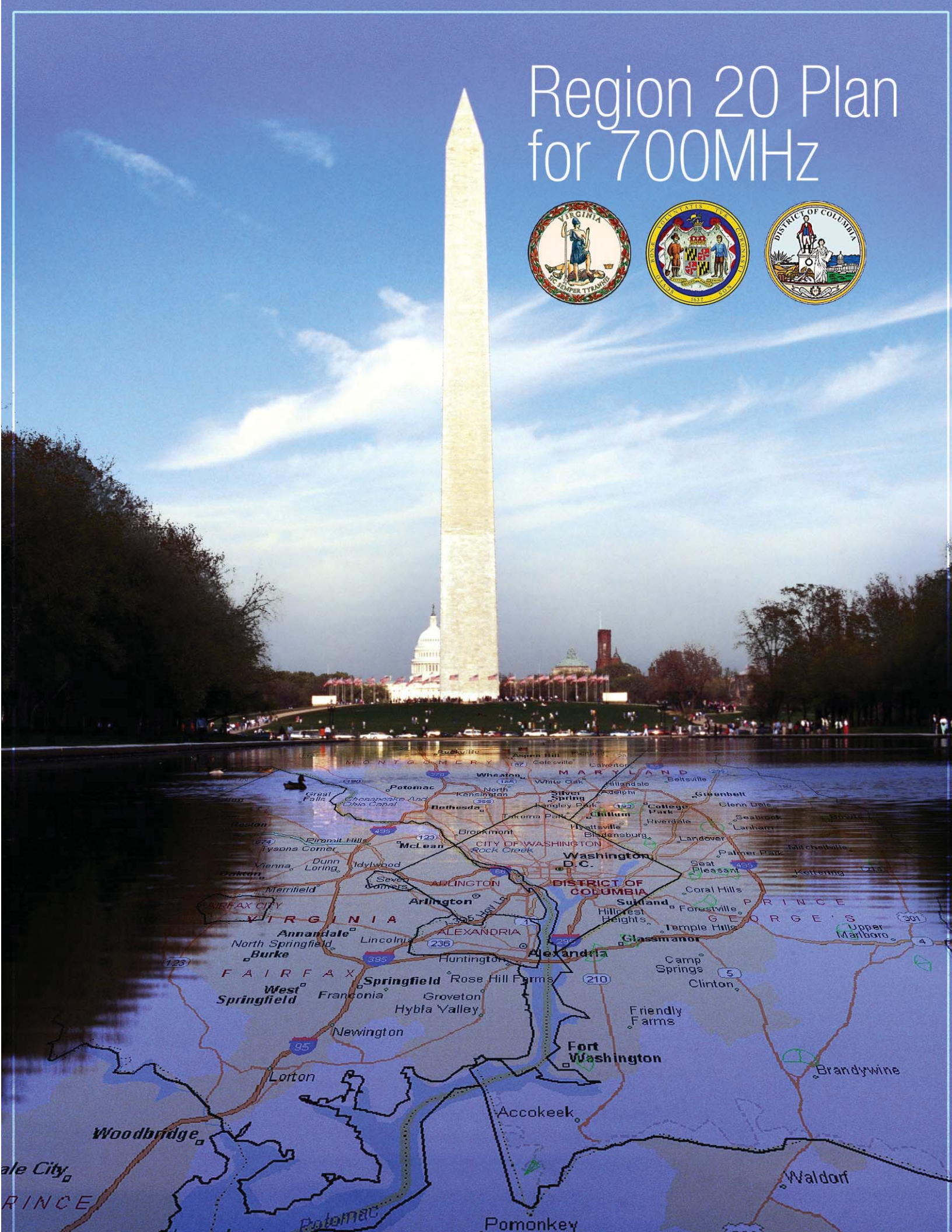
Region 20 Plan for 700MHz



February 10, 2014

David G. Simpson
Rear Admiral, USN (Ret.)
Chief, Public Safety and Homeland Security Bureau
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554
Attention: Chief, Public Safety and Homeland Security Bureau

Subject: Docket 02-378
Amendment of Approved Region 20 Plan for 700 MHz

Dear Admiral Simpson:

Regional Planning Committee (RPC) Twenty is submitting the Plan for 700 MHz with a request for the approval of what we believe to be "minor" changes pursuant to 47 CFR §90.527(b). All of the proposed changes are highlighted for the benefit of the Commission's review.

Please feel free to contact me should there be any questions.

Sincerely,

Wayne A McBride

Wayne A. McBride, Chairman
Director of Public Safety Communications
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1.0 700 MHz Regional Plan for Regional Planning Committee 20

This document is the 700 MHz Plan for Regional Planning Committee 20 (District of Columbia, Maryland, and Northern Virginia) describing how the General Use frequencies, as described in 47 CFR §90.531(b)(6) will be allocated and implemented in the Region. This section is provided in compliance with 47 CFR §90.527(a)(1).

The Region 20 Plan was updated in December of 2007 pursuant to ¶346 of the Second Report and Order (FCC 07-132), approved by the Region's members, coordinated with adjacent Regional Planning Committees, and returned to the Commission as required.

1.1 Regional Chair

The Regional Chairperson of Region 20 is:

Wayne A. McBride
Director of Public Safety Communications
Prince George's County
4621-A Boston Way
Lanham, MD 20785
wmcbride@co.pg.md.us
(240) 832-0715

1.2 Other RPC Officers and full RPC Membership

The Vice Chairperson of Region 20 is Mr. Richard Bohn. His contact information is below:

Richard A. Bohn, Chief
Baltimore County Electronic Services
rbohn@baltimorecountymd.gov
410-887-1878 voice
410-887-1882 fax

The Secretary for Region 20 is Ms. Maria Elena Perez. The contact information is below:

Maria Elena Perez
State of Maryland Department of Information Technology
301 West Preston Street, Suite 1304
Baltimore, MD 21201
e-mail: Maria-Elena.Perez@maryland.gov
Phone: 410.767.4112
Fax: 410.333.7483

Membership in the Region 20 Regional Planning Committee is open to any interested

party. Committee Officer Offices, voting procedures, and membership attendance requirements are listed in the Region 20 Planning Committee bylaws. Appendix A contains the Region 20 bylaws. Appendix B is a list of Region 20's initial members and their agency affiliation. Appendix B-1 lists the Region's membership at the time in which the Region 20 700 MHz Plan was adopted. Voting and operating procedures are described in the bylaws of this plan. Prior to the first meeting of the 700 MHz Committee, sixty (60) days of notice was provided to all interested parties and all sessions have been open to the public.

