	800.16250
Gallia	General Use	177-180	770.11250	800.11250

	General Use	245-248	770.53750	800.53750
	General Use	333-336	771.08750	801.08750
	General Use	441-444	771.76250	801.76250
	General Use	481-484	772.01250	802.01250
	General Use	593-596	772.71250	802.71250
	General Use	837-840	774.23750	804.23750
	State License	29-32	769.18750	799.18750
	State License	929-932	774.81250	804.81250
Geauga	General Use	341-344	771.13750	801.13750
	General Use	393-396	771.46250	801.46250
	General Use	465-468	771.91250	801.91250
	General Use	525-528	772.28750	802.28750
	General Use	569-572	772.56250	802.56250
	General Use	613-616	772.83750	802.83750
	State License	153-156	769.96250	799.96250
	State License	809-812	774.06250	804.06250
Greene	General Use	41-44	769.26250	799.26250
	General Use	173-176	770.08750	800.08750
	General Use	213-216	770.33750	800.33750
	General Use	253-256	770.58750	800.58750
	General Use	345-348	771.16250	801.16250
	General Use	397-400	771.48750	801.48750
	General Use	461-464	771.88750	801.88750
	General Use	541-544	772.38750	802.38750
	General Use	581-584	772.63750	802.63750
	General Use	741-744	773.63750	803.63750
	General Use	901-904	774.63750	804.63750
	General Use	941-944	774.88750	804.88750
	State License	145-148	769.91250	799.91250
	State License	185-188	770.16250	800.16250
	State License	849-852	774.31250	804.31250
Guernsey	General Use	81-84	769.51250	799.51250
	General Use	209-212	770.31250	800.31250
	General Use	365-368	771.28750	801.28750
	General Use	509-512	772.18750	802.18750
	General Use	561-564	772.51250	802.51250
	General Use	629-632	772.93750	802.93750
	General Use	745-748	773.66250	803.66250
	General Use	797-800	773.98750	803.98750
	General Use	837-840	774.23750	804.23750
	State License	193-196	770.21250	800.21250
	State License	645-648	773.03750	803.03750
	State License	685-688	773.28750	803.28750

	State License	725-728	773.53750	803.53750
	State License	933-936	774.83750	804.83750
Hamilton	General Use	13-16	769.08750	799.08750
	General Use	81-84	769.51250	799.51250
	General Use	129-132	769.81250	799.81250
	General Use	177-180	770.11250	800.11250
	General Use	217-220	770.36250	800.36250
	General Use	325-328	771.03750	801.03750
	General Use	385-388	771.41250	801.41250
	General Use	425-428	771.66250	801.66250
	General Use	477-480	771.98750	801.98750
	General Use	553-556	772.46250	802.46250
	General Use	621-624	772.88750	802.88750
	General Use	669-672	773.18750	803.18750
	General Use	713-716	773.46250	803.46250
	General Use	753-756	773.71250	803.71250
	General Use	793-796	773.96250	803.96250
	General Use	837-840	774.23750	804.23750
	General Use	877-880	774.48750	804.48750
	General Use	945-948	774.91250	804.91250
	State License	33-36	769.21250	799.21250
	State License	113-116	769.71250	799.71250
	State License	233-236	770.46250	800.46250
	State License	313-316	770.96250	800.96250
	State License	645-648	773.03750	803.03750
	State License	685-688	773.28750	803.28750
	State License	773-776	773.83750	803.83750
	State License	813-816	774.08750	804.08750
	State License	885-888	774.53750	804.53750
Hancock	General Use	17-20	769.11250	799.11250
	General Use	93-96	769.58750	799.58750
	General Use	161-164	770.01250	800.01250
	General Use	373-376	771.33750	801.33750
	General Use	513-516	772.21250	802.21250
	General Use	553-556	772.46250	802.46250
	General Use	617-620	772.86250	802.86250
	General Use	661-664	773.13750	803.13750
	General Use	709-712	773.43750	803.43750
	General Use	945-948	774.91250	804.91250
	State License	33-36	769.21250	799.21250
	State License	305-308	770.91250	800.91250
	State License	645-648	773.03750	803.03750
	State License	725-728	773.53750	803.53750

	State License	845-848	774.28750	804.28750
Hardin	General Use	337-340	771.11250	801.11250
	General Use	385-388	771.41250	801.41250
	General Use	437-440	771.73750	801.73750
	General Use	541-544	772.38750	802.38750
	General Use	629-632	772.93750	802.93750
	State License	145-148	769.91250	799.91250
	State License	933-936	774.83750	804.83750
Harrison	General Use	129-132	769.81250	799.81250
	General Use	397-400	771.48750	801.48750
	General Use	489-492	772.06250	802.06250
	General Use	665-668	773.16250	803.16250
	General Use	709-712	773.43750	803.43750
	State License	73-76	769.46250	799.46250
Henry	General Use	257-260	770.61250	800.61250
	General Use	321-324	771.01250	801.01250
	General Use	365-368	771.28750	801.28750
	General Use	433-436	771.71250	801.71250
	General Use	501-504	772.13750	802.13750
	General Use	581-584	772.63750	802.63750
	State License	73-76	769.46250	799.46250
	State License	193-196	770.21250	800.21250
	State License	689-692	773.31250	803.31250
Highland	General Use	125-128	769.78750	799.78750
	General Use	341-344	771.13750	801.13750
	General Use	501-504	772.13750	802.13750
	General Use	549-552	772.43750	802.43750
	General Use	597-600	772.73750	802.73750
	General Use	785-788	773.91250	803.91250
	State License	29-32	769.18750	799.18750
	State License	769-772	773.81250	803.81250
	State License	929-932	774.81250	804.81250
Hocking	General Use	213-216	770.33750	800.33750
	General Use	461-464	771.88750	801.88750
	General Use	517-520	772.23750	802.23750
	General Use	613-616	772.83750	802.83750
	General Use	665-668	773.16250	803.16250
	General Use	901-904	774.63750	804.63750
	State License	189-192	770.18750	800.18750
	State License	229-232	770.43750	800.43750
Holmes	General Use	49-52	769.31250	799.31250
	General Use	241-244	770.51250	800.51250
	General Use	289-292	770.81250	800.81250

	General Use	441-444	771.76250	801.76250
	General Use	589-592	772.68750	802.68750
	State License	189-192	770.18750	800.18750
	State License	229-232	770.43750	800.43750
Huron	General Use	97-100	769.61250	799.61250
	General Use	137-140	769.86250	799.86250
	General Use	217-220	770.36250	800.36250
	General Use	321-324	771.01250	801.01250
	General Use	405-408	771.53750	801.53750
	General Use	449-452	771.81250	801.81250
	General Use	501-504	772.13750	802.13750
	General Use	593-596	772.71250	802.71250
	State License	145-148	769.91250	799.91250
	State License	233-236	770.46250	800.46250
	State License	693-696	773.33750	803.33750
Jackson	General Use	45-48	769.28750	799.28750
	General Use	93-96	769.58750	799.58750
	General Use	429-432	771.68750	801.68750
	General Use	505-508	772.16250	802.16250
	General Use	601-604	772.76250	802.76250
	General Use	669-672	773.18750	803.18750
	General Use	861-864	774.38750	804.38750
	State License	65-68	769.41250	799.41250
	State License	185-188	770.16250	800.16250
	State License	885-888	774.53750	804.53750
Jefferson	General Use	201-204	770.26250	800.26250
	General Use	245-248	770.53750	800.53750
	General Use	285-288	770.78750	800.78750
	General Use	357-360	771.23750	801.23750
	General Use	429-432	771.68750	801.68750
	General Use	473-476	771.96250	801.96250
	General Use	569-572	772.56250	802.56250
	General Use	637-640	772.98750	802.98750
	General Use	865-868	774.41250	804.41250
	State License	233-236	770.46250	800.46250
	State License	813-816	774.08750	804.08750
	State License	893-896	774.58750	804.58750
Knox	General Use	325-328	771.03750	801.03750
	General Use	397-400	771.48750	801.48750
	General Use	513-516	772.21250	802.21250
	General Use	557-560	772.48750	802.48750
	General Use	601-604	772.76250	802.76250
	General Use	945-948	774.91250	804.91250

	State License	733-736	773.58750	803.58750
	State License	889-892	774.56250	804.56250
Lake	General Use	49-52	769.31250	799.31250
	General Use	133-136	769.83750	799.83750
	General Use	217-220	770.36250	800.36250
	General Use	325-328	771.03750	801.03750
	General Use	385-388	771.41250	801.41250
	General Use	425-428	771.66250	801.66250
	General Use	489-492	772.06250	802.06250
	General Use	533-536	772.33750	802.33750
	General Use	577-580	772.61250	802.61250
	General Use	629-632	772.93750	802.93750
	General Use	709-712	773.43750	803.43750
	General Use	833-836	774.21250	804.21250
	State License	25-28	769.16250	799.16250
	State License	145-148	769.91250	799.91250
	State License	729-732	773.56250	803.56250
Lawrence	General Use	85-88	769.53750	799.53750
	General Use	125-128	769.78750	799.78750
	General Use	217-220	770.36250	800.36250
	General Use	325-328	771.03750	801.03750
	General Use	389-392	771.43750	801.43750
	General Use	465-468	771.91250	801.91250
	General Use	541-544	772.38750	802.38750
	General Use	585-588	772.66250	802.66250
	General Use	633-636	772.96250	802.96250
	General Use	781-784	773.88750	803.88750
	General Use	829-832	774.18750	804.18750
	General Use	917-920	774.73750	804.73750
	State License	73-76	769.46250	799.46250
	State License	113-116	769.71250	799.71250
	State License	725-728	773.53750	803.53750
	State License	769-772	773.81250	803.81250
Licking	General Use	45-48	769.28750	799.28750
	General Use	125-128	769.78750	799.78750
	General Use	205-208	770.28750	800.28750
	General Use	245-248	770.53750	800.53750
	General Use	285-288	770.78750	800.78750
	General Use	361-364	771.26250	801.26250
	General Use	529-532	772.31250	802.31250
	General Use	585-588	772.66250	802.66250
	General Use	669-672	773.18750	803.18750
	General Use	781-784	773.88750	803.88750

	General Use	825-828	774.16250	804.16250
	General Use	865-868	774.41250	804.41250
	General Use	905-908	774.66250	804.66250
	State License	185-188	770.16250	800.16250
	State License	225-228	770.41250	800.41250
	State License	305-308	770.91250	800.91250
Logan	General Use	201-204	770.26250	800.26250
	General Use	377-380	771.36250	801.36250
	General Use	497-500	772.11250	802.11250
	General Use	569-572	772.56250	802.56250
	General Use	665-668	773.16250	803.16250
	General Use	753-756	773.71250	803.71250
	General Use	909-912	774.68750	804.68750
	State License	73-76	769.46250	799.46250
	State License	189-192	770.18750	800.18750
Lorain	General Use	13-16	769.08750	799.08750
	General Use	53-56	769.33750	799.33750
	General Use	129-132	769.81250	799.81250
	General Use	169-172	770.06250	800.06250
	General Use	209-212	770.31250	800.31250
	General Use	257-260	770.61250	800.61250
	General Use	329-332	771.06250	801.06250
	General Use	369-372	771.31250	801.31250
	General Use	437-440	771.73750	801.73750
	General Use	509-512	772.18750	802.18750
	General Use	549-552	772.43750	802.43750
	General Use	605-608	772.78750	802.78750
	General Use	669-672	773.18750	803.18750
	General Use	753-756	773.71250	803.71250
	General Use	797-800	773.98750	803.98750
	General Use	873-876	774.46250	804.46250
	General Use	913-916	774.71250	804.71250
	State License	33-36	769.21250	799.21250
	State License	109-112	769.68750	799.68750
	State License	193-196	770.21250	800.21250
	State License	305-308	770.91250	800.91250
	State License	653-656	773.08750	803.08750
Lucas	General Use	13-16	769.08750	799.08750
	General Use	125-128	769.78750	799.78750
	General Use	165-168	770.03750	800.03750
	General Use	205-208	770.28750	800.28750
	General Use	245-248	770.53750	800.53750
	General Use	285-288	770.78750	800.78750

	General Use	329-332	771.06250	801.06250
	General Use	381-384	771.38750	801.38750
	General Use	445-448	771.78750	801.78750
	General Use	517-520	772.23750	802.23750
	General Use	557-560	772.48750	802.48750
	General Use	613-616	772.83750	802.83750
	General Use	665-668	773.16250	803.16250
	General Use	705-708	773.41250	803.41250
	General Use	781-784	773.88750	803.88750
	General Use	825-828	774.16250	804.16250
	General Use	877-880	774.48750	804.48750
	General Use	941-944	774.88750	804.88750
	State License	29-32	769.18750	799.18750
	State License	105-108	769.66250	799.66250
	State License	229-232	770.43750	800.43750
	State License	649-652	773.06250	803.06250
	State License	729-732	773.56250	803.56250
	State License	849-852	774.31250	804.31250
	State License	889-892	774.56250	804.56250
	State License	933-936	774.83750	804.83750
Madison	General Use	129-132	769.81250	799.81250
	General Use	281-284	770.76250	800.76250
	General Use	381-384	771.38750	801.38750
	General Use	425-428	771.66250	801.66250
	General Use	481-484	772.01250	802.01250
	General Use	521-524	772.26250	802.26250
	General Use	821-824	774.13750	804.13750
	State License	69-72	769.43750	799.43750
	State License	813-816	774.08750	804.08750
Mahoning	General Use	45-48	769.28750	799.28750
	General Use	89-92	769.56250	799.56250
	General Use	177-180	770.11250	800.11250
	General Use	297-300	770.86250	800.86250
	General Use	345-348	771.16250	801.16250
	General Use	389-392	771.43750	801.43750
	General Use	461-464	771.88750	801.88750
	General Use	565-568	772.53750	802.53750
	General Use	621-624	772.88750	802.88750
	General Use	705-708	773.41250	803.41250
	General Use	745-748	773.66250	803.66250
	General Use	913-916	774.71250	804.71250
	State License	193-196	770.21250	800.21250
	State License	889-892	774.56250	804.56250