1.3 Plan Development and Regional Participation

A 700 MHz Regional Planning Committee convening meeting was held on June 22, 2001. ***Notice of the meeting was posted on the Commission's 700 MHz web page on April 9, 2001, more than sixty (60) days prior to the date of the actual meeting. The meeting was open to the public***.

The Plan was developed following a series of meetings held within Region 20. Meetings were typically preceded by a public announcement on the Commission's 700 MHz Web Page as well as individual emails to existing representatives of Region 20 that had assisted in the development of the RPC for 800 MHz. Including the session in which the RPC was convened, three meetings of the Region 20 were held and the dates of the meetings are included in this Plan (please see Appendix B). Following the initial RPC meetings and multiple meetings of the Region's Technical Committee, a draft of the Region 20 Plan for 700 MHz was distributed to the membership with a request for comments and corrections. The Plan submitted to the Commission follows the meeting process and the comprehensive incorporation of feedback from the Region's members.

1.4 Technical Planning Committee

The Region 20 Plan for 700 MHz was primarily developed by the Region's Technical Committee chaired by Mr. Wayne A. McBride, Deputy Director for Public Safety Communications for Prince George's County, Maryland. The membership of the Technical Committee is provided in Appendix B-2.

1.5 Major Elements of the Plan – from 47 CFR §90.527 (a)(2)

The major elements of the Plan are those required to conform to the requirements of the Commission as contained in 47 CFR §90 Subpart R. Each of the elements as contained in the rules of the Commission is specifically notated in this Plan to facilitate regulatory review. Internally, compliance with the Commission's requirements was assessed utilizing the documentation provided by the National Public Safety Telecommunications Council (NPSTC).

1.6 Opportunities for Participation in the Plan's Development - from 47 CFR §90.527 (a)(2)

Although administratively unplanned, there were two distinctively different periods of Plan development. There were meetings held in 2001, 2002, and 2003 as required by the Commission's rules; however, regional participation in development of the 700 MHz plan was quite limited and without specific action for the review of the Region.

In 2005, there was renewed interest in development of the Plan and with the Regional Meeting held on March 23, 2006, a Technical Committee was formed and charged with the responsibility to develop a draft Plan for review by the Region. Mr. Wayne McBride, Deputy Director of Public Safety Communications for Prince George's County, Maryland was appointed as Chair of the Technical Committee.

At the March 23 meeting, Chairman McBride re-issued a general call throughout the Region for volunteers to participate in the development of the 700 MHz Plan. Emails were sent to members throughout the Region already participating in other initiatives such as the 800 MHz Rebanding group. Contacts were also extended to related communications groups including the National Capital Region (NCR), Maryland Eastern Shore Interoperability Network (MESIN) and Central Maryland Area Radio Communications (CMARC). A number of Region members participated in one or more Planning Meetings (please see list in Section 1.4 of the Plan).

To facilitate the broadest level of participation, meetings were open to all interested persons through on-site participation or a telecommunications conference bridge. All meetings were open to the public as required by 47 CFR §90.527 (a)(8) and no persons were excluded from any of the meetings.

The Technical Committee held meetings on:

1. March 23, 2006
2. May 27, 2006
3. June 15, 2006
4. June 27, 2006

The minutes for meetings are contained in Appendix D.

2.0 Region 20 Description

Region 20 encompasses the entire state of Maryland, the District of Columbia, and the northern independent cities and counties of the Commonwealth of Virginia. The Region includes the nation's capital and many critical national infrastructure and irreplaceable American sites representing the history of our country. These sites and critical infrastructure facilities are found throughout the Region. A list of critical federal and state facilities would be too great to be included within this document. The most critical facilities include the buildings in the District of Columbia supporting the seat of our national tripartite government. Additionally, a number of vital military and governmental facilities are located within the Region such as the White House, Capitol, Supreme Court Building, Pentagon, Andrews Air Force Base, and Camp David, all strategic national infrastructures. However, for most of the federal facilities in the Region, it will be the first responders of the Region's emergency and law enforcement services that will be initially summoned in the event of an emergency. The scope of federal facilities located in our area likely places a greater emergency support responsibility on the first responders of Region 20 than any other area within the United States.

Unfortunately, the importance, beauty, and grandeur of the nation's capital make the region an attractive as well as proven target of terrorism. On September 11, 2001, first responders from throughout the metropolitan Washington area responded to the Pentagon in northern Virginia when it was viciously attacked by terrorists using a commandeered American Airlines Boeing 757. This national tragedy demonstrated to the Region the critical necessity of public safety communications interoperability.

The Washington metropolitan area draws tourists and governmental leaders from throughout the world. International airports are located in northern Virginia and the suburbs of Baltimore. The role of protecting visitors and the citizens of the nation's capital is primarily vested with federal law enforcement and the Region's first responders, all of whom are associated with the Metropolitan Washington Council of Governments (COG) as well as the federally chartered National Capital Region (NCR). The jurisdictions within the NCR represent over 53% of the population within Region 20.

Within the State of Maryland, only the City of Baltimore is independent from the surrounding county. In the Commonwealth of Virginia, all cities are independent from and not within a county's borders. An alphabetical list of the individual counties and independent cities located in Maryland and the Commonwealth can be found in Appendix C.

Region 20 jurisdictions have a diverse geography along with a varied population base totaling 8,265,054 persons, as estimated by the 2004 US Census (update). Along the Interstate (highway) 95 corridors between the Washington and

Baltimore metropolitan areas, there is a large population base found in both urban and suburban areas. Within the Washington and Baltimore areas, a significant number of temporary guests representing tourists, business leaders, and international dignitaries exist adding to the diversity and complexity of the population base. Other areas of the Region consist of small to moderate concentrated pockets of population surrounded by areas of rural population or large amounts of federal property. There is also is a significant transient population from outside of the Region's normal population base visiting professional sports venues, the beach and scenic waterway areas of the District of Columbia and Maryland. As an example, FedEx Field in Prince George's County is the largest National Football League stadium in the United States.

Portions of the Region including Maryland's Eastern Shore and mountainous areas in the west may vary from rural farmland to tourist destinations. There are 12,069 square miles in Region 20. These diverse demographics, combined with the RF propagation difficulties associated with the terrain, engender a challenge by limiting frequency allotments.

Region 20 is adjacent to the following regions:

Region 28	Delaware, southern New Jersey, and eastern Pennsylvania
Region 36	Western Pennsylvania
Region 42	Commonwealth of Virginia
Region 44	State of West Virginia

In the 700 MHz band, allotments for narrowband channels have been generally, but not identically developed based on the CAPRAD database which considers population densities including those of the adjacent Regions.

These 700 MHz channels will be allocated to the eligible first responder and other authorized agencies in Region 20 as identified in this Plan. Eligible agencies included, but are not limited to, law enforcement agencies, state and local governments as well as volunteer, and other fire departments and emergency medical services organizations.

2.1 Notification Process

A 700 MHz Regional Planning Committee convening meeting was held on June 22, 2001. Notice of the meeting was posted on the Commission's 700 MHz web page on April 9, 2001, more than sixty (60) days prior to the date of the actual meeting. Announcements indicating the date, time and location of the first meeting were sent by mail to the FCC Wireless Telecommunications Bureau and posted on the Commission's 700 MHz web site. The convener also contacted several agencies via email that expressed interest in the planning process prior to the meeting. There are no federally recognized Native American tribal reservations located within Region 20. Copies of the announcements sent to the

FCC and any Public Notices released relating to Region 20's meeting are included in Appendix D. The 700 MHz convening meeting was chaired by Mr. G. Edward Ryan.

Included in the Commissions Daily Digest and web page were the following announcements (summarized):

7/7/2006

FCC Daily Digest

Vol. 25 No. 130 July 7, 2006

REGION 20 (DISTRICT OF COLUMBIA, MARYLAND AND NORTHERN VIRGINIA AREA) 700 MHz PUBLIC SAFETY PLANNING COMMITTEE ANNOUNCES NEXT PLANNING MEETING

The Region 20 (District of Columbia, Maryland and Northern Virginia area)[1] 700 MHz Regional Planning Committee announces that the next meeting will be held on Monday, August 14, 2006, beginning at 10:00 a.m., in the lower level conference room at the Office of Traffic and Highway Maintenance, Maryland State Highway Administration, Hanover Complex, 7491 Connelley Drive, Hanover, Maryland.

1/22/2004

Region 20 (District of Columbia, Maryland & N. Virginia) will have a (700 MHz) Public Safety planning meeting on Thursday, January 22, 2004 at 10:00 a.m., in the Large Conference Room (Lower Level), Office of Traffic & Maintenance, Maryland State Highway Administration, Hanover Complex, 7491 Connelley Drive, Hanover, Maryland. For additional information, contact Region 20 Chairman, C. Edward Ryan, II, at 410-767-4219 or via e-mail at ryan@dbm.state.md.us[2]

[1] The Region 20 area includes the District of Columbia, Maryland and Northern Virginia (Arlington, Fairfax, Fauquier, Loudoun, Prince William and Stafford Counties, and the cities of Alexandria, Fairfax, Falls Church, Manassas and Manassas Park).

[2] These are no longer the correct phone numbers for Mr. Ryan; however, they were the correct numbers at time of publication

9/8/2003
PUBLIC NOTICE (DA 03-2852)

Region 20 (Maryland-Metropolitan Area) Public Safety Planning Committees Announce (700 MHz) Regional Public Safety Planning Meeting and NPSPAC (800 MHz) Regional Public Safety Planning Meeting

12/13/2002
PUBLIC NOTICE (DA 02-3447)
Region 20 (District of Columbia, Maryland, and Northern Virginia) Public Safety Planning Committees Announce Region 20 800 MHz (NPSPAC) Regional Planning Meeting and Region 20 700 MHz Regional Planning Meeting

The Region 20 (700 MHz) Regional Planning Committee will hold a meeting on Monday, June 17, 2002, at 1:30 p.m. at the Maryland State Highway Administration, Hanover, Maryland. Additional information is available from Region 20 Chairman Alan Kealey.

4/09/2001
PUBLIC NOTICE (DA 01-859)
District of Columbia, Maryland and Northern VA, 700 MHz Public Safety Planning Committee (Region 20) Announces First Meeting, June 22, 2001

Meeting announcements were also made over the Region's 700 MHz website:

http://groups.yahoo.com/group/Region20_700MHz/

2.2 Future Meetings

Prior to calling meetings after the approval of the Region 20 Plan, the Operations Committee of the Region shall be charged with the responsibility of notifying persons regarding future meetings. This shall include providing notices to the Commission for insertion into the FCC's Daily Digest as well as specific messages to existing members as well as through the SIECs, NCR, CMARC, and MESIN. If any federally recognized tribes of Native Americans are formed in Region 20, notices will be extended to these bodies.

There shall be no less than thirty (30) days of notice provided prior to a meeting with the sufficiency of notice measured by the posting of the meeting's information in the Daily Digest of the Commission.

2.3 Operations of the Region

Region 20 employs Robert's Rules of Order to conduct meetings. Voting member considerations are listed in the Region 20 By-Laws. The meetings are open to all interested persons and public input time can be provided for anyone to express a viewpoint or to have input to the Regional Planning process.

A minimum of one (1) full committee meeting will be held every twelve months. The Region 20 Chairperson has the authority to call an additional meeting at a time when he/she deems necessary or when he/she deems it in the best interest of the Region to convene. For the convenience of Region 20 members, attempts will be made to coordinate 700 MHz meetings with Region 20 800 MHz meetings.

The Regional Planning Committee Twenty (20) 700 MHz list-serve, http://groups.yahoo.com/group/Region20_700MHz/ was created in July of 2001.

As provided in the bylaws, the Chairperson shall call a meeting of the Regional Planning Committee to elect a Chair, Vice Chair and Secretary to serve for a two-year term.

A chronological list of meetings, summary of minutes, meeting announcements and agendas outlining Region 20 progress in 700 MHz development is located in **Appendix D** of this document.