	State License	929-932	774.81250	804.81250
Marion	General Use	133-136	769.83750	799.83750
	General Use	293-296	770.83750	800.83750
	General Use	357-360	771.23750	801.23750
	General Use	429-432	771.68750	801.68750
	General Use	485-488	772.03750	802.03750
	General Use	581-584	772.63750	802.63750
	General Use	621-624	772.88750	802.88750
	General Use	705-708	773.41250	803.41250
	General Use	793-796	773.96250	803.96250
	State License	105-108	769.66250	799.66250
	State License	309-312	770.93750	800.93750
	State License	689-692	773.31250	803.31250
Medina	General Use	93-96	769.58750	799.58750
	General Use	349-352	771.18750	801.18750
	General Use	401-404	771.51250	801.51250
	General Use	453-456	771.83750	801.83750
	General Use	497-500	772.11250	802.11250
	General Use	537-540	772.36250	802.36250
	General Use	597-600	772.73750	802.73750
	General Use	661-664	773.13750	803.13750
	General Use	741-744	773.63750	803.63750
	State License	149-152	769.93750	799.93750
	State License	813-816	774.08750	804.08750
	State License	893-896	774.58750	804.58750
Meigs	General Use	57-60	769.36250	799.36250
	General Use	293-296	770.83750	800.83750
	General Use	473-476	771.96250	801.96250
	General Use	561-564	772.51250	802.51250
	General Use	825-828	774.16250	804.16250
	General Use	877-880	774.48750	804.48750
	State License	153-156	769.96250	799.96250
	State License	765-768	773.78750	803.78750
Mercer	General Use	173-176	770.08750	800.08750
	General Use	369-372	771.31250	801.31250
	General Use	493-496	772.08750	802.08750
	General Use	577-580	772.61250	802.61250
	General Use	637-640	772.98750	802.98750
	General Use	825-828	774.16250	804.16250
	General Use	865-868	774.41250	804.41250
	State License	185-188	770.16250	800.16250
	State License	893-896	774.58750	804.58750
Miami	General Use	81-84	769.51250	799.51250

	General Use	125-128	769.78750	799.78750
	General Use	353-356	771.21250	801.21250
	General Use	405-408	771.53750	801.53750
	General Use	453-456	771.83750	801.83750
	General Use	553-556	772.46250	802.46250
	General Use	601-604	772.76250	802.76250
	General Use	705-708	773.41250	803.41250
	General Use	797-800	773.98750	803.98750
	General Use	837-840	774.23750	804.23750
	State License	33-36	769.21250	799.21250
	State License	233-236	770.46250	800.46250
	State License	313-316	770.96250	800.96250
	State License	773-776	773.83750	803.83750
Monroe	General Use	57-60	769.36250	799.36250
	General Use	329-332	771.06250	801.06250
	General Use	377-380	771.36250	801.36250
	General Use	421-424	771.63750	801.63750
	General Use	497-500	772.11250	802.11250
	General Use	573-576	772.58750	802.58750
	General Use	717-720	773.48750	803.48750
	State License	105-108	769.66250	799.66250
	State License	273-276	770.71250	800.71250
Montgomery	General Use	17-20	769.11250	799.11250
	General Use	93-96	769.58750	799.58750
	General Use	133-136	769.83750	799.83750
	General Use	205-208	770.28750	800.28750
	General Use	245-248	770.53750	800.53750
	General Use	289-292	770.81250	800.81250
	General Use	329-332	771.06250	801.06250
	General Use	389-392	771.43750	801.43750
	General Use	437-440	771.73750	801.73750
	General Use	525-528	772.28750	802.28750
	General Use	565-568	772.53750	802.53750
	General Use	617-620	772.86250	802.86250
	General Use	661-664	773.13750	803.13750
	General Use	717-720	773.48750	803.48750
	General Use	789-792	773.93750	803.93750
	General Use	829-832	774.18750	804.18750
	General Use	873-876	774.46250	804.46250
	State License	25-28	769.16250	799.16250
	State License	109-112	769.68750	799.68750
	State License	225-228	770.41250	800.41250
	State License	305-308	770.91250	800.91250

	State License	689-692	773.31250	803.31250
	State License	809-812	774.06250	804.06250
	State License	889-892	774.56250	804.56250
	State License	933-936	774.83750	804.83750
Morgan	General Use	241-244	770.51250	800.51250
	General Use	281-284	770.76250	800.76250
	General Use	321-324	771.01250	801.01250
	General Use	501-504	772.13750	802.13750
	General Use	713-716	773.46250	803.46250
	General Use	821-824	774.13750	804.13750
	State License	769-772	773.81250	803.81250
Morrow	General Use	213-216	770.33750	800.33750
	General Use	253-256	770.58750	800.58750
	General Use	389-392	771.43750	801.43750
	General Use	445-448	771.78750	801.78750
	General Use	493-496	772.08750	802.08750
	State License	65-68	769.41250	799.41250
Muskingum	General Use	13-16	769.08750	799.08750
	General Use	53-56	769.33750	799.33750
	General Use	93-96	769.58750	799.58750
	General Use	173-176	770.08750	800.08750
	General Use	293-296	770.83750	800.83750
	General Use	333-336	771.08750	801.08750
	General Use	373-376	771.33750	801.33750
	General Use	429-432	771.68750	801.68750
	General Use	473-476	771.96250	801.96250
	General Use	569-572	772.56250	802.56250
	General Use	609-612	772.81250	802.81250
	General Use	705-708	773.41250	803.41250
	State License	29-32	769.18750	799.18750
	State License	69-72	769.43750	799.43750
	State License	109-112	769.68750	799.68750
	State License	853-856	774.33750	804.33750
Noble	General Use	165-168	770.03750	800.03750
	General Use	401-404	771.51250	801.51250
	General Use	445-448	771.78750	801.78750
	General Use	581-584	772.63750	802.63750
	General Use	861-864	774.38750	804.38750
	State License	149-152	769.93750	799.93750
	State License	805-808	774.03750	804.03750
Ottawa	General Use	253-256	770.58750	800.58750
	General Use	397-400	771.48750	801.48750
	General Use	465-468	771.91250	801.91250

	General Use	505-508	772.16250	802.16250
	General Use	569-572	772.56250	802.56250
	General Use	789-792	773.93750	803.93750
	State License	149-152	769.93750	799.93750
	State License	189-192	770.18750	800.18750
	State License	309-312	770.93750	800.93750
Paulding	General Use	333-336	771.08750	801.08750
	General Use	485-488	772.03750	802.03750
	General Use	561-564	772.51250	802.51250
	General Use	633-636	772.96250	802.96250
	General Use	837-840	774.23750	804.23750
	State License	233-236	770.46250	800.46250
Perry	General Use	349-352	771.18750	801.18750
	General Use	393-396	771.46250	801.46250
	General Use	441-444	771.76250	801.76250
	General Use	541-544	772.38750	802.38750
	General Use	597-600	772.73750	802.73750
	General Use	873-876	774.46250	804.46250
	General Use	913-916	774.71250	804.71250
	State License	649-652	773.06250	803.06250
	State License	689-692	773.31250	803.31250
	State License	929-932	774.81250	804.81250
Pickaway	General Use	49-52	769.31250	799.31250
	General Use	121-124	769.76250	799.76250
	General Use	337-340	771.11250	801.11250
	General Use	389-392	771.43750	801.43750
	General Use	437-440	771.73750	801.73750
	General Use	553-556	772.46250	802.46250
	General Use	605-608	772.78750	802.78750
	General Use	673-676	773.21250	803.21250
	General Use	717-720	773.48750	803.48750
	General Use	829-832	774.18750	804.18750
	State License	105-108	769.66250	799.66250
	State License	933-936	774.83750	804.83750
Pike	General Use	169-172	770.06250	800.06250
	General Use	349-352	771.18750	801.18750
	General Use	393-396	771.46250	801.46250
	General Use	557-560	772.48750	802.48750
	General Use	609-612	772.81250	802.81250
	General Use	713-716	773.46250	803.46250
	General Use	793-796	773.96250	803.96250
	State License	109-112	769.68750	799.68750
	State License	149-152	769.93750	799.93750

	State License	853-856	774.33750	804.33750
Portage	General Use	97-100	769.61250	799.61250
	General Use	321-324	771.01250	801.01250
	General Use	381-384	771.38750	801.38750
	General Use	493-496	772.08750	802.08750
	General Use	541-544	772.38750	802.38750
	General Use	593-596	772.71250	802.71250
	General Use	665-668	773.16250	803.16250
	General Use	757-760	773.73750	803.73750
	State License	73-76	769.46250	799.46250
	State License	693-696	773.33750	803.33750
	State License	733-736	773.58750	803.58750
Preble	General Use	297-300	770.86250	800.86250
	General Use	365-368	771.28750	801.28750
	General Use	429-432	771.68750	801.68750
	General Use	509-512	772.18750	802.18750
	General Use	585-588	772.66250	802.66250
	State License	845-848	774.28750	804.28750
Putnam	General Use	169-172	770.06250	800.06250
	General Use	341-344	771.13750	801.13750
	General Use	405-408	771.53750	801.53750
	General Use	521-524	772.26250	802.26250
	General Use	601-604	772.76250	802.76250
	General Use	785-788	773.91250	803.91250
	State License	109-112	769.68750	799.68750
	State License	225-228	770.41250	800.41250
	State License	653-656	773.08750	803.08750
Richland	General Use	89-92	769.56250	799.56250
	General Use	341-344	771.13750	801.13750
	General Use	381-384	771.38750	801.38750
	General Use	421-424	771.63750	801.63750
	General Use	461-464	771.88750	801.88750
	General Use	525-528	772.28750	802.28750
	General Use	565-568	772.53750	802.53750
	General Use	613-616	772.83750	802.83750
	General Use	745-748	773.66250	803.66250
	General Use	833-836	774.21250	804.21250
	State License	153-156	769.96250	799.96250
	State License	769-772	773.81250	803.81250
	State License	809-812	774.06250	804.06250
	State License	849-852	774.31250	804.31250
Ross	General Use	13-16	769.08750	799.08750
	General Use	133-136	769.83750	799.83750

	General Use	201-204	770.26250	800.26250
	General Use	289-292	770.81250	800.81250
	General Use	357-360	771.23750	801.23750
	General Use	405-408	771.53750	801.53750
	General Use	453-456	771.83750	801.83750
	General Use	533-536	772.33750	802.33750
	General Use	621-624	772.88750	802.88750
	General Use	753-756	773.71250	803.71250
	General Use	869-872	774.43750	804.43750
	General Use	909-912	774.68750	804.68750
	State License	265-268	770.66250	800.66250
	State License	653-656	773.08750	803.08750
	State License	809-812	774.06250	804.06250
	State License	893-896	774.58750	804.58750
Sandusky	General Use	57-60	769.36250	799.36250
	General Use	173-176	770.08750	800.08750
	General Use	361-364	771.26250	801.26250
	General Use	417-420	771.61250	801.61250
	General Use	545-548	772.41250	802.41250
	General Use	625-628	772.91250	802.91250
	General Use	837-840	774.23750	804.23750
	General Use	917-920	774.73750	804.73750
	State License	113-116	769.71250	799.71250
	State License	273-276	770.71250	800.71250
	State License	765-768	773.78750	803.78750
Scioto	General Use	17-20	769.11250	799.11250
	General Use	137-140	769.86250	799.86250
	General Use	205-208	770.28750	800.28750
	General Use	281-284	770.76250	800.76250
	General Use	369-372	771.31250	801.31250
	General Use	417-420	771.61250	801.61250
	General Use	457-460	771.86250	801.86250
	General Use	525-528	772.28750	802.28750
	General Use	573-576	772.58750	802.58750
	General Use	617-620	772.86250	802.86250
	General Use	661-664	773.13750	803.13750
	General Use	701-704	773.38750	803.38750
	General Use	749-752	773.68750	803.68750
	General Use	821-824	774.13750	804.13750
	General Use	873-876	774.46250	804.46250
	State License	313-316	770.96250	800.96250
	State License	685-688	773.28750	803.28750
	State License	805-808	774.03750	804.03750

	State License	845-848	774.28750	804.28750
Seneca	General Use	121-124	769.76250	799.76250
	General Use	241-244	770.51250	800.51250
	General Use	281-284	770.76250	800.76250
	General Use	333-336	771.08750	801.08750
	General Use	393-396	771.46250	801.46250
	General Use	469-472	771.93750	801.93750
	General Use	577-580	772.61250	802.61250
	General Use	821-824	774.13750	804.13750
	State License	313-316	770.96250	800.96250
	State License	685-688	773.28750	803.28750
	State License	885-888	774.53750	804.53750
Shelby	General Use	89-92	769.56250	799.56250
	General Use	137-140	769.86250	799.86250
	General Use	285-288	770.78750	800.78750
	General Use	361-364	771.26250	801.26250
	General Use	465-468	771.91250	801.91250
	General Use	505-508	772.16250	802.16250
	General Use	713-716	773.46250	803.46250
	General Use	877-880	774.48750	804.48750
	State License	685-688	773.28750	803.28750
	State License	765-768	773.78750	803.78750
	State License	885-888	774.53750	804.53750
Stark	General Use	125-128	769.78750	799.78750
	General Use	165-168	770.03750	800.03750
	General Use	205-208	770.28750	800.28750
	General Use	281-284	770.76250	800.76250
	General Use	361-364	771.26250	801.26250
	General Use	433-436	771.71250	801.71250
	General Use	477-480	771.98750	801.98750
	General Use	529-532	772.31250	802.31250
	General Use	581-584	772.63750	802.63750
	General Use	633-636	772.96250	802.96250
	General Use	673-676	773.21250	803.21250
	General Use	713-716	773.46250	803.46250
	General Use	781-784	773.88750	803.88750
	General Use	821-824	774.13750	804.13750
	General Use	861-864	774.38750	804.38750
	General Use	901-904	774.63750	804.63750
	General Use	941-944	774.88750	804.88750
	State License	105-108	769.66250	799.66250
	State License	265-268	770.66250	800.66250
	State License	309-312	770.93750	800.93750