2.4 Overview of public safety entities that have jurisdiction within or over any or all portions of the Region (state agencies, federal agencies, etc.)

Region 20 supports a wide variety of federal, state, and local first responders and related governmental and non-governmental resources. Included within the Region are a wide variety of state law enforcement agencies requiring statewide radio system support. These systems may also provide interoperability for federal or local government law enforcement agencies.

The Region also supports local law enforcement agencies that may range in size from small police and sheriff's departments to large county or city police departments. There are also many local law enforcement entities within the Region providing support for authorities, higher education, and other specialized areas of criminal justice and public safety.

One will also find a wide variety of fire and emergency medical resources within the Region ranging from municipal fire departments to volunteer fire and rescue organizations.

Emergency medical services may be provided by municipal or volunteer fire departments as well as volunteer rescue squads and commercial ambulance

services.

2.5 Solicitation of Plan Comments

Region 20 solicited comments from a wide variety of persons relative to the Plan for 700 MHz. The principle work in development of the Plan was performed by the Region's 700 MHz Technical Committee. Membership on the Technical Committee was open to any member of the Region without limitation and a substantial number of members attended meetings and provided input to the multiple versions of the Plan shared during its development.

Beyond members of the Technical Committee, feedback was actively solicited from the entire membership, particularly the persons who had participated in development of the 800 MHz Plan.

Drafts of the Plan were submitted to the entire membership of Region 20 on multiple occasions. Relevant feedback from the Region's membership was obtained and incorporated into the Plan.

In addition to internal Region 20 members, copies of the Plan in draft form were made to the adjoining Region chairs or in the case of Region 36, the convener. Copies were also provided to the Statewide Interoperability Executive Committees (SIECs) in the Commonwealth and State of Maryland.

Through this process, multiple drafts of the Plan were developed until a final consensus Plan had been developed.

2.6 Process Used to Consider Comments

As noted in Section 2.5, multiple drafts were submitted to the membership of the Technical Committee as well as the entire Region. Meetings were held following the distribution of draft versions and members were invited to attend either in person or by teleconference to provide comments and suggestions. Many comments were offered in the Plan's development and the resulting document provided to the Commission is the culmination of a highly collaborative process.

When comments were submitted, the recommendations were presented to the Technical and/or Regional Committee for discussion and voting. Those comments and submissions supported by the Committees were adopted and incorporated into the Plan.

3.0 Regional Plan Administration and Frequency Coordination

3.1 General Description of Spectrum Allocation – from 47 CFR §90.527 (a)(3)

A. Region 20 takes the position that it has two principle responsibilities to the members and adjacent regions. First, the Regional Plan is predicated upon an attempt to provide as much spectrum to an applicant as the facts and circumstances of the application support. To this end, the Region will consider in totality the current spectral resources of the applicant as well as other potential requirements of other licensees within the applicant's area of operation and make every effort to discharge its duties consistent with the Commission's rules and in a manner that serves the public interest.

The review will also consider the issue of spectrum (in any band) to be returned by the applicant, if any, and the funding available to implement a system. All of these steps are under-taken to ensure that the Region carefully manages and becomes a good steward of the spectrum for which it is responsible. To the greatest extent possible, the Region desires to demonstrate to both applicants and potential applicants the highest levels of reasonableness in the management of spectral resources for which it is responsible.

As part of its review of an applicant's request, in addition to considering the potential impact upon other eligible users within a geographic area, the Technical Committee will also review the application to ensure that, if approved, the document does not negatively impact other eligible applicants within or adjacent to the Region. Secondly, the Region must protect adjacent and co-channel users in other regions from harmful interference as defined in the applicable rules of the Commission.

Upon FCC approval of this Plan, Region 20 will announce to the Region that the initial window of 700 MHz public safety spectrum is available in the Region and that channels will be initially assigned on a geographical basis within phases, also known as "windows". All available methods will be used to notify public safety entities of channel availability in the Region (see Section 2.2).

For the initial allocation of channels, Region 20 supports the National Coordination Committee Pre-Assignment Rules and Recommendations listed in Appendix F and will use these guidelines as a template to determine if an application submitted to the Regional Planning Committee meets Regional Planning standards. However, the Region will modify the means of channel allocation in order to provide eligible licensees with the number of channels required to implement land mobile radio systems in the frequencies for which this Plan is responsible.

B. Notwithstanding the provisions of paragraph A, when in the opinion of any officer of Region 20 that it is in the best interest of the public safety communications community, applications for channels will be received and processed in compliance with the other provisions of this Plan.

C Applications for channels in Region 20 shall be submitted to the Chair of the Technical Committee.

D. In order to maintain accurate records in the CAPRAD database, applicants will provide Region 20 with physical copies of their application along with associated documentation for adjacent Regional Planning Committee review. Upon approval of an application, the Technical Committee will enter the FCC 601 form into the CAPRAD database before the application is forwarded to the FCC certified coordinators.

3.2 The Assignment of Priorities – from 47 CFR §90.527 (a)(4)

A. When applying for new 700 MHz channels, the Region's Technical Committee will prioritize the applications of 700 MHz applicants working with neighboring state and local government agencies to promote and/or continue the establishment of interoperability within their community. This strategy will consider national and regional security issues and promote the equitable distribution of existing spectrum allocations to realize efficient frequency use when applying for 700 MHz spectrum.

B. The Region has developed a scoring matrix to prioritize the recommendation of channels in the 700 MHz frequency band. Channels are first allocated to an eligible licensee through geographical assignments as generally contained in the modified CAPRAD table. In the event that spectrum allocation requests conflict and cannot all be accommodated, the following matrix will be used to determine priority for allotment.

1. Governmental first responder organizations and users fundamentally involved with the protection of life and property (up to 16 points)

2. Documentation of proposed funding to construct the system using these 700 MHz frequencies must be available and accompany the original spectrum request. (16 points)

3. Development of a new and interoperable trunked radio system available to all governmental and appropriate NGO units within a geographical area to enhance regional communications (14 points)

4. Users voluntarily reallocating or returning 800 MHz, UHF, and VHF frequencies for the use of other licensees (up to 14 points)

5. Users of P-25 compliant or other systems employing spectrally efficient digital trunking technologies (14 points)

6. The release of a RFP (Request for Proposal) or other procurement strategy outlining the design of the proposed system (13 points)

7. User agreement to return channels to the general pool if the proposed radio system is not constructed and substantially ready for operations within five (5) years of the Commission's approval of its license application (13 points)[3]

3.3 Stewardship of Adjunct Spectrum in Other Frequency Bands

When applying for 700 MHz channels, the Region will determine if the applicant is utilizing any channels in the 800 MHz and other bands. Upon an affirmative finding, the Region's Technical Committee will determine the applicant's plan for the continued use of currently licensed 800 MHz and other frequencies and administratively mandate the return of the to be vacated channels when appropriate. The return of channels will be appropriate when the applicant has no demonstrated need for the vacated channels after the 700 MHz channels have been implemented successfully, defined by the Region as one year after beneficial use of the new system. The purpose of this process is to maximize the total available pool of public safety spectrum to Region 20 in both 700 and 800 MHz. as well as other bands. The 700 MHz Technical Committee will alert its 800 MHz counterpart upon any recommendation promoting the eventual return of 800 MHz channels by a current licensee.

While important to maximize the availability of spectrum in all bands, the Region notes that it has no statutory authority under 47 CFR Part 90 to require the return of "to be" vacated channels. However, the Region can require that a responsible person within the applicant's organization provide a written statement certifying that the applicant intends to return the "to be" vacated channels within one (1) year after the new 700 MHz system is placed into post-acceptance service, also known as "beneficial use" for use by first responders. The Region's expectation is that the person submitting the letter of certification relative to the return of the "to be" vacated channels shall be the organization's chief administrative officer or other person having budgetary authority over the internal department of the applicant requesting the channels.

In the event that the applicant fails to return the vacated channels to the

[3] This differs from criteria 4 based upon the written submission of a pledge by a Chief Administrative Officer to return the channels to the general pool.

Commission for use by other applicants, the Region shall make a copy of the certification letter available to any eligible organization requiring the vacated channels for subsequent filing with the Commission.

3.4 Coordination with Adjacent Regions – from 47 CFR §90.527 (a)(5)

Region 20 recognizes the need to coordinate the development, review, and approval of the Plan with the adjacent Regions. Regions 28, 42, and 44 have convened and initiated the development for their 700 MHz Plans and throughout the development process, the Technical Committee of Region 20 has shared progress reports with the Chairs of these Regions. Region 36 has not convened a meeting of the 700 MHz RPC.

Even though Region 36 has not convened to formulate their plan, when the Region 20 Plan was completed intra-regionally, it was distributed to the Chairpersons of Regions 28, 42, and 44 as well as the Convener for Region 36 for review and action.

With respect to the on-going coordination of frequency applications upon approval of the Plan by the Commission, the Chair of the Region 20 Technical Committee shall distribute the request to all other agencies with allotments in the plan for review and approval electronically. Absent a legitimate protest that is consistent with the Commission's rules, the Regional Planning Committee will approve the application and submit it, through the CAPRAD database, to the applicant's preferred FCC-certified frequency coordinator for processing. This process meets the requirements of the FCC pursuant to 47 CFR §90.176 (c).

The Technical Committee Chairperson will be responsible to update the CAPRAD database to reflect the approved application and place the channels for the proposed system in "pre-license" status.

3.5 Use of the CAPRAD Pre-Assignment Table

The Region believes that the CAPRAD Pre-Assignment Table represents an appropriate strategy as the initial basis to assign channels in the first window of applications from within the Region. CAPRAD was established to ensure an appropriate distribution of channels on the basis of geographic population. Additionally, the channels were assigned to minimize the potential of co-channel and adjacent channel interference. However, CAPRAD did not differentiate the channel assignments based upon geographical areas already enjoying advanced digital trunked radio services in the 800 MHz band and contrast those assignments with users in highly populated areas utilizing older conventional technologies. It is the users of older conventional systems that may have the greatest need for spectrum to construct modern digital trunked radio systems.

As a principle, the Region will utilize CAPRAD as the fundamental basis to

make initial channel assignments to an eligible user within a geographic area. The Region recognizes and interprets the Commission's rules to permit the assignments of channels geographically and as an example, not to specific political entities such as a county government, but to any eligible user within a county. To illustrate further, if a CAPRAD assignment is to (hypothetical) Smith County, any eligible user within Smith County may apply for use of the channel as may be consistent with 47 CFR § 90 Subpart R. In the Commonwealth of Virginia and the City of Baltimore, channels shall be assigned to an independent city.

To ensure that channels have been allocated appropriately with respect to geographical areas within Region 20, the CAPRAD table of assignments will be utilized as a baseline from which assignments are initiated. Region 20 may reassign from the CAPRAD sort of channels a limited number of assignments provided that there is no harmful interference rendered to any other licensee in Region 20 or to a geographic area within an adjoining Regional Planning Committee's area of responsibility to which the channel has been assigned by CAPRAD and incorporated into that Region's Plan for 700 MHz.

If an eligible user in Region 20 requires more channels than are available within CAPRAD and the facts and circumstances of the user's request justify the channels, the Region will endeavor to meet the applicant's requirements provided that the applicant provides documentation to support the need for additional channels. The documentation shall be provided at the expense of the applicant and may include "Grade of Service" studies, proposed channel loading data, fleet maps, and other documents demonstrating the need for additional channels.

The Region believes that the most efficient use of spectrum curtails the arbitrary assignment of voice channels in four blocks of adjacent 6.25 KHz channels. As will be detailed in the Plan, the Region supports a "technology-neutral" strategy that permits an applicant to specify the spectral requirements of the proposed system which may deviate from the CAPRAD table of assignments. To minimize the likelihood of "orphan" channels, the Region will permit the appropriate exchange of CAPRAD-assigned channels between eligible users desiring 12.5 KHz assignments as consistent with Section 6.3 of this Plan.

The Commonwealth of Virginia is unique in the United States as it is the only state in which all cities are independent and not part of a county. With respect to the uniqueness of Virginia law relative to the independence of cities, it is entirely possible that a local government is the de facto owner of a window one channel assignment.