	State License	649-652	773.06250	803.06250
	State License	805-808	774.03750	804.03750
Summit	General Use	17-20	769.11250	799.11250
	General Use	57-60	769.36250	799.36250
	General Use	173-176	770.08750	800.08750
	General Use	213-216	770.33750	800.33750
	General Use	253-256	770.58750	800.58750
	General Use	293-296	770.83750	800.83750
	General Use	333-336	771.08750	801.08750
	General Use	373-376	771.33750	801.33750
	General Use	445-448	771.78750	801.78750
	General Use	505-508	772.16250	802.16250
	General Use	561-564	772.51250	802.51250
	General Use	625-628	772.91250	802.91250
	General Use	701-704	773.38750	803.38750
	General Use	749-752	773.68750	803.68750
	General Use	793-796	773.96250	803.96250
	General Use	837-840	774.23750	804.23750
	General Use	877-880	774.48750	804.48750
	General Use	917-920	774.73750	804.73750
	State License	29-32	769.18750	799.18750
	State License	113-116	769.71250	799.71250
	State License	725-728	773.53750	803.53750
	State License	765-768	773.78750	803.78750
	State License	853-856	774.33750	804.33750
	State License	933-936	774.83750	804.83750
Trumbull	General Use	53-56	769.33750	799.33750
	General Use	129-132	769.81250	799.81250
	General Use	169-172	770.06250	800.06250
	General Use	245-248	770.53750	800.53750
	General Use	289-292	770.81250	800.81250
	General Use	329-332	771.06250	801.06250
	General Use	409-412	771.56250	801.56250
	General Use	485-488	772.03750	802.03750
	General Use	553-556	772.46250	802.46250
	General Use	605-608	772.78750	802.78750
	General Use	797-800	773.98750	803.98750
	General Use	873-876	774.46250	804.46250
	State License	33-36	769.21250	799.21250
	State License	109-112	769.68750	799.68750
	State License	233-236	770.46250	800.46250
	State License	305-308	770.91250	800.91250
	State License	653-656	773.08750	803.08750

Tuscarawas	General Use	41-44	769.26250	799.26250
	General Use	137-140	769.86250	799.86250
	General Use	353-356	771.21250	801.21250
	General Use	417-420	771.61250	801.61250
	General Use	457-460	771.86250	801.86250
	General Use	553-556	772.46250	802.46250
	General Use	789-792	773.93750	803.93750
	General Use	869-872	774.43750	804.43750
	General Use	909-912	774.68750	804.68750
	State License	773-776	773.83750	803.83750
	State License	845-848	774.28750	804.28750
	State License	885-888	774.53750	804.53750
Union	General Use	209-212	770.31250	800.31250
	General Use	249-252	770.56250	800.56250
	General Use	449-452	771.81250	801.81250
	General Use	561-564	772.51250	802.51250
	General Use	609-612	772.81250	802.81250
	General Use	869-872	774.43750	804.43750
	State License	853-856	774.33750	804.33750
	State License	893-896	774.58750	804.58750
Van Wert	General Use	349-352	771.18750	801.18750
	General Use	389-392	771.43750	801.43750
	General Use	429-432	771.68750	801.68750
	General Use	509-512	772.18750	802.18750
	General Use	717-720	773.48750	803.48750
	General Use	757-760	773.73750	803.73750
	State License	69-72	769.43750	799.43750
	State License	273-276	770.71250	800.71250
Vinton	General Use	81-84	769.51250	799.51250
	General Use	365-368	771.28750	801.28750
	General Use	413-416	771.58750	801.58750
	General Use	581-584	772.63750	802.63750
	General Use	629-632	772.93750	802.93750
	State License	309-312	770.93750	800.93750
Warren	General Use	57-60	769.36250	799.36250
	General Use	121-124	769.76250	799.76250
	General Use	417-420	771.61250	801.61250
	General Use	469-472	771.93750	801.93750
	General Use	517-520	772.23750	802.23750
	General Use	593-596	772.71250	802.71250
	General Use	637-640	772.98750	802.98750
	General Use	781-784	773.88750	803.88750
	General Use	917-920	774.73750	804.73750

	State License	65-68	769.41250	799.41250
	State License	273-276	770.71250	800.71250
	State License	725-728	773.53750	803.53750
Washington	General Use	17-20	769.11250	799.11250
	General Use	97-100	769.61250	799.61250
	General Use	201-204	770.26250	800.26250
	General Use	369-372	771.31250	801.31250
	General Use	409-412	771.56250	801.56250
	General Use	457-460	771.86250	801.86250
	General Use	525-528	772.28750	802.28750
	General Use	621-624	772.88750	802.88750
	General Use	661-664	773.13750	803.13750
	General Use	701-704	773.38750	803.38750
	General Use	757-760	773.73750	803.73750
	General Use	869-872	774.43750	804.43750
	State License	33-36	769.21250	799.21250
	State License	113-116	769.71250	799.71250
	State License	233-236	770.46250	800.46250
	State License	925-928	774.78750	804.78750
Wayne	General Use	85-88	769.53750	799.53750
	General Use	385-388	771.41250	801.41250
	General Use	425-428	771.66250	801.66250
	General Use	469-472	771.93750	801.93750
	General Use	521-524	772.26250	802.26250
	General Use	573-576	772.58750	802.58750
	General Use	617-620	772.86250	802.86250
	General Use	829-832	774.18750	804.18750
	State License	273-276	770.71250	800.71250
	State License	689-692	773.31250	803.31250
Williams	General Use	57-60	769.36250	799.36250
	General Use	281-284	770.76250	800.76250
	General Use	409-412	771.56250	801.56250
	General Use	481-484	772.01250	802.01250
	General Use	533-536	772.33750	802.33750
	General Use	597-600	772.73750	802.73750
	General Use	701-704	773.38750	803.38750
	State License	153-156	769.96250	799.96250
	State License	269-272	770.68750	800.68750
Wood	General Use	49-52	769.31250	799.31250
	General Use	213-216	770.33750	800.33750
	General Use	297-300	770.86250	800.86250
	General Use	353-356	771.21250	801.21250
	General Use	425-428	771.66250	801.66250

	General Use	477-480	771.98750	801.98750
	General Use	537-540	772.36250	802.36250
	General Use	589-592	772.68750	802.68750
	General Use	637-640	772.98750	802.98750
	General Use	677-680	773.23750	803.23750
	General Use	753-756	773.71250	803.71250
	General Use	797-800	773.98750	803.98750
	General Use	865-868	774.41250	804.41250
	General Use	909-912	774.68750	804.68750
	State License	65-68	769.41250	799.41250
	State License	265-268	770.66250	800.66250
	State License	773-776	773.83750	803.83750
	State License	813-816	774.08750	804.08750
Wyandot	General Use	53-56	769.33750	799.33750
	General Use	349-352	771.18750	801.18750
	General Use	409-412	771.56250	801.56250
	General Use	453-456	771.83750	801.83750
	General Use	605-608	772.78750	802.78750
	General Use	741-744	773.63750	803.63750
	General Use	829-832	774.18750	804.18750
	General Use	913-916	774.71250	804.71250
	State License	269-272	770.68750	800.68750

Appendix H - Sharing Agreement Template

(Agency letterhead of Licensee)

TO: (recipient person and title)
(recipient agency)

FROM: (authorizing person and title)
(authorizing agency)

DATE: (mm/dd/yyyy)

SUBJECT: Sharing Agreement

_____(grantor) authorizes _____(grantee) to operate _____(quantity) mobile (vehicular or hand-held) radios. Such operation shall be per the following parameters.

Call Sign	Frequency(ies)	Max. Power[48]	Channel(s) Included
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

(Use additional attachments as necessary for more frequencies/channels)

This written agreement applies to operations in cooperation and coordination with activities of the licensee per Region 33 Plan, FCC Rules 47 CFR Parts 2.102(c), 2.103 and 90 Subpart R. Furthermore, grantor reserves the right to effectively eliminate the possibility of unauthorized operation, which ultimately could result in terminating this written agreement.

_____ (typed or printed name of authorized signer)
_____ (authorized signer identified above)
_____ (date)
_____ (agency name)
_____ (agency address)
_____ (agency address)
_____ (agency address)
_____ (signer's phone)
_____ (signer's email address, if available)

[48] Unless indicated otherwise, all power levels shall conform with 47 CFR §90.541 or other applicable rules of the Commission

Appendix I - Digital Television Transition

Frequency Availability through the DTV Transition

On August 14, 1996, the FCC released a *Sixth Further Notice of Proposed Rule Making* in the digital television (DTV) proceeding. A portion of the spectrum recovered from TV channels 60-69 when DTV is fully deployed "could be used to meet public safety needs."[49] By Congressional direction in the Balanced Budget Act of 1997, the FCC reallocated 24 MHz of spectrum to Public Safety services in the 764-776 MHz and 794-806 MHz bands. The statute required the FCC to establish service rules, by September 30, 1998, in order to start the process of assigning licenses. The rules that the FCC established by September 30, 1998, "provided the minimum technical framework necessary to standardize operations in this spectrum band, including, but not limited to: (a) establishing interference limits at the boundaries of the spectrum block and service areas; (b) establishing technical restrictions necessary to protect full-service analog and digital television service during the transition to digital television services; (c) permitting public safety licensees the flexibility to aggregate multiple licenses to create larger spectrum blocks and service areas, and to disaggregate or partition licenses to create smaller spectrum blocks or service areas; and (d) ensuring that the new spectrum will not be subject to harmful interference from television broadcast licensees" [50].

In April 1997, the FCC assigned a second 6 MHz block of spectrum to each license (or permit to construct) holders of full power, analog, television broadcast station (NTSC) in order to construct a digital television station (DTV). Secondary low power television stations (LPTV), secondary translators and boosters (TX), mutually exclusive applications for new stations, and application filed after a cut-off date did not receive a second 6 MHz allotment for DTV. The FCC established about a 10 year timeline for those stations with a DTV assignment to construct a DTV station, cease NTSC transmissions, and return one of the two 6 MHz blocks of spectrum to the FCC. Target date for the end of analog television (NTSC) transmission was set for December 31, 2006.

Congress provided several market penetration loopholes (>85% households served, all 4 major networks converted, etc) allowing NTSC operations to continue past the December 31, 2006 date. While there are over 100 NTSC full power stations in this band, there are also about 12 DTV assignments. The DTV assignments might continue operations past the December 31, 2006 date for two reasons. 1) They must find a suitable channel below channel 60 to move to, which may be their own NTSC assignment. They may not be able to find another allocation

---

[49] Advanced Television Systems and Their Impact Upon the Existing Television Broadcast Service, MM Docket No. 87-268, *Sixth Further Notice of Proposed Rule Making*, 11 FCC Rcd 10,968, 10,980 (1996) (*DTV Sixth Notice*).

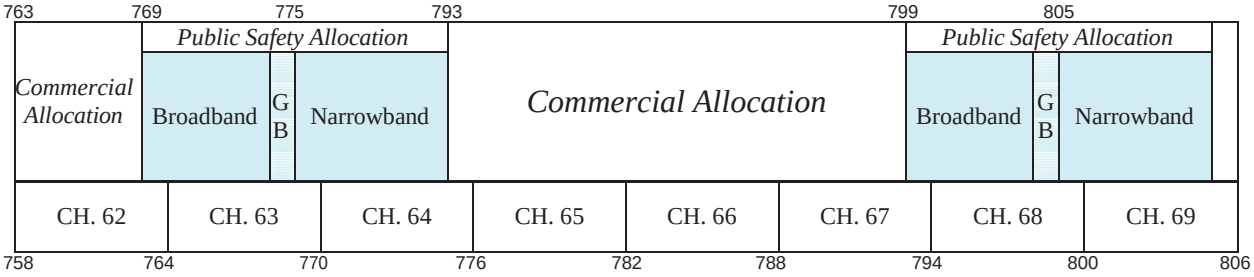
[50] FCC 98-191, 1st R&O and 3rd NPRM on WT Docket No. 96-86 Operational & Technical Requirements or the 700 MHz Public Safety Band, para.4.

until other NTSC stations have ceased operations and returned a channel below 60 to the FCC. Or, 2) their license does not expire until after 2006 (most are licensed into 2007 or 2008).

Subsequent Legislative and Commission Actions

The United States Congress passed Deficit Reduction Act of 2005 and Title III, the Digital Television Transition and Public Safety Act. This legislation established February 17, 2009 as the last day in which full power broadcasters could use the television channels 60-69. On July 31, 2007, the Commission adopted the Second Report and Order[51] which revised the band plan under which this Plan will operate.

The revised public safety band plan as adopted by the Commission and incorporated into the rules as a revision to 47 CFR §90.531. As part of the revised band plan, all former "wideband" data channels were reallocated to for use through a single nationwide public safety broadband licensee[52].



Protection of Public Safety from future TV/DTV Stations

Public safety base, control, and mobile transmitters in the 769-775 MHz and 799-805 MHz frequency bands must be operated only in accordance with the rules in this section, to reduce the potential for interference to public reception of the signals of existing TV and DTV broadcast stations transmitting on TV Channels 62, 63, 64, 65, 67, 68 or 69.

(a) *D/U ratios.* Licensees of public safety stations must choose site locations that are a sufficient distance from co-channel and adjacent channel TV and DTV stations, and/or must use reduced transmitting power or transmitting antenna height such that the following minimum desired signal to undesired signal ratios (D/U ratios) are met:

(1) The minimum D/U ratio for co-channel stations is 40 dB at the hypothetical Grade B contour (64 dBμV/m) (88.5 kilometers or 55.0 miles) of the TV station or 17 dB at the equivalent Grade B contour (41 dBμV/m) (88.5 kilometers or 55.0 miles) of the DTV station.

[51] *See* FCC 07-132
[52] See 47 CFR §90.523(e)

(2) The minimum D/U ratio for adjacent channel stations is 0 dB at the hypothetical Grade B contour (64 dBμV/m) (88.5 kilometers or 55.0 miles) of the TV station or ¥23 dB at the equivalent Grade B contour (41 dBμV/m) (88.5 kilometers or 55.0 miles) of the DTV station.

(b) *Maximum ERP and HAAT.* The maximum effective radiated power (ERP) and the antenna height above average terrain (HAAT) of the proposed land mobile base station, the associated control station, and the mobile transmitters shall be determined using the methods described in this section.

(1) Each base station is limited to a maximum ERP of 1000 watts.

(2) Each control station is limited to a maximum ERP of 200 watts and a maximum HAAT of 61 m. (200 ft).

(3) Each mobile station is limited to a maximum ERP of 30 watts and a maximum antenna height of 6.1 m. (20 ft.).

(4) Each portable (handheld) transmitter is limited to a maximum ERP of 3 watts.

(5) All transmitters are subject to the power reductions given in Figure B of § 90.309 of this chapter, for antenna heights higher than 152 meters (500 ft).

(c) *Methods.* The methods used to calculate TV contours and antenna heights above average terrain are given in §§ 73.683 and 73.684 of this chapter. Tables to determine the necessary minimum distance from the public safety station to the TV/DTV station, assuming that the TV/DTV station has a hypothetical or equivalent Grade B contour of 88.5 kilometers (55.0 miles), are located in § 90.309 and labeled as Tables B, D, and E. Values between those given in the tables may be determined by linear interpolation. The locations of existing and proposed TV/DTV stations during the transition period are given in Part 73 of this chapter and in the final proceedings of MM Docket No. 87–268. The DTV allotments are:

State	City	NTSC TV Ch.	DTV Ch.	ERP (kW)	HAAT (m)
California	Stockton	64	62	63.5	874
California	Los Angeles	11	65	688.7	896
California	Riverside	62	68	180.1	723
California	Concord	42	63	61.0	856
Pennsylvania	Allentown	39	62	50.0	302
Pennsylvania	Philadelphia	6	64	1000.0	332
Pennsylvania	Philadelphia	10	67	791.8	354
Puerto Rico	Aguada	50	62	50.0	343
Puerto Rico	Mayaguez	16	63	50.0	347
Puerto Rico	Naranjito	64	65	50.0	142

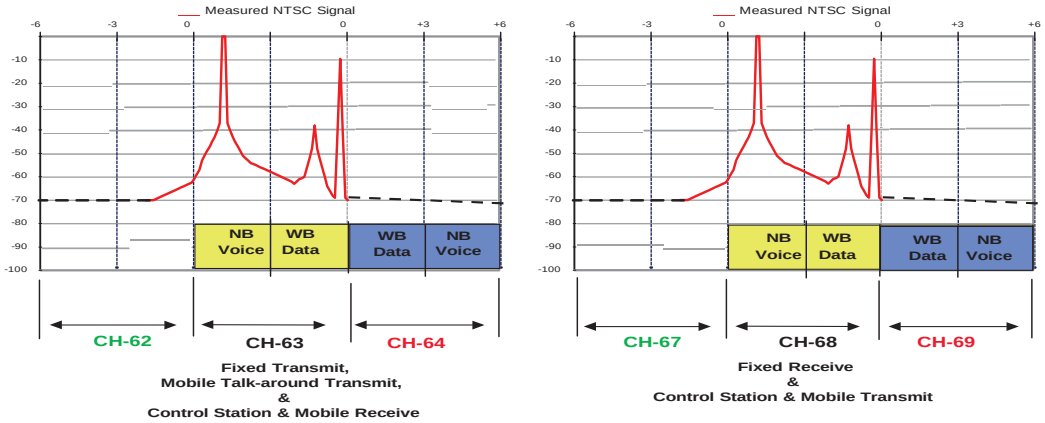
TV/DTV Protection

Until February 17, 2009, public safety must consider all co-channel and adjacent channel TV and DTV stations within about a 160 mile radius.

For public safety channel pair 63/68, public safety must consider six TV/DTV channels - co-channels 63 and 68, as well as, adjacent channels 62, 64, 67, and 69.

The diagrams below have not been amended to reflect the band plan established by the Commission in the Second Report and Order. Region 33 will not approve any applications for 700 MHz frequencies unless the applicant agrees to a limitation that restricts use until February 18, 2009.

Measured (off-the-air) Analog TV Signal
vs
700 MHz Public Safety Assignments

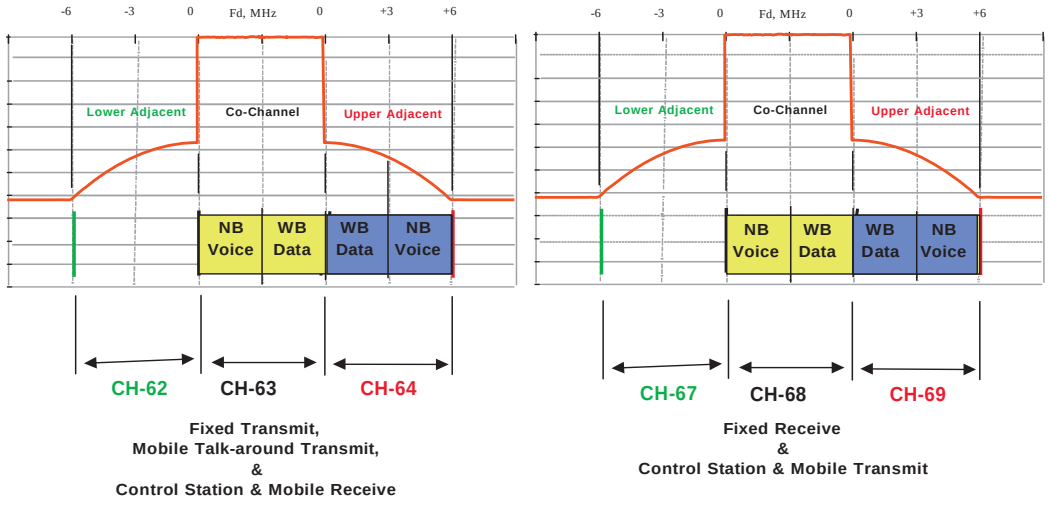


Fixed Transmit,
Mobile Talk-around Transmit,
&
Control Station & Mobile Receive

Fixed Receive
&
Control Station & Mobile Transmit

HAVE 2 CO-CHANNEL AND 4 ADJACENT CHANNELS
TO CONSIDER FOR EACH 700 MHz PAIRED BLOCKS OF SPECTRUM

DTV Emission Mask
vs
700 MHz Public Safety Assignments



HAVE 2 CO-CHANNEL AND 4 ADJACENT CHANNELS
TO CONSIDER FOR EACH 700 MHz PAIRED BLOCKS OF SPECTRUM

TV/DTV Protection Criteria

Until February 17, 2009, public safety applicants can select one of three ways to meet the TV/DTV protection requirements:

(1) Utilize the geographic separation specified in the 40 dB Tables of 90.309;
(2) Submit an engineering study to justify other separations which the Commission approves; or
(3) Obtain concurrence from the applicable TV/DTV station(s).

§90.309 40 dB D/U Tables

The FCC adopted a 40 dB desired (TV/DTV) to undesired (LMR) signal ratio for co-channel operations and a 0 dB desired/undesired (D/U) signal ratio for adjacent channel operations. The D/U ratio is used to determine the geographic separation needed between public safety base stations and the Grade B service contours of co-channel and adjacent channel TV/DTV stations.[53] The D/U signal ratio is used to determine the level of land mobile signals that can be permitted at protected fringe area TV receiver locations without degrading the TV picture to less than a defined picture quality. In other words, the D/U signal ratio indicates what relative levels of TV and land mobile signals can be tolerated without causing excessive interference to TV reception at the fringe of the TV service area.

[53] *See Second Notice*, 12 FCC Rcd 17,803.

Desired and undesired contours are not quite the same thing. Desired analog TV contours are defined as F (50,50), meaning coverage is 50% of the places and 50% of the time. Undesired land mobile or interference contours are defined as F (50,10). For Digital TV, the desired contours are defined as F(50,90), while the undesired land mobile contour are still F(50,10).

Land mobile and analog TV services have successfully shared the 470-512 MHz band (TV Channels 14-20) within a 50 mile radius of eleven major cities since the early 1970's based upon providing a signal ratio of at least 50 dB[54] between the desired TV signal and undesired co-channel land mobile signal (D/U signal ratio) at a hypothetical 88.5 km (55 mi) Grade B service contour and an adjacent channel D/U signal ratio of 0 dB at the same hypothetical Grade B service contour. These separation distances also protected the land mobile systems from interference from the TV stations. In 1985, recognizing that 50 dB D/U was too conservative, the FCC proposed to expand land mobile/TV sharing to other TV channels and proposed that the geographic separation requirements for co-channel operations be based on a D/U signal ratio of 40 dB rather than 50 dB.[55] That proceeding was put on hold pending completion of the DTV proceeding, which has now been completed. In the 470-512 MHz band, the FCC also relied on minimum separation distances based on the various heights and powers of the land mobile stations (HAAT/ERP separation tables) to prevent harmful interference.

Since this simple, yet conservative, method was successful, the FCC decided to use this same method, the 90.309 HAAT/ERP Separation Tables, to administer LMR to TV/DTV receiver protection criteria for the services in the 700 MHz band.

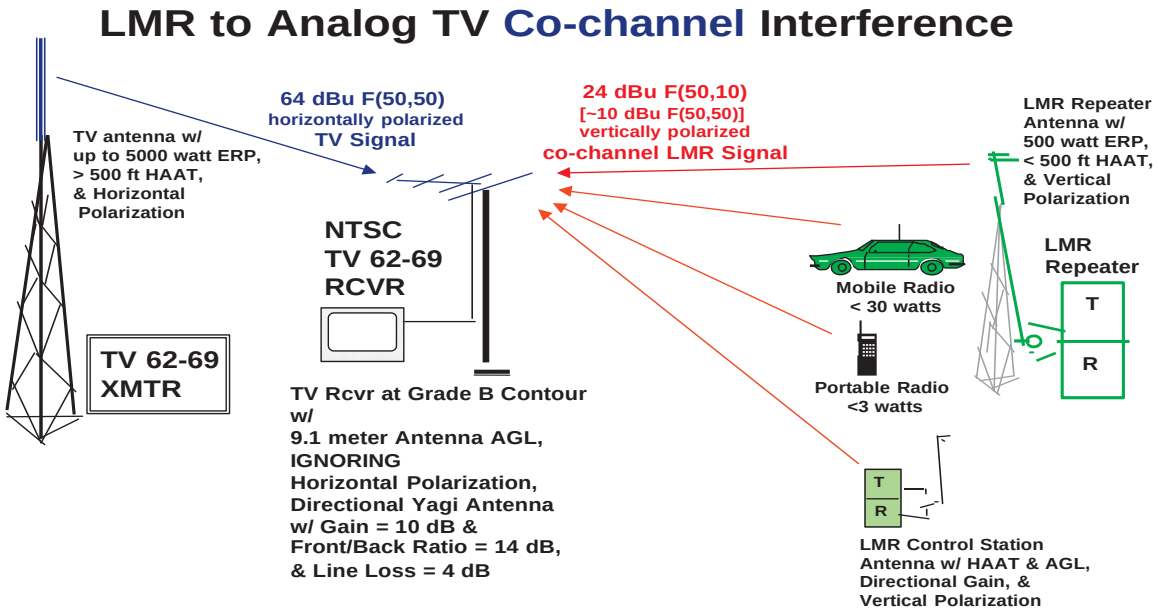
Co-channel land mobile base station transmitters are limited to a maximum signal strength at the hypothetical TV Grade B contour 40 dB D/U below desired 64 dBu F(50,50) analog TV signal level, or 24 dBu F(50,10).[56] The FCC adopted a 0 dB D/U signal ratio for adjacent channel operations. Adjacent channel land mobile transmitters will be limited to a maximum signal of 64 dBu F(50,10) which is 0 dB D/U below the TV Grade B signal of 64 dBu F(50,50) at the TV station Grade B contour of 88.5 km (55 miles). A typical TV receiver's adjacent channel rejection is at least 10-20 dB greater than this level which will further safeguards TV receivers from land mobile interference.

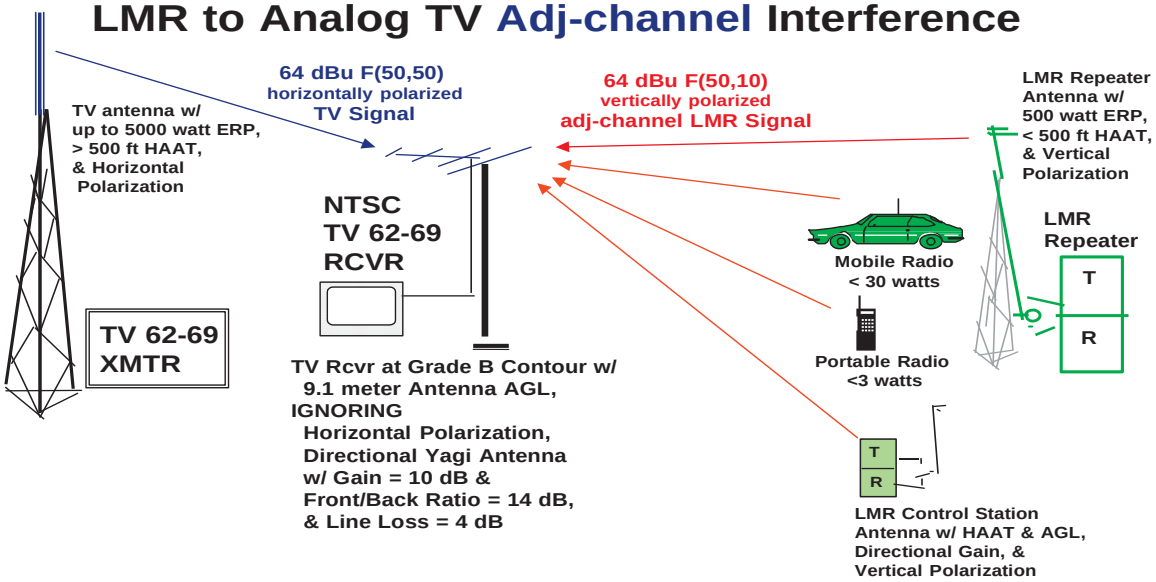
---

[54] For TV Channel 15 in New York City, a 40 dB D/U signal ratio is used. *See* 47 C.F.R. §§ 90.307(b) and 90.309 (Table B). A 50 dB protection ratio means that the amplitude of the desired TV signal is more than 300 times greater than the amplitude of the undesired signal at the Grade B service contour. A 40 dB protection ratio means the desired TV signal is 100 times greater.

[55] *See* Amendment of the Rules Concerning Further Sharing of the UHF Television Band by Private Land Mobile Radio Services, GEN Docket No. 85-172, *Notice of Proposed Rulemaking*, 101 FCC 2d 852, 861 (1985) (*UHF-TV Sharing NPRM*).

[56] In terms of miles, if everything else is the same, a 40 dB D/U ratio rather than a 50 dB D/U ratio allows base stations to be located approximately 48.3 km (30 mi) closer to a co-channel TV station. *See* 47 C.F.R. § 90.309, Tables A & B.





The equivalent ratios for a DTV station's 41 dB F(50,90) desired field strength contour are land mobile 17 dB F(50,10) contour for co-channel and land mobile - 23 dB F(50,10) contour for adjacent channel.

The tables to protect TV/DTV stations are found in Section 90.309 of the Commission's rules. These existing Tables cover co-channel protection based on a 40 dB D/U ratio using the separation methods described in Section 73.611 of the Commission's rules for base, control, and mobile stations, and for adjacent channel stations for base stations based on a 0 dB D/U ratio.