De facto use is determined when the licensee is:

1. The sole provider of law enforcement, fire, and EMS communications within the geographic area of operation, or

2. The principle provider of law enforcement, fire, and EMS communications within the geographical area of operation, or

3. If not the sole or principle provider of law enforcement, fire, and EMS communications within the geographical area of operation, the other eligible first responder organizations indicate to the Region that they do not intend to utilize the 700 MHz channels within the geographical area of operation.

When it is determined that de facto use is attributable to a specific licensee, the licensee may waive the use of a portion of, but not all channels, and permit their reassignment to another licensee provided that such reassignment does not result in harmful interference to any co-channel or adjacent channel licensee and is consistent with the provisions of Section 6.3 of this Plan.

3.6 Process for Requesting Channel Assignments

To request 700 MHz channels from Region 20, a full application package must be submitted to the Region's Technical Committee.

The application must include:

1. A FCC Form 601

2. A description of the proposed system, including proposed coverage maps, detailing users to be served and provisions for the provision of interoperability with adjoining and regional jurisdictions

3. A justification for the additional spectrum as well as proposed "give backs" of spectrum no longer required

4. An interference prediction map depicting 5, 40, and 60 dBu contours using the methodologies of TIA TSB 88 (most recent version) guidelines.

5. Maps showing all co and adjacent channel interference predicted in the proposed system and strategies to mitigate the anticipated interference.

6. Documents indicating agency-funding commitments sufficient to fund the development of the proposed system(s) and an indication as to when they will migrate from their existing system to the new system

7. A statement describing the strategy for the acquisition of the proposed system as well as the applicant's pledge to return the assigned spectrum if required pursuant to Section 3.2 B 7 of the Region 20 Plan

3.7 Allocation Disputes

An eligible licensee may protest a proposed system within 30 calendar days of the Window 1 notification. Protests will only be considered if the allocation does not conform to the Region 20 Plan or objecting agency or the Chairperson can show harmful interference is likely based on the information submitted by the agency requesting the new allocation. If an agency with pre-licensed/Region approved co-channel or adjacent channel allocations objects to a proposed allocation due to concerns about potential interference, the objecting agency may request field tests be done to confirm or refute interference potential. The completion of these field tests will be required for Regional application approval. Coverage area service/interference contours of the proposed system(s) should meet values designated in Section 6.1 of this document. Any costs associated with field tests or any other requirement to obtain Region 20 plan approval is the responsibility of the agency submitting the application to Region 20.

The parties involved must resolve the allocation dispute pursuant to the Plan and notify the Region Chair of such resolution within 30 calendar days. If the parties involved cannot resolve the allocation dispute within that timeframe, then a special full Committee meeting will be scheduled to consider and vote on the protest. If approved, the application will be submitted through the CAPRAD database to the applicant's chosen FCC-certified frequency coordinator for processing

3.8 Lower Power "Campus Eligible" General Use Channels

With the implementation of 700 MHz public safety spectrum throughout Region 20, there may be opportunities for increased channel reuse when developing radio systems for "campus" type operations. Examples of those who may capitalize on this opportunity include hospitals, stadiums, malls, or other places of public gathering, universities, transit systems, and ports. While these channels have been designated in jurisdictional pool allotments with proper designations, they do not enjoy the benefits of wide area channels in that they are not cleared for usage over a wide area. In many instances, 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 a maintenance or right of way. Public safety channels can be allotted to this type operation in a Region and can lead to effective system development, along with increased spectral efficiency, if power levels and Area of Protection (AOP) of the area are taken into account in system planning. These parameters must be established appropriate to the area of coverage. In order to facilitate this effective method of system implementation, channels have been identified in certain areas of Region 20 that may be utilized in a smaller service area. These channels may not be eligible to be utilized throughout the jurisdiction to which they are allotted and the following criteria

must be adhered to when requesting channels from Region 20 for operations of this type:

A. The 50dBu service contour of the proposed system must not exceed an area more than 2 miles from the proposed service area. When this 2-mile distance extends to an adjacent Region, the applicant must obtain concurrence from the adjacent Region. Reduced external antenna height, along with reduced effective radiated power (ERP), directional antennae, distributed antenna systems, and radiating "leaky coax," are all tools that should be utilized in the development of these type systems.

B. Region 20 will ensure that the development of these types of systems will in no way interfere with co-channel or adjacent channel users within Region 20 or Region 20's adjacent neighbors. The Chairperson of the Region or its Technical subcommittee, or a majority of the members of the Region, has the authority to request and require engineering studies from the applicant that indicates no harmful interference will be introduced to any co-channel or adjacent channel existing user prior to application approval.

C. For 12.5/25 kHz co-channel assignments, the 50dBu service contour of the proposed stations will be allowed to extend beyond the defined service area for a distance no greater than 2 miles. An adjacent/alternate 12.5/25 kHz channel shall be allowed to have its 60 dBμ (50, 50) contour touch, but not overlap the 40dBμ service (50, 50) contour of an adjacent/alternate system being protected. Evaluations should be made in both directions to ensure compliance. The approval of systems utilizing jurisdictional allotment channels labeled "Campus" is subject to approval of the Region 20 700 MHz regional planning committee. They are the final authority on parameters associated with "campus" type operations.

If Region 20 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. Through the modifications, the service contour shall not encroach into the adjacent Region unless the applicant provides the Region 20 Planning Committee with written concurrence from the adjacent Region permitting the original design.

3.9 Management of Channel Assignments

The Region 20 Plan requires that prior to request for approval to use channels, the licensee must be actively preparing for the development of a 700 MHz radio system. Attributes of the licensee's intent to use the channels includes but is not limited to:

A. Completion of a Needs Assessment study documenting the need for channels in the 700 MHz band and/or

B. Development and/or issuance of a Request for Proposals (RFP) or other procurement document designed to acquire a 700 MHz land mobile radio system and/or

C. Approval of funding for the radio project

D. A specific timetable for the system resulting in a target date for placing the system on the air

Pursuant to 47 CFR § 90.551 (Construction requirements), each station 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. However, licensees may request a longer construction period, up to but not exceeding 5 years, pursuant to 47 CFR § 90.155(b).

In the event that a licensee has not taken substantial steps to implement the 700 MHz radio system in accordance with the provisions of this section of the Plan, Region 20 reserves the right to support the return the channels to the general pool for reassignment to other licensees.