However, the original considerations in 470-512 MHz band under Section 90.309 were different in that mobiles were limited in their roaming distance from the base station (less than 30 miles) and mobiles were on the same TV channel as the base station.

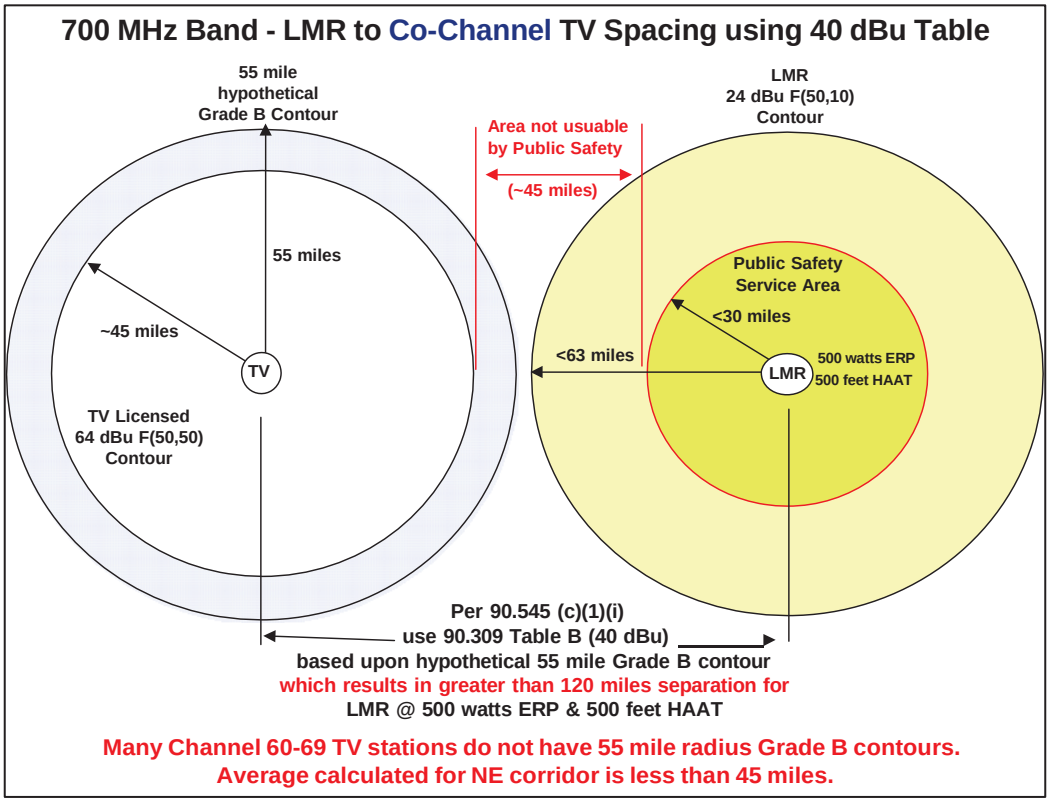
Control and mobile stations (including portables) are limited in height (200 ft for control stations, 20 ft for mobiles/portables) and power (200 watts ERP for control stations, 30 watts for mobiles, 3 watts for portables). Mobiles and control stations shall afford protection to co-channel and adjacent channel TV/DTV stations in accordance with the values specified in Table D (co-channel frequencies based on 40 dB protection for TV and 17 dB for DTV) in § 90.309.

Control stations and mobiles/portables shall keep a minimum distance of 8 kilometers (5 miles) from all adjacent channel TV/DTV station hypothetical or equivalent Grade B contours (adjacent channel frequencies based on 0 dB protection for TV and -23 dB for DTV). This means that control and mobile stations shall keep a minimum distance of 96.5 kilometers (60 miles) from all adjacent channel TV/DTV stations.

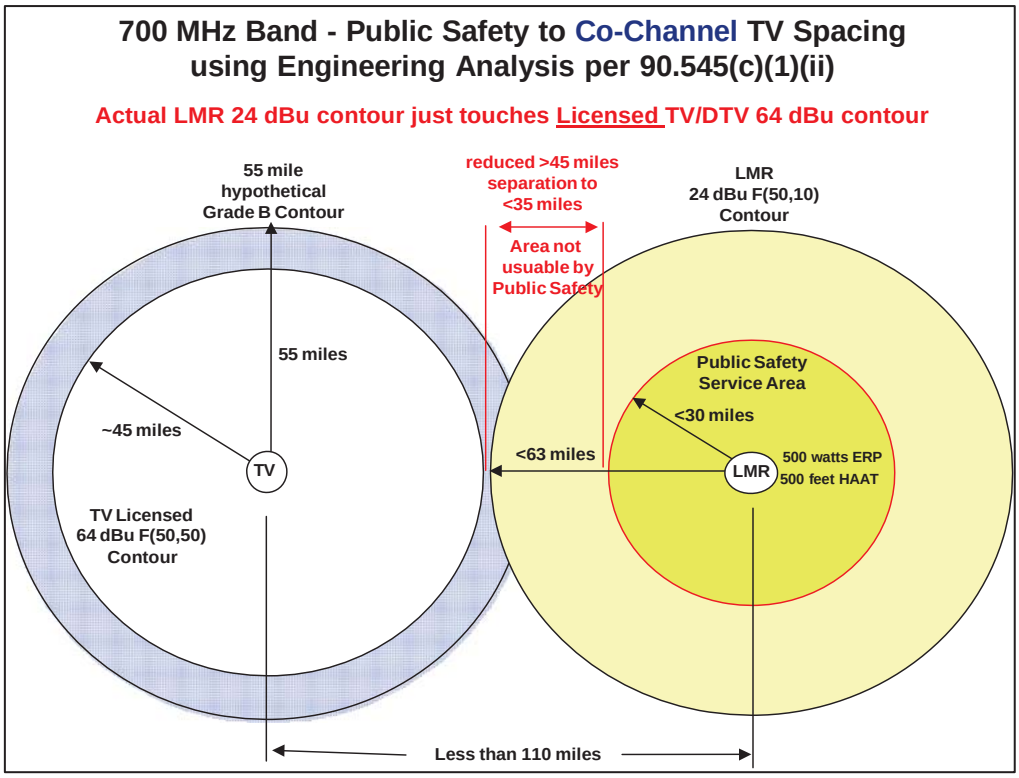
Since operators of mobiles and portables are able to move and communicate with each other, licensees or coordinators must determine the areas where the mobiles can and cannot roam in order to protect the TV/DTV stations, and advise the mobile operators of these areas and their restrictions.

Engineering Analysis

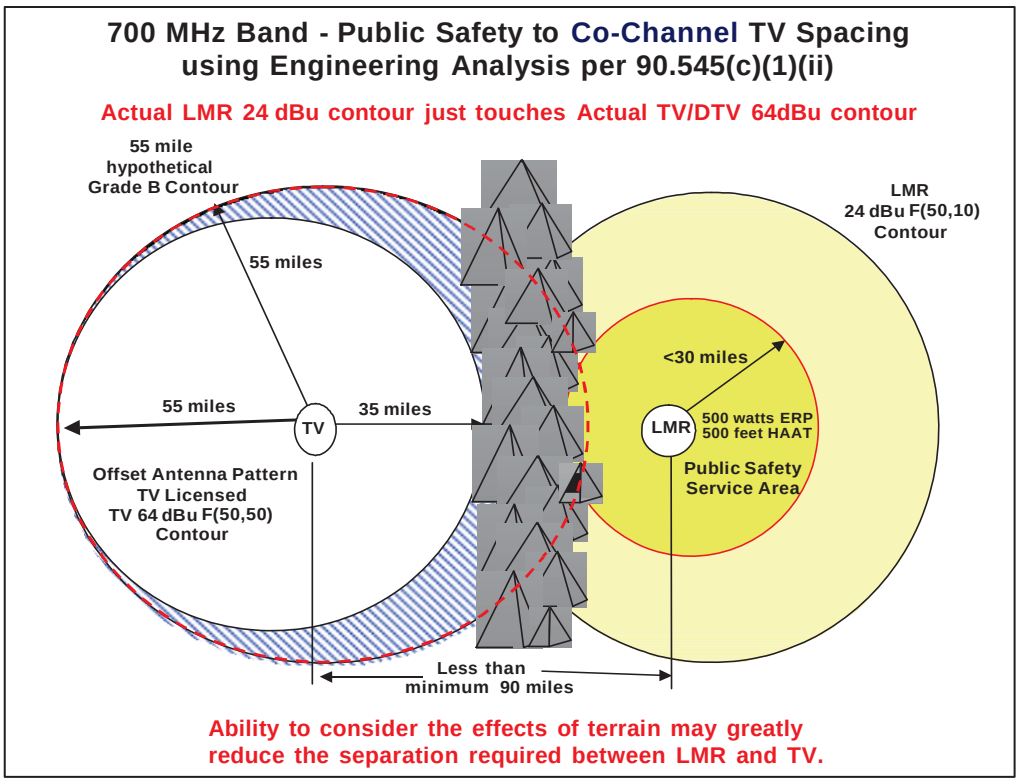
Limiting TV/land mobile separation to distances specified in the 40 dB HAAT/ERP Separation Tables found in 90.309 may prevent public safety entities from fully utilizing this spectrum in a number of major metropolitan areas until after the DTV transition period ends. Public safety applicants will be allowed to submit engineering studies showing how they propose to meet the appropriate D/U signal ratio at the existing TV station's authorized or applied for Grade B service contour or equivalent contour for DTV stations instead of the hypothetical contour at 88.5 km.



This would permit public safety applicants to take into account intervening terrain and engineering techniques such as directional and down-tilt antennas in determining the necessary separation to provide the required protection. Public safety applicants who use the engineering techniques must consider the actual TV/DTV parameters and not base their study on the 88.5 km hypothetical or equivalent Grade B contour. If land mobile interference contour does not overlap the TV Grade B contour (or DTV equivalent), then engineering analysis may be submitted to the FCC with the application.



This method is most useful with lower power TV stations whose Grade B contours are much smaller than the hypothetical 55 mile (88.5 km) Grade B contour or have directional patterns. Note that 200 ft AGL limitations on 700 MHz control stations is much higher than the 100 ft



AGL limitation used at UHF. Limiting control station antenna height and/or ERP may greatly reduce land mobile to TV contour spacing.

Also, note that analysis for TV/DTV receivers uses 30 ft (10 m) antenna height whereas, analysis for land mobile subscribers uses about a 6 ft (2m) antenna height.

TV/DTV Short-spacing

Until February 17, 2009, public safety applicants will also be allowed to "short-space" even closer if they get the (written) approval of the TV stations they are required to protect. Public safety applicants need to determine the station's intended market area vs its hypothetical Grade B contour area. Alternately, the TV/DTV station may be short-spaced against another TV/DTV station, limiting their area of operation, but does not affect LMR operations.

Instead of each agency negotiating with a TV/DTV station individually, they may want to combine into a single group or committee and negotiate together.

TV/DTV Height Adjustment Factor

In order to protect certain TV/DTV stations which have extremely large contours due to unusual height situations, such as a television station mounted on top of Mount Wilson near Los Angeles, California, the FCC incorporated an additional height adjustment factor which must be used by all public safety base, control and mobile stations to protect these few TV/DTV stations and afford the land mobile stations the necessary protection from the TV/DTV stations. The equation necessary to calculate the additional distance from the hypothetical or equivalent Grade B contour is found in the rules section 90.545(c)(2)(iii).

CANADIAN AND MEXICAN BORDER REGIONS

The FCC typically takes one of two approaches. They either postpone licensing of land mobile stations within a certain geographic distance (*e.g.*, 120 km (75 miles)) of Canada and Mexico, or permit interim authorizations conditioned on the outcome of future agreements. Because international negotiations can take many months or even years to finalize, the FCC took the later approach and adopted certain interim requirements for public safety licenses along the Canada and Mexico borders, providing that the licenses are subject to whatever future agreements the United States develops with the two countries.

Nevertheless, existing mutual agreements with Canada and Mexico for the use of these bands for UHF television must be recognized until further negotiations are completed. The US negotiated an agreement with Mexico of DTV operations near the US/Mexican border in July 1998. The US just negotiated an agreement with Mexico of DTV operations, and limited non-broadcast operations on 746-806 MHz, near the US/Canadian border in September 2000. Existing agreements recognize existing TV and/or DTV allotments and planning factors within a specified distance of the border. The Canadian Letter of Understanding also acknowledges that US plans

to use 746-806 MHz for non-broadcast purposes and provides planning criteria (40 dB D/U) to protect Canadian TV/DTV receivers.

Additionally, public safety facilities within the United States must accept interference from authorized channel 60-69 TV transmitters in Canada and Mexico in accordance with the existing agreements. Since the locations of the Canadian and Mexican analog TV assignments and DTV allotments are known, the public safety applicants can consider the levels of harmful interference to expect from Canadian and Mexican TV/DTV stations when applying for a license. Both Canada and Mexico have been informally notified that the Commission has changed its allocated use of TV channels 60-69, and the Commission will discuss the possibility of mutually compatible spectrum use with Canada and Mexico.