Notwithstanding the provisions above and as consistent with the Commission's rules, the Region's administrative approval of channels shall not be rescinded until the licensee has been notified of such intent to withdraw Regional support for use of channels ninety (90) days prior to such action. The licensee shall be afforded an opportunity to request in writing an extension of time to maintain Regional support related to use of the channels, provided such request for extension is in conformance with the Commission's rules. Such request shall detail the justifications for maintaining the channels and indicate when such channels shall be placed on the air for the purposes of testing or operations.

Once notified by the Region of its intent to rescind support for use of the channels, the burden is placed upon the licensee to request in writing an extension of time. If the licensee does not file such an extension within ninety (90) days of notice issuance or if the request of the licensee is determined by the Region to be without merit, the Region will support return of channels to the general pool at the end of the ninety (90) day notice period.

3.10 Limitations of Channel Assignments

Region 20 is located in a highly populated area of the United States and the number of channels available is extremely constrained. To that end, the Region pledges to use its authority to the fullest in the management of spectrum within its authority. Notwithstanding the preceding statements of the Plan, an eligible licensee shall be afforded only the number of channels as needed for the appropriate operation of a land mobile radio system within the constraints of 47 CFR §90 Subpart R (as amended by the Second Report and Order).

The Region recognizes past practices that permitted the slow growth of 800 MHz radio systems. With respect to the cost of modern digital trunked radio systems employing the 700 MHz frequency band, the Region anticipates that new networks may not require the slow growth practices of the past. Accordingly, the Region will generally assign a channel (one 6.25 KHz transmit frequency with paired 6.25 KHz receive frequency) per one hundred (100) proposed users.

In extraordinary circumstances, the Region's Technical Committee may consider a "slow growth" approach and assign one channel pair per seventy (70) proposed users. If a program of slow growth is permitted, the Technical Committee shall establish annual reporting requirements as well as the applicant's progress in reaching the standard level of one (1) channel pair per one hundred (100) users.

For the purpose of defining the number of channels available to a licensee, a radio may be a mobile or portable subscriber device. Channel loading will be calculated on a 1:1 basis. As an example, an applicant purchasing 1,000 mobiles and 1,000 portables shall qualify for twenty (20) channels or "voice paths"[4]. Utilizing a 12.5 KHz technology, this assignment would yield ten (10) operating frequencies. Conversely, a 25 KHz technology would produce five (5) operating frequencies.

3.11 Detailed Description of How Region 20 Maximized Spectrum – from 47 CFR §90.527 (a)(6)

The Region is very cognizant of the need to utilize spectrum efficiently. Of equal importance, the Region believes that the assignment of spectrum should be "technology neutral" and tailored to the requirements of the applicant. The Region takes note of the fact that the United States Department of Homeland Security has adopted the Project 25 (P-25) standard as the preferred technological standard for public safety radio systems. With a preponderance of federal, state, and other critical infrastructure in Region 20 and the fact that member jurisdictions within the Region have already experienced the impact of terrorism, the Region appreciates and supports the need for public safety interoperability that is manifested in the P-25 standard.

[4] Voice path as defined in 47 CFR §90.535 (d)(1)

P-25 FDMA systems utilize "one-half" blocks or 12.5 KHz channels as opposed to the 25 KHz "full" blocks of channels contained with the CAPRAD assignments. 12.5 kHz TDMA systems employ two 6.25 KHz equivalent channels. To arbitrarily assign 25 KHz blocks of channels to applicants developing P-25 Frequency Division Multiple Access (FDMA)[5] or TDMA compliant systems potentially results in a waste of spectrum and the creation of orphan channels. To avoid the creation of orphan channels and equally, to maximize the spectrum available to Region 20 users, the Plan calls upon the Technical Committee to assign channels based upon the applicant's proposed technology reflecting the vendor neutral philosophy of the Region.

As indicated in Section 3.5 of the Region's Plan, CAPRAD will be the initial basis upon which channels are assigned. When only two of the four consecutive channels in CAPRAD are required, the Technical Committee will assign the remaining channels to another applicant provided that the Commission's rules relative to co-channel and adjacent channel interference are observed. Similarly, when four (4) consecutive 6.25 KHz equivalent channels are requested by an applicant, the Technical Committee will utilize the full CAPRAD assignment pursuant to this Plan.

In the event that all potential applicants within a geographical area plan to utilize a P-25 technology or waive claim to the assigned channels during the first assignment window, the Technical Committee may assign the channels to another geographical area or applicant pursuant to Section 6.3 of this Plan. As an example, the City government of Alexandria, VA is the sole (de facto) potential applicant for the channels assigned to the geographical region in which it is located as it is the only provider of emergency services. If the City of Alexandria waives the use of the channels, the Technical Committee may reassign a portion of the channels to another geographical area in need of channels pursuant to the restrictions described in Section 6.3 of the Plan.

Equally, if the City of Alexandria, continuing with the example above, elected to only utilize two (2) of the four (4) CAPRAD 6.25 KHz channels for a P-25 system, the Technical Committee may reuse the remaining channels in another geographical area to prevent harmful adjacent channel interference to the P-25 system again pursuant to the provisions of Section 6.3 of this Plan.

To manage further the 700 MHz spectrum under the jurisdiction of Region 20, the Plan encourages strongly the use of digital trunked and other spectrum efficient technologies. The Region's preference for spectral efficient technologies is incorporated into the Plan as part of Section 3.2 B 3 which incorporates points within the decision making matrix for the review of applications. Similarly, the Plan awards points when a system is designed to support the users from multiple jurisdictions.

[5] The Plan recognizes that the use of FDMA technology would be limited pursuant to 47 CFR §90.535 (d)(1) and 47 CFR §90.535 (d)(2)

The Plan recognizes that due to the complexity of regional requirements for interoperability as well as the maturity of typical system management personnel, virtually all requests coming to the Technical Committee will relate to requirements in support of relatively sophisticated communications systems.