Appendix J - Table of Interoperability Channels

FREQ / FCC CHANNEL (SUBSCRIBER LOAD)		BASE, MOBILE, OR FIXED	ELIGIBILITY / PRIMARY USE	ORIGINAL NCC	TASK GROUP CONSENSUS
RECEIVE	TRANSMIT			NAME	NAME
CHANNEL	CHANNEL	FCC 700 MHz Public Safety Band (TV 63 + 68)			
39-40	999-1000	Mobile-Fixed	Calling Channel	7CAL59	**7CALL50**
	SIMPLEX	Base-Fixed-Mobile			**7CALL50D**
23-24	983-984	Mobile-Fixed	*General Public Safety Service (secondary trunked)*	7TAC58	**7TAC51**
	SIMPLEX	Base-Fixed-Mobile			**7TAC51D**
103-104	1063-1064	Mobile-Fixed	*General Public Safety Service (secondary trunked)*	7TAC62	**7TAC52**
	SIMPLEX	Base-Fixed-Mobile			**7TAC52D**
183-184	1143-1144	Mobile-Fixed	*General Public Safety Service (secondary trunked)*	7TAC66	**7TAC53**
	SIMPLEX	Base-Fixed-Mobile			**7TAC53D**
263-264	1223-1224	Mobile-Fixed	*General Public Safety Service (secondary trunked)*	7TAC70	**7TAC54**
	SIMPLEX	Base-Fixed-Mobile			**7TAC54D**
119-120	1079-1080	Mobile-Fixed	General Public Safety Service	7TAC63	**7TAC55**
	SIMPLEX	Base-Fixed-Mobile			**7TAC55D**
199-200	1159-1160	Mobile-Fixed	General Public Safety Service	7TAC67	**7TAC56**
	SIMPLEX	Base-Fixed-Mobile			**7TAC56D**
319-320	1279-1280	Mobile-Fixed	Other Public Service	7TAC73	**7GTAC57**
	SIMPLEX	Base-Fixed-Mobile			**7GTAC57D**
303-304	1263-1264	Mobile-Fixed	Mobile Repeater	7MOB72	**7MOB59**
	SIMPLEX	Base-Fixed-Mobile			**7MOB59D**
223-224	1183-1184	Mobile-Fixed	Law Enforcement	7LAW68	**7LAW61**
	SIMPLEX	Base-Fixed-Mobile			**7LAW61D**
239-240	1199-1200	Mobile-Fixed	Law Enforcement	7LAW69	**7LAW62**
	SIMPLEX	Base-Fixed-Mobile			**7LAW62D**
143-144	1103-1104	Mobile-Fixed	Fire	7FIR64	**7FIRE63**
	SIMPLEX	Base-Fixed-Mobile			**7FIRE63D**
159-160	1119-1120	Mobile-Fixed	Fire	7FIR65	**7FIRE64**
	SIMPLEX	Base-Fixed-Mobile			**7FIRE64D**
63-64	1023-1024	Mobile-Fixed	EMS	7MED60	**7MED65**
	SIMPLEX	Base-Fixed-Mobile			**7MED65D**
79-80	1039-1040	Mobile-Fixed	EMS	7EMS61	**7MED66**
	SIMPLEX	Base-Fixed-Mobile			**7MED66D**
279-280	1239-1240	Mobile-Fixed	Mobile Data	7DAT71	**7DATA69**
	SIMPLEX	Base-Fixed-Mobile			**7DATA69D**

FREQ / FCC CHANNEL (SUBSCRIBER LOAD)		BASE, MOBILE, OR FIXED	ELIGIBILITY / PRIMARY USE	ORIGINAL NCC	TASK GROUP CONSENSUS
RECEIVE	TRANSMIT	OR CONTROL)		NAME	NAME
CHANNEL	CHANNEL	FCC 700 MHz Public Safety Band (TV 64 + 69)			
681-682	1641-1642	Mobile-Fixed	Calling Channel	7CAL75	**7CALL70**
	SIMPLEX	Base-Fixed-Mobile			**7CALL70D**
657-658	1617-1618	Mobile-Fixed	*General Public Safety Service (secondary trunked)*	7TAC74	**7TAC71**
	SIMPLEX	Base-Fixed-Mobile			**7TAC71D**
737-738	1697-1698	Mobile-Fixed	*General Public Safety Service (secondary trunked)*	7TAC78	**7TAC72**
	SIMPLEX	Base-Fixed-Mobile			**7TAC72D**
817-818	1777-1778	Mobile-Fixed	*General Public Safety Service (secondary trunked)*	7TAC82	**7TAC73**
	SIMPLEX	Base-Fixed-Mobile			**7TAC73D**
897-898	1857-1858	Mobile-Fixed	*General Public Safety Service (secondary trunked)*	7TAC86	**7TAC74**
	SIMPLEX	Base-Fixed-Mobile			**7TAC74D**
761-762	1721-1722	Mobile-Fixed	General Public Safety Service	7TAC79	**7TAC75**
	SIMPLEX	Base-Fixed-Mobile			**7TAC75D**
841-842	1801-1802	Mobile-Fixed	General Public Safety Service	7TAC83	**7TAC76**
	SIMPLEX	Base-Fixed-Mobile			**7TAC76D**
937-938	1897-1898	Mobile-Fixed	Other Public Service	7TAC89	**7GTAC77**
	SIMPLEX	Base-Fixed-Mobile			**7GTAC77D**
881-882	1841-1842	Mobile-Fixed	Mobile Repeater	7MOB88	**7MOB79**
	SIMPLEX	Base-Fixed-Mobile			**7MOB79D**
801-802	1761-1762	Mobile-Fixed	Law Enforcement	7LAW84	**7LAW81**
	SIMPLEX	Base-Fixed-Mobile			**7LAW81D**
857-858	1817-1818	Mobile-Fixed	Law Enforcement	7LAW85	**7LAW82**
	SIMPLEX	Base-Fixed-Mobile			**7LAW82D**
721-722	1681-1682	Mobile-Fixed	Fire	7FIR80	**7FIRE83**
	SIMPLEX	Base-Fixed-Mobile			**7FIRE83D**
777-778	1737-1738	Mobile-Fixed	Fire	7FIR81	**7FIRE84**
	SIMPLEX	Base-Fixed-Mobile			**7FIRE84D**
641-642	1601-1602	Mobile-Fixed	EMS	7EMS76	**7MED86**
	SIMPLEX	Base-Fixed-Mobile			**7MED86D**
697-698	1657-1658	Mobile-Fixed	EMS	7EMS77	**7MED87**
	SIMPLEX	Base-Fixed-Mobile			**7MED87D**
921-922	1881-1882	Mobile-Fixed	Mobile Data	7DAT87	**7DATA89**
	SIMPLEX	Base-Fixed-Mobile			**7DATA89D**

INTEROPERABILITY CHANNEL TECHNICAL PARAMETERS

ANSI/TIA/EIA-102 (Project 25) Common Air Interface

Certain common Project 25 parameters need to be defined to ensure digital radios operating on the 700 MHz Interoperability Channels can communicate. This is analogous to defining the common CTCSS tone used on NPSPAC analog Interoperability channels.

Network Access Code

In the Project 25 Common Air Interface definition, the Network Access Code is analogous to the use of CTCSS and CDCSS signals in analog radio systems. It is a code transmitted in the preamble of the Project 25 signal and repeated periodically throughout the transmission. Its purpose is to provide selective access to and maintain access to a receiver. It is also used to block nuisance and other co-channel signals. There are up to 4096 of these NAC codes. For ease of migration in other frequency bands, a NAC code table was developed which shows a mapping of CTCSS and CDCSS signals into corresponding NAC codes. Document TIA/EIA TSB102.BAAC contains NAC code table and other Project 25 Common Air Interface Reserve Values. Recommendation: Since NPSPAC Interoperability Channels use CTCSS tone 156.7 Hz (5A), use of corresponding NAC code $61F is recommended for the 700 MHz Interoperability Channel NAC code.

Talkgroup ID

In the Project 25 Common Air Interface definition, the Talkgroup ID on conventional channels is analogous to the use of talkgroups in trunking. In order to ensure that all users can communicate, all units should use the default Talkgroup ID of $0001.

Manufacturer's ID

The Project 25 Common Air Interface allows the ability to define manufacturer specific functions. In order to ensure that all users can communicate, all units should not use a specific Manufacturer's ID, but should use the default Manufacturer’s ID of $00.

Message ID

The Project 25 Common Air Interface allows the ability to define specific message functions. In order to ensure that all users can communicate, all units should use the default Message ID for unencrypted messages of $00000000000000000000.

Encryption Algorithm ID and Key ID

The Project 25 Common Air Interface allows the ability to define specific encryption algorithms and encryption keys. In order to ensure that all users can communicate, encryption is prohibited on the Interoperability Calling Channels; all units should use the default Algorithm ID for unencrypted messages of $80 and default Key ID for unencrypted messages of $0000. These same defaults may be used for the other Interoperability channels when encryption is not used. The FCC permits the use of encryption on all Interoperability channels except the two Calling Channels. Regional Planning Committees need to define appropriate Message ID, Encryption Algorithm ID, and Encryption Key ID to be used in the encrypted mode on Interoperability channels.

Appendix K - Evaluation Matrix Point System

Region 33 will use a point system to determine approval priority of competing applications within the region. The maximum total points that can be achieved is 1000. The applications receiving the highest point total will receive approval for the channels. Seven categories will be evaluated.

1. Service and Use (Maximum score 300 points)

Service	Points
Local	10
County	10
State	10
Federal	10

Use	Points
Criminal Justice/Law Enforcement	50
Fire/EMS	50
Special Emergency	40
Emergency Management	40
Forestry Conservation	30
Highway Maintenance	30
General Government	20
Maximum Total	300

Environmental protection will fall in the "Special Emergency" category and shall be considered for tasks that directly reduce contamination to the air, water or ground by chemicals or waste materials.

2. Interoperability 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 will not rate the application on the inclusion of interoperability channels, but on its proposed actual ability to communicate with different levels of government and services during a time of emergency.

Each applicant is encouraged to have direct mobile-to-mobile communications among these radio type functions; local, state and federal in the criminal justice, fire/EMS, special emergency, emergency management, forestry, highway maintenance and general government. All applicants will start with 100 points and points will be deducted based upon their lack of intersystem communications.

Ten (10) points will be deducted for each radio service type function in which the applicant lacks intersystem communication, if direct mobile-to-mobile does not exist.

Five (5) points for each radio service that the applicant lacks direct mobile-to-mobile communications.

3. Loading (Maximum score 150 points)

Those applicants who have demonstrated that they are part of cooperative, multi-agency, systems will be scored on a range from 0 to 150 points depending upon the extent of the cooperative system.

Mutli-agency trunked, fully loaded, system	101 – 150 points
Trunked system, fully loaded	76 – 100 points
Conventional system fully loaded/channel	0 – 75 points

Expansion of existing systems will be evaluated as to the aforementioned category they are in. Any system less than fully loaded will have its score multiplied by the proportion:

Total number of Subscriber units

Number of communications channels _____ x 100 = _____%

A fully loaded channel is a channel with 100 subscriber units using it. Control channels shall not be considered communications channels. Plans submitted to the RPC shall stipulate the number of communications and control channel(s).

4. Spectrally Efficiency Systems (Maximum score 100 points)

The applicant will be scored on the degree of spectrally efficient[57] technology employed. A trunked system operating with a voice or data rate of 4.8 kbps will be considered a spectrally efficient technology. All other non-trunked systems not meeting the standard of 4.8 kbps per channel will be considered less spectrally efficient.

Spectrum efficiency points

A.	Trunked with 4.8 kbps per channel	100 points
B.	Trunked with plan to achieve 4.8 kbps per channel[58]	75 points

[57] *See* 47 CFR §90.535(b)
[58] *See* 47 CFR §90.535(d)

C. Conventional digital with 4.8 kbps per channel 50 points

D. Conventional digital with plan to achieve 4.8 kbps per channel 25 points

5. System Implementation Factors (Maximum score 100 points)

This category scores the applicant on two factors, budgetary commitment and plan completeness. The degree of budgetary commitment is scored on a range from 0 to 50 points based on the RPC's evaluation of commitment demonstrated through documentation by the applicant and its funding source entity. A high degree of funding commitment will receive a higher score. Applicants will also be scored on the degree of plan completeness on a range from 0 to 50 points. Applicants must submit a timetable for the implementation of the system. Applicants should be aware of the requirements outlined in "Slow Growth Plan" portion of this plan and the FCC rules.

A. Multi phase project with funds committed to all phases 50 points

B. Multi phase project plan completed for all phases 50 points

Applicants with less than complete funding commitment and/or incomplete plans will have their point score reduced accordingly. Resolutions, legislation, or other such documentation from governing entities shall be submitted with applications to support financial commitment.

6. System Density (Maximum score 100 points)

Each applicant will be scored on the level of geographic efficiency, scoring will be based upon the ratio of subscriber units to the square mile area of coverage. Scores are based on the ratio multiplied by 100 points with the maximum not to exceed 100 points.

System density points

$$\frac{\text{Total number of subscriber units in the system}}{\text{Area in square miles}} \times 100 =$$

A high-end limit of 500 is established for the maximum square mile area.

7. Frequency Givebacks (Maximum score 150 points)

The applicant is scored on the number of channels given back. The greater given back the higher the score. Point consideration is also given to applicants that represent a recently established public safety service(s) system covering a wide area and multiple agencies.

It is inconsistent with the goals and objectives of the FCC and Region 33 to permit the direct reassignment of radio frequencies between agencies. All VHF and UHF frequencies are to be returned to the PW pool. They shall not be "farmed down" to other radio services within their political structure.

Giveback scoring

Number of frequencies relinquished _____x 10 = score

Applicants for new systems, where no existing frequencies are in use to be replaced, will be awarded 50 points.

All applications will be prioritized by the RPC. If the frequency allotment appendix to the Regional Plan needs to be updated, corrections will be made and sent to the FCC as well as adjacent regions for review and approval[59]. The applications will be sent to the PW coordinator requested by the applicant. Subsequent to coordination approval the FCC will grant the license(s) to the applicant.

The PW coordinators requested by the applicant shall be responsible for the frequency coordination of the application, which includes, system engineering, ERP, coverage, and compliance to FCC requirements of the system. The PW coordinators may desire to contact the region on an applicant to help clarify issues relative to the application(s).

The matrix has been prepared to enable consistent evaluation of plans and applications. Variations within the parameters of this plan and submitted applications and/or plans may require extensive evaluation. Therefore, it shall be responsibility of the RPC to evaluate each situation on its own merit.

8. Channel Loading

For the purpose of this Plan, two (2) channels in 769-775 MHz will be paired with the respective two (2) channels in 799-805 MHz and be classified as a 12.5 KHz "frequency resource" unless indicated otherwise. Each applicant for a trunked system shall certify that a minimum of 100 mobile for each frequency resource will be placed in service within five (5) years of the initial plan approval date. If that is not the case, then less than fully loaded frequency resources shall be returned to the allotment pool and the licensee shall modify their license accordingly. Conventional loading shall be 100 mobile units per frequency resource. Where an applicant does not channel loading requirements, the channels will be available for assignment to other licensees. Mobile, portable and control stations will be considered as mobile units.

[59] *See* 47 CFR §90.527(b)

Appendix L - Appeals Process

Throughout the application review and frequency allotment process, applicants are given opportunities to appeal decisions that have caused the rejection of their application. The appeal process has two levels: the RPC and FCC. In the event that an appeal reaches the second level, the FCC, the FCC decision will be final and binding on all parties. The appeal process will take effect upon plan approval by the FCC. Prior to that approval issues will be resolved by the RPC during the planning process.

Introduction

In order to ensure that the appeal process is open and understandable to the public, the Region 33 Planning Committee has developed this procedure. Those involved in the appeal process can expect the Committee and its members to follow the procedures as described in this Plan (as may be amended from time to time). Where any matter arises during the course of an appeal that is not dealt with in this document, the Committee will do whatever is necessary to enable it to adjudicate the appeal fairly, effectively, and completely. In additional, the Committee may vote to waive any part or all of a particular procedure where it is appropriate in the circumstances. As the Committee gains experience, it will refine and, if necessary, change its policies. Any changes made to the procedure will require a modification to the Region 33 Plan and will be made available to the public.

The Region 33 Committee will make every effort to process appeals in a timely fashion and issue decisions expeditiously.

Appeals Subcommittee

The Appeals subcommittee will be formed when an appeal has been properly filed and accepted by the Region 33 chair. When an appeal is scheduled for hearing by the Appeals subcommittee, the chair will be determined as follows:

- When the chair of the RPC is on the sub-committee, he/she will be the chair
- If the chair of the RPC is not on the sub-committee but the vice-chair is, the vice-chair will be the chair
- If neither the chair nor the vice-chair is on the subcommittee, the RPC will designate one of the members to be the chair.

Withdrawal or Disqualification of a Appeals Subcommittee Member for Bias

Where the chair or a Appeals subcommittee member becomes aware of any facts that would lead a neutral and disinterested person, viewing the matter reasonably and practically, to conclude that a member, whether consciously or unconsciously, would not decide a matter fairly, the member will be prohibited from hearing the appeal unless consent is obtained from all parties to continue. In addition, any party to an appeal may challenge a member on the basis of real or a reasonable apprehension of bias.

Correspondence (Communicating) with the Appeals Sub-Committee

To ensure the appeal process is kept open and fair to the participants, any correspondence to the Region 33 Appeals subcommittee must be sent to the Chair and be copied to all other subcommittee members and other parties to the appeal, if applicable.

Sub-Committee members will not contact a party on any matter relevant to the merits of the appeal, unless that member puts all other parties on notice and gives them an opportunity to participate. The appeal process is public in nature and all meetings regarding the appeal will be open to the public.

What can be Appealed

The Appeals subcommittee hears appeals from a determination or allocation and shall include the following: i.e. number of frequency resources assigned, ranking in the assignment matrix, interference, or any other criteria that the region shall establish.

Who can Appeal

An official of the entity that filed the original application to the Region Planning Committee, or successor thereof, must be the person who files the appeal on behalf of the entity.

How to Appeal

A notice of appeal must be served upon the Region Planning Committee. The notice of appeal may be "delivered" by mail, courier, or hand to the office of the Chair and members of the Region Planning Committee as listed in the Official Membership List. The Committee will also accept a notice of appeal by facsimile to the Chair and Secretary with the original copy of the notice of appeal served as indicated above.

Certain things must be included in a notice of appeal for it to be accepted. The notice of appeal must include:

- The name and address of the appellant;
- The name of the person, if any, making the request for an appeal on behalf of the appellant;
- The address for service of the appellant;
- The grounds for appeal (a detailed explanation of the appellant's objections to the determination and describe errors in the decision);
- A description of the relief requested (what do you want the Committee to order at the end of the appeal);
- The signature of the appellant or the appellant's representative.

Time limit to Appeal

To appeal a determination or allocation, the entity that is subject to the determination must deliver a notice of appeal within three weeks after receiving the decision. If a notice of appeal is not filed within the time required, the right to an appeal is lost. However, the RPC is allowed to extend the deadline, either before or after its expiration date based upon a majority vote of the RPC.

Extension

The RPC has the discretion to extend the time to appeal either before or after the three-week deadline. A request for an extension should be made to the RPC, in writing, and include the reasons for the delay in filing the notice of appeal and any other reasons which the requester believes support the granting of an extension of time to file the appeal. A request for an extension should accompany the notice of appeal.

In deciding whether to grant an extension, the RPC will consider whether fairness requires an extension. The Committee will take into account the length of the delay, the adequacy of the reasons for the delay, the prejudice to those affected by the delay and any impacts that may result from an extension. Other factors not identified could be relevant depending on the circumstances of the particular case.

Rejection of a notice of Appeal

The Region Planning Committee may reject a notice of appeal if:

- It is determined that the appellant does not have standing to appeal; or
- The Committee does not have jurisdiction over the subject matter or the remedy sought.

Before a notice of appeal is rejected, the Region Planning Committee will inform the appellant of this in writing, with reasons, and give the appellant a three-week opportunity to make submissions and any potential parties with an opportunity to respond.

Adding parties to the Appeal

In addition to the parties mentioned above, the Appeals subcommittee has the discretion to add any other party that may be "affected" by the appeal as a party to the appeal. Anyone wanting to obtain party status should make a written request to the Appeals subcommittee as early as possible. The written request should contain the following information:

- The name, address, telephone and fax number, if any, of the person submitting the request;
- A detailed description of how the person is "affected" by the notice of appeal; and
- The reasons why the person should be included in the appeal; and
- The signature of the person submitting the request.

Intervener Status

The Appeals subcommittee may also invite or permit an individual to participate in a hearing as an intervener. Interveners are generally individuals or groups that do not meet the criteria to become a party (i.e. "may be affected by the appeal") but have sufficient interest in, or some relevant expertise or view in relation to the subject matter of the appeal. Individuals wanting to take part in an appeal as an intervener should send a written request to the Appeals sub-committee. The written request should contain the following information:

- The name, address, telephone and fax number, if any, of the person submitting the request;
- A detailed description of how the person has interest in the appeal; and
- Evidence that the person has relevant expertise that would assist in the adjudication of the appeal; and
- The signature of the person submitting the request.

Prior to inviting or permitting a person to participate in a proceeding as an intervener, or deciding on the extent of that participation, the Appeals sub-committee will provide all parties with an opportunity to make representations if they wish to do so.

Type of Appeal (written or oral) hearing

An appeal may be conducted by way of written submissions, oral hearing or a combination of both. The Appeals subcommittee will determine the appropriate type of appeal after a complete notice of appeal has been received. The subcommittee will normally conduct an oral hearing although it may order that a hearing proceed by way of written submissions in certain cases. If written submissions are being considered, input from all of the parties.

Burden of Proof

The general rule is that the burden or responsibility for proving a fact is on the party that brings forth the appeal.

Notification of Expert Evidence

The Appeals Subcommittee requires any party that intends to present expert evidence at a hearing to provide the subcommittee, and all other parties to the appeal, with reasonable advance notice that an expert will be called to give an opinion. The notice should include a brief statement of the expert's qualifications and areas of expertise. If a party intends to produce, at a hearing, a written statement or report prepared by an expert, a copy of the statement or report should be provided to the Subcommittee and all parties to the appeal within a reasonable time before the statement or report is given in evidence. Unless there are compelling reasons for later admission, expert reports should be distributed 30 days prior to the hearing date.

Documents

If a party will be referring to a document that was not provided to the Appeals subcommittee and all parties prior to the hearing, sufficient copies of the document must be brought to the hearing for the sub-committee and all other parties to review.

Appealing the Appeals Subcommittee's Decision

If a party is not satisfied with the decision of the Region's Appeals subcommittee's decision, he or she can appeal that decision to the 700 MHz National Planning Oversight Committee or the FCC.

Appendix M - Inter-Regional Coordination Procedures and Procedures for Dispute Resolution

Introduction

This is a mutually agreed upon Inter-Regional Coordination Procedure and Dispute Resolution Agreement (Agreement) by and between Region 33 and the neighboring Regional Planning Committees. The purpose is to provide a mechanism to resolve issues that may arise under FCC approved plans.

Inter-Regional Coordination Agreement

The following is the specific procedure for inter-regional coordination which has been agreed upon by Regions, which will be used by the Regions to coordinate with adjacent Regional Planning Committees.

1. An application filing window is opened or a Region announces that it is prepared to begin accepting applications on a first-come/first-serve basis.
2. Applications by eligible entities are accepted.
3. An application filing window (if this applies) is closed after appropriate time interval.
4. Intra-regional review and coordination takes place, including a technical review resulting in assignment of channels.
5. After intra-regional review, a copy of those frequency specific applications requiring adjacent Region approval, including a definitive statement of proposed service area, shall be forwarded to the adjacent Region(s) for review. This information will be sent to the adjacent Regional chairperson(s) via the CAPRAD system.
6. The adjacent Region will review the application. If approved, a letter of concurrence shall be sent, via CAPRAD, to the initiating Regional chairperson within thirty (30) calendar days.

Dispute Resolution

If the adjacent Region(s) cannot approve an application request, the adjacent Region shall document the reasons for partial or non-concurrence and respond to the initiating Region within ten (10) calendar days via e-mail. If the initiating Region cannot modify the application to satisfy the objections of the adjacent Region then, a working group comprised of representatives of the Regions involved shall convene within thirty (30) calendar days to attempt to resolve the dispute. The working group shall then report its findings within thirty (30) calendar days to the Regional chairpersons via e-mail or the CAPRAD system. Findings may include, but are not limited to:

1. Unconditional concurrence;

2. Unconditional concurrence contingent upon modification of the applicant's technical parameters; or
3. Partial or total denial of proposed frequencies due to inability to meet co-channel/adjacent channel interference free protection to existing licensees within the adjacent Region.

If the Inter-Regional Working Group cannot resolve the dispute, then the matter shall be forwarded for evaluation to the National Plan Oversight Committee (NPOC), of the National Public Safety Telecommunications Council (NPSTC). Each Region involved in the dispute shall include a detailed explanation of its position, including engineering studies and any other technical information deemed relevant. The NPOC will, within thirty (30) calendar days, report its recommendation(s) to the Regional chairpersons via the CAPRAD system. The NPOC's decision may support any of the disputing Regions or it may develop a proposal that it deems mutually advantageous to the disputing Regions.

1. Where adjacent Region concurrence has been secured, and the channel assignments would result in no change to the Region's current FCC approved channel assignment matrix, then the initiating Region may the applicant(s) that their application may be forwarded to a frequency coordinator for processing and filing with the FCC
2. Where adjacent Region concurrence has been secured, and the channel assignments result in a change to the Region's current FCC approved channel assignment matrix, then the initiating Region shall file to the FCC a "Petition to Amend" their current Regional plan's frequency matrix. The petition shall reflect the new channel assignments and copy of the petition shall be sent to the adjacent Regional chairperson(s).
3. Upon FCC issuance of an "Order" adopting the amended channel assignment matrix, the initiating Regional chairperson will send a courtesy copy of the "Order" to the adjacent Regional chairperson(s) and may the advise the applicant(s) that they may forward their application(s) to the frequency coordinator for processing and filing with the FCC.

Conclusion

IN AGREEMENT HERETO, Regions [14 and 33] do hereunto set their signatures the day and year first above written.

Respectfully,

Region __ _____ Date _____

Region 33 _____ Date _____

Appendix M - Inter-Regional Coordination Procedures and Procedures for Dispute Resolution

Introduction

This is a mutually agreed upon Inter-Regional Coordination Procedure and Dispute Resolution Agreement (Agreement) by and between Region 33 and the neighboring Regional Planning Committees. The purpose is to provide a mechanism to resolve issues that may arise under FCC approved plans.

Inter-Regional Coordination Agreement

The following is the specific procedure for inter-regional coordination which has been agreed upon by Regions, which will be used by the Regions to coordinate with adjacent Regional Planning Committees.

1. An application filing window is opened or a Region announces that it is prepared to begin accepting applications on a first-come/first-serve basis.
2. Applications by eligible entities are accepted.
3. An application filing window (if this applies) is closed after appropriate time interval.
4. Intra-regional review and coordination takes place, including a technical review resulting in assignment of channels.
5. After intra-regional review, a copy of those frequency specific applications requiring adjacent Region approval, including a definitive statement of proposed service area, shall be forwarded to the adjacent Region(s) for review. This information will be sent to the adjacent Regional chairperson(s) via the CAPRAD system.
6. The adjacent Region will review the application. If approved, a letter of concurrence shall be sent, via CAPRAD, to the initiating Regional chairperson within thirty (30) calendar days.

Dispute Resolution

If the adjacent Region(s) cannot approve an application request, the adjacent Region shall document the reasons for partial or non-concurrence and respond to the initiating Region within ten (10) calendar days via e-mail. If the initiating Region cannot modify the application to satisfy the objections of the adjacent Region then, a working group comprised of representatives of the Regions involved shall convene within thirty (30) calendar days to attempt to resolve the dispute. The working group shall then report its findings within thirty (30) calendar days to the Regional chairpersons via e-mail or the CAPRAD system. Findings may include, but are not limited to:

1. Unconditional concurrence;

2. Unconditional concurrence contingent upon modification of the applicant's technical parameters; or
3. Partial or total denial of proposed frequencies due to inability to meet co-channel/adjacent channel interference free protection to existing licensees within the adjacent Region.

If the Inter-Regional Working Group cannot resolve the dispute, then the matter shall be forwarded for evaluation to the National Plan Oversight Committee (NPOC), of the National Public Safety Telecommunications Council (NPSTC). Each Region involved in the dispute shall include a detailed explanation of its position, including engineering studies and any other technical information deemed relevant. The NPOC will, within thirty (30) calendar days, report its recommendation(s) to the Regional chairpersons via the CAPRAD system. The NPOC's decision may support any of the disputing Regions or it may develop a proposal that it deems mutually advantageous to the disputing Regions.

1. Where adjacent Region concurrence has been secured, and the channel assignments would result in no change to the Region's current FCC approved channel assignment matrix, then the initiating Region may the applicant(s) that their application may be forwarded to a frequency coordinator for processing and filing with the FCC
2. Where adjacent Region concurrence has been secured, and the channel assignments result in a change to the Region's current FCC approved channel assignment matrix, then the initiating Region shall file to the FCC a "Petition to Amend" their current Regional plan's frequency matrix. The petition shall reflect the new channel assignments and copy of the petition shall be sent to the adjacent Regional chairperson(s).
3. Upon FCC issuance of an "Order" adopting the amended channel assignment matrix, the initiating Regional chairperson will send a courtesy copy of the "Order" to the adjacent Regional chairperson(s) and may the advise the applicant(s) that they may forward their application(s) to the frequency coordinator for processing and filing with the FCC.

Conclusion

IN AGREEMENT HERETO, Regions [55 and 33] do hereunto set their signatures the day and year noted.

Respectfully,

Region 55 Steven C. Sharpe. Dat **July 22, 2008**

Region 33 Paul M. Mayer Date July 18, 2008
Paul M. Mayer, Chairman

Region 44

Appendix M - Inter-Regional Coordination Procedures and Procedures for Dispute Resolution

Introduction

This is a mutually agreed upon Inter-Regional Coordination Procedure and Dispute Resolution Agreement (Agreement) by and between Region 33 and the neighboring Regional Planning Committees. The purpose is to provide a mechanism to resolve issues that may arise under FCC approved plans.

Inter-Regional Coordination Agreement

The following is the specific procedure for inter-regional coordination which has been agreed upon by Regions, which will be used by the Regions to coordinate with adjacent Regional Planning Committees.

1. An application filing window is opened or a Region announces that it is prepared to begin accepting applications on a first-come/first-serve basis.
2. Applications by eligible entities are accepted.
3. An application filing window (if this applies) is closed after appropriate time interval.
4. Intra-regional review and coordination takes place, including a technical review resulting in assignment of channels.
5. After intra-regional review, a copy of those frequency specific applications requiring adjacent Region approval, including a definitive statement of proposed service area, shall be forwarded to the adjacent Region(s) for review. This information will be sent to the adjacent Regional chairperson(s) via the CAPRAD system.
6. The adjacent Region will review the application. If approved, a letter of concurrence shall be sent, via CAPRAD, to the initiating Regional chairperson within thirty (30) calendar days.

Dispute Resolution

If the adjacent Region(s) cannot approve an application request, the adjacent Region shall document the reasons for partial or non-concurrence and respond to the initiating Region within ten (10) calendar days via e-mail. If the initiating Region cannot modify the application to satisfy the objections of the adjacent Region then, a working group comprised of representatives of the Regions involved shall convene within thirty (30) calendar days to attempt to resolve the dispute. The working group shall then report its findings within thirty (30) calendar days to the Regional chairpersons via e-mail or the CAPRAD system. Findings may include, but are not limited to:

1. Unconditional concurrence;

2. Unconditional concurrence contingent upon modification of the applicant's technical parameters; or
3. Partial or total denial of proposed frequencies due to inability to meet co-channel/adjacent channel interference free protection to existing licensees within the adjacent Region.

If the Inter-Regional Working Group cannot resolve the dispute, then the matter shall be forwarded for evaluation to the National Plan Oversight Committee (NPOC), of the National Public Safety Telecommunications Council (NPSTC). Each Region involved in the dispute shall include a detailed explanation of its position, including engineering studies and any other technical information deemed relevant. The NPOC will, within thirty (30) calendar days, report its recommendation(s) to the Regional chairpersons via the CAPRAD system. The NPOC's decision may support any of the disputing Regions or it may develop a proposal that it deems mutually advantageous to the disputing Regions.

1. Where adjacent Region concurrence has been secured, and the channel assignments would result in no change to the Region's current FCC approved channel assignment matrix, then the initiating Region may the applicant(s) that their application may be forwarded to a frequency coordinator for processing and filing with the FCC
2. Where adjacent Region concurrence has been secured, and the channel assignments result in a change to the Region's current FCC approved channel assignment matrix, then the initiating Region shall file to the FCC a "Petition to Amend" their current Regional plan's frequency matrix. The petition shall reflect the new channel assignments and copy of the petition shall be sent to the adjacent Regional chairperson(s).
3. Upon FCC issuance of an "Order" adopting the amended channel assignment matrix, the initiating Regional chairperson will send a courtesy copy of the "Order" to the adjacent Regional chairperson(s) and may the advise the applicant(s) that they may forward their application(s) to the frequency coordinator for processing and filing with the FCC.

Conclusion

IN AGREEMENT HERETO, Regions [44 and 33] do hereunto set their signatures the day and year first above written.

Respectfully,

Region 44 David Duffel Date 12/2/08

Region 33 Paul Maye Date 12-2-2008

Region 17

Appendix M - Inter-Regional Coordination Procedures and Procedures for Dispute Resolution

Introduction

This is a mutually agreed upon Inter-Regional Coordination Procedure and Dispute Resolution Agreement (Agreement) by and between Region 33 and the neighboring Regional Planning Committees. The purpose is to provide a mechanism to resolve issues that may arise under FCC approved plans.

Inter-Regional Coordination Agreement

The following is the specific procedure for inter-regional coordination which has been agreed upon by Regions, which will be used by the Regions to coordinate with adjacent Regional Planning Committees.

1. An application filing window is opened or a Region announces that it is prepared to begin accepting applications on a first-come/first-serve basis.
2. Applications by eligible entities are accepted.
3. An application filing window (if this applies) is closed after appropriate time interval.
4. Intra-regional review and coordination takes place, including a technical review resulting in assignment of channels.
5. After intra-regional review, a copy of those frequency specific applications requiring adjacent Region approval, including a definitive statement of proposed service area, shall be forwarded to the adjacent Region(s) for review. This information will be sent to the adjacent Regional chairperson(s) via the CAPRAD system.
6. The adjacent Region will review the application. If approved, a letter of concurrence shall be sent, via CAPRAD, to the initiating Regional chairperson within thirty (30) calendar days.

Dispute Resolution

If the adjacent Region(s) cannot approve an application request, the adjacent Region shall document the reasons for partial or non-concurrence and respond to the initiating Region within ten (10) calendar days via e-mail. If the initiating Region cannot modify the application to satisfy the objections of the adjacent Region then, a working group comprised of representatives of the Regions involved shall convene within thirty (30) calendar days to attempt to resolve the dispute. The working group shall then report its findings within thirty (30) calendar days to the Regional chairpersons via e-mail or the CAPRAD system. Findings may include, but are not limited to:

1. Unconditional concurrence;

2. Unconditional concurrence contingent upon modification of the applicant's technical parameters; or
3. Partial or total denial of proposed frequencies due to inability to meet co-channel/adjacent channel interference free protection to existing licensees within the adjacent Region.

If the Inter-Regional Working Group cannot resolve the dispute, then the matter shall be forwarded for evaluation to the National Plan Oversight Committee (NPOC), of the National Public Safety Telecommunications Council (NPSTC). Each Region involved in the dispute shall include a detailed explanation of its position, including engineering studies and any other technical information deemed relevant. The NPOC will, within thirty (30) calendar days, report its recommendation(s) to the Regional chairpersons via the CAPRAD system. The NPOC's decision may support any of the disputing Regions or it may develop a proposal that it deems mutually advantageous to the disputing Regions.

1. Where adjacent Region concurrence has been secured, and the channel assignments would result in no change to the Region's current FCC approved channel assignment matrix, then the initiating Region may the applicant(s) that their application may be forwarded to a frequency coordinator for processing and filing with the FCC
2. Where adjacent Region concurrence has been secured, and the channel assignments result in a change to the Region's current FCC approved channel assignment matrix, then the initiating Region shall file to the FCC a "Petition to Amend" their current Regional plan's frequency matrix. The petition shall reflect the new channel assignments and copy of the petition shall be sent to the adjacent Regional chairperson(s).
3. Upon FCC issuance of an "Order" adopting the amended channel assignment matrix, the initiating Regional chairperson will send a courtesy copy of the "Order" to the adjacent Regional chairperson(s) and may the advise the applicant(s) that they may forward their application(s) to the frequency coordinator for processing and filing with the FCC.

Conclusion

IN AGREEMENT HERETO, Regions [17 and 33] do hereunto set their signatures the day and year first above written.

Respectfully,

Region 17 Bob Stephens Date 11-20-2008

Region 33 Paul M Mayer Date 11-20-2008

Appendix N – Letters of Coordination

Region 44 – West Virginia
700 MHz Regional Planning Committee

1300 Harrison Avenue
Elkins, West Virginia 26241
304.637.0200 – V 304.637.0203. – F

July 21, 2006

Paul M. Mayer, Chairman
Region 33, 700 MHz Regional Planning Committee
Ohio Office of Information Technology
2323 West 5th Avenue, Suite 150
Columbus, OH 43204

Dear Mr. Mayer:

My apologies for not replying to your request to review Region 33's 700 MHz plan as quickly as you desired. Our state is in the midst of an attempt to build a P-25 Trunked radio system, and that seems to take every spare moment.

The Region 44 planning committee has reviewed the Region 33 700 MHz regional plan, and concurs with it.

Sincerely,

David W. Saffel
Chairman Region 44
700 MHz Regional Planning Committee

REGION 21 700 MHz PLANNING COMMITTEE

Joseph M. Turner, Chairman 2719 State Street
Saginaw, MI 48602 Tel 989 793-7373
e-mail: jturner@michiganpropertytax.com

March 14, 2006

Reference: Letter of Concurrence for Regional Plan

Mr. Paul Mayer, Chairman
Region 33 700 MHz RPC
Ohio Department of Administrative Services
MARCS Project Office
2323 West 5th Avenue, Suite 150
Columbus, OH 43204-4899

Dear Mr. Mayer:

This letter is being sent as a formal confirmation of a decision by members of Michigan's 700 MHz Regional Planning Committee (Region 21 RPC) with regard to Region 33's request for concurrence on their plan.

At its public meeting of March 7, 2006 the RPC passed the following resolution:

"Be it Resolved that the Region 21 Committee concurs with the use of 700 MHz frequencies in the several regions bordering Region 21 as assigned in the original CAPRAD sort. In the event that a region bordering Region 21 intends to use a frequency(ies) other than those assigned in the original sort promulgated by the FCC, within an area extending 70 miles from the border of Region 21, the Region 21 Committee may ask for additional information including engineering studies, to determine any impact the proposed deviation from the original CAPRAD sort will have on the use of the 700 MHz spectrum within Region 21. Region 21 will grant concurrence upon a sufficient showing that the proposed changes from the CAPRAD sort will result in no interference to current or future users of the 700 MHz spectrum within Region 21."

Michigan's Region 21 RPC extends congratulations to our friends in Region 33 for the submission of their plan to the Federal Communications Comission. The Region 21 Planning Committee hopes the specific language of its Resolution of Concurrence will be sufficient for the needs of Region 33.

Yours truly,

Joseph M. Turner, Chairman
Region 21 700 MHz Planning Commission
2719 State St.
Saginaw, MI 48602

cc: FCC Jeannie Benfaida

NEW YORK-BUFFALO
FCC Region 55 700-MHz
REGIONAL PLANNING COMMITTEE

Steven Sharpe
Chairman
Region 55 700 and 800-MHz Planning Committees
Director of Emergency Communications
Genesee County Office of the Sheriff
165 Park Road
Batavia, New York 14020-1283
Tel: 585.345.3000 x 3400
Email: ssharpe@co.genesee.ny.us

22 July 2008

INTERREGIONAL CONCURRENCE NOTIFICATION

Mr. Paul M. Mayer
Chairman - Region 33 700 and 800-MHz Planning Committee
Ohio Office of Information Technology
2323 West 5th Avenue, Suite 150
Columbus, Ohio 43204-4899
Telephone: (614) 995-0063
FAX: (614) 995-0067
Email: paul.mayer@ohio.gov

In the Matter of

FCC Regional Planning Committee (RPC) 33	)	WT Docket No. 02-378
	)	PSHS Docket No. 06-229
Proposed Public-Safety Communications Plan for the 769- to 775-MHz and 799- to 805-MHz bands	)	FCC Docket No. 07-132

Dear Chairman Mayer:

On 18 July 2008, Regional Planning Committee (RPC) 33 (Ohio) provided RPC 55 (New York – Buffalo) with a conditional concurrence approval for its proposed public-safety communications plan for the General Use channels in the 769- to 775-MHz and 799- to 805-MHz frequency bands.

The conditional concurrence approval cites that RPC 33 shall issue formal concurrence for the Plan given that:

- RPC 55 adheres to the CAPRAD National Pool allotments for frequency assignments and coordination; and that
- RPC 55 agrees to adhere to the Interregional Frequency-Coordination and Dispute-Resolution procedure established by the National Coordination Committee (NCC).

- Section 8.2 and 12 of the proposed RPC 55 700-MHz Plan are already state that "Each application must be consistent with the CAPRAD 700-MHz National pre-allotment channel pool for Region 55." "Any application packages that do not provide the appropriate pool protection as required in Interference-Protection Criteria and System-Design Specifications (in Section 9) will be returned to the applicant, with information regarding other impacting applications. The applicant will be allowed thirty (30) days to respond."

Therefore, the proposed RPC 55 Plan adheres to Condition One (1).

- Second, Appendix L of the proposed RPC 55 Plan contains the Interregional Frequency-Coordination and Dispute-Resolution procedure established by the National Coordination Committee (NCC).

Further, in Dispute Resolution, Number Three (3), Sub element Number Two (2), RPC 55 determines that any incumbent licensee(s) channel allotment(s) and/or license(s) should also be protected in addition to the National Pool Allotments. This protocol in conjunction with the CAPRAD National Pool Allotments promotes an interference-free environment.

Therefore, the proposed RPC 55 Plan adheres to Condition Two (2) and incorporates additional interference protection for both regions.

Given the above-noted items, RPC 55 hereby provides this correspondence to serve as the official, written concurrence for the RPC 33 700-MHz public-safety communications plan.

As such, RPC 55 shall consider the conditional concurrence letter provided by RPC 33 on 18 July 2008 to serve as the official, written concurrence for the Proposed RPC 55 700-MHz Plan unless otherwise contacted by RPC 33.

Please contact me with any questions, comments, or concerns.

Best Regards,

Steven C. Sharpe

Steven C. Sharpe, Chairman

FCC RPC 55 700-MHz and 800-MHz NPSPAC Planning Committees

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF MILITARY AFFAIRS
OFFICE OF THE ADJUTANT GENERAL
BOONE NATIONAL GUARD CENTER
FRANKFORT, KENTUCKY 40601-6168

November 20, 2008

Paul M. Mayer
Region 33 700MHz Chair
Telecommunication Systems Analyst
Ohio Office of Information Technology
2323 West 5th Avenue, Suite 150
Columbus, Ohio 43204

Dear Mr. Mayer

Region 17 is in receipt of your proposed 700 MHz Ohio Regional Plan, as revised and as posted on the CAPRAD website. Region 17 has met, has reviewed and has formally approved the Region 33 Ohio 700 MHz Regional Plan.

This letter serves as the official, written concurrence of Region 17 to your proposed 700 MHz Regional Plan.

Sincerely,

Bob Stephens
Region 17 700 MHz Co-Chairperson
Public Safety Working Group
Kentucky Department of Military Affairs
Boone National Guard Center
100 Minuteman Parkway
Frankfort, KY 40601-6168

An Equal Opportunity Employer M/F/D