Region 20
Trunked Radio Systems

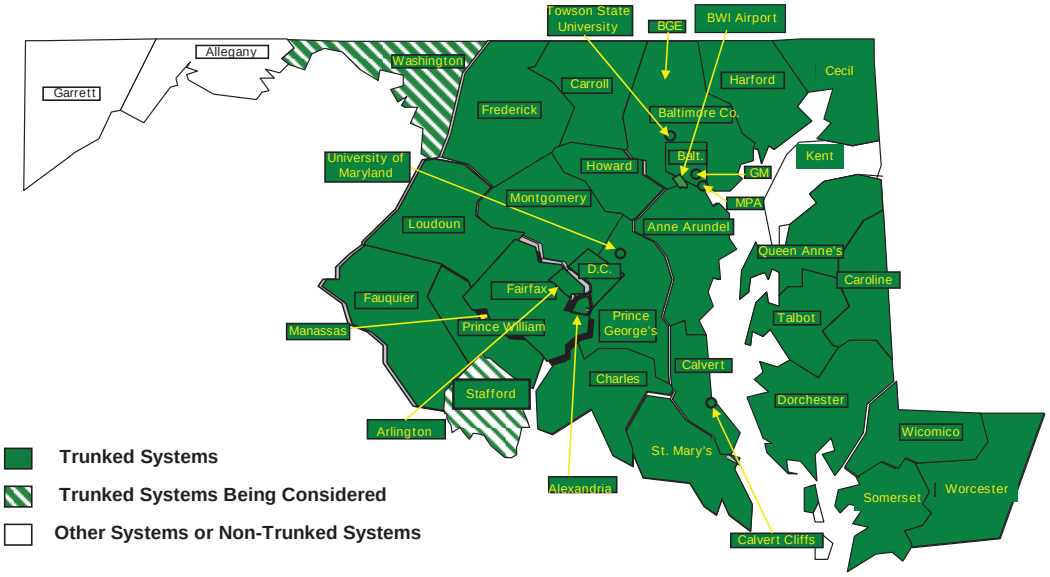


Figure 1 - Trunked Radio Systems in Region 20

To support the requirements of Region 20, a comprehensive planning process for both voice and data channels has been adopted and is reflected in the process flow chart labeled as Figure 1 below.

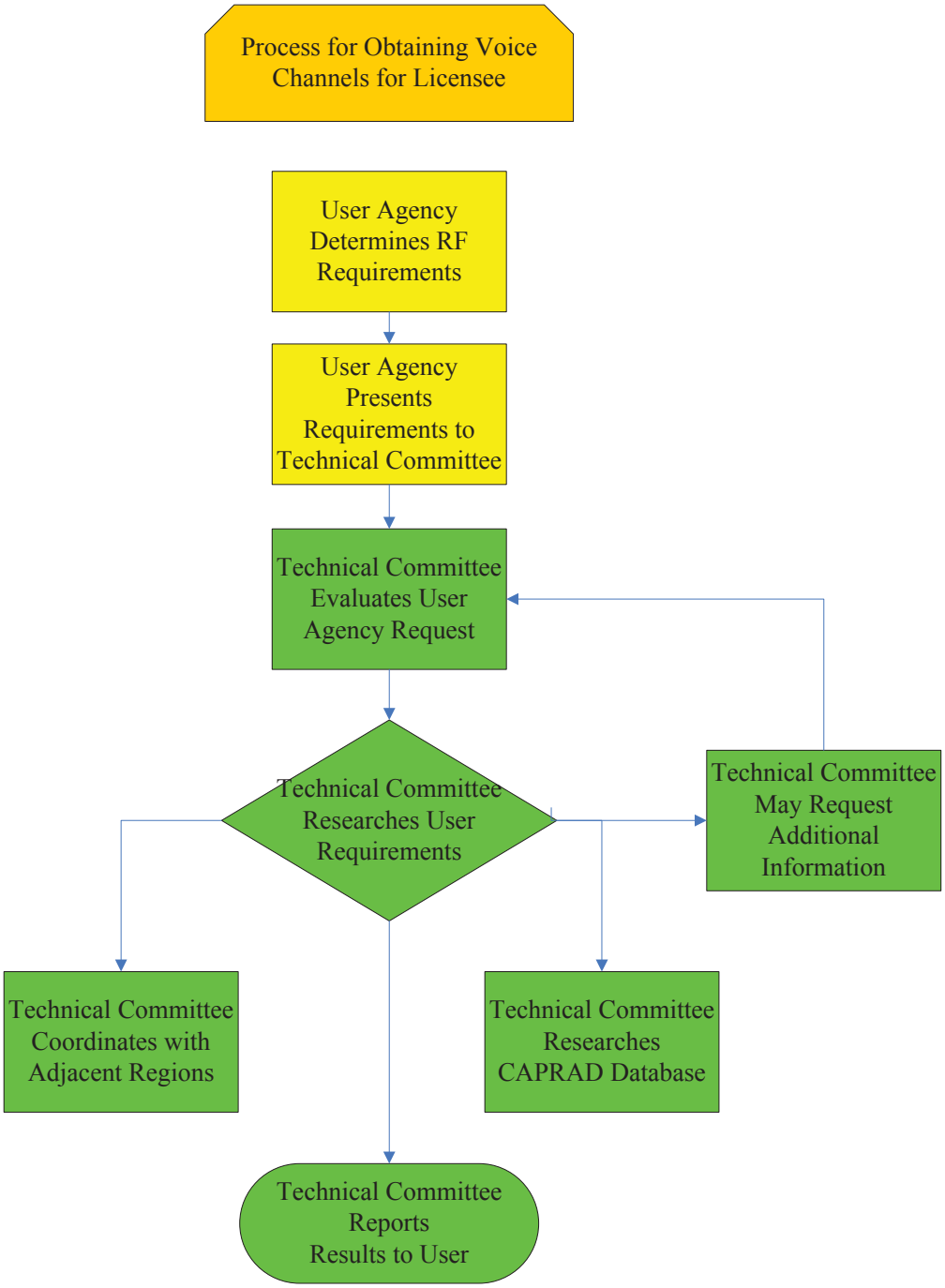


Figure 2
Process for Evaluating User Applications for Voice Channels

3.12 Low Power Channels

The Plan provides 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 6.25 KHz channels as contained in 47 CFR §90.531(b)(3) and 47 CFR §90.531(b)(4) to yield a 12.5 KHz simplex operating frequency employing a RF output power as specified by the Commission. In the repeater mode, four 6.25 KHz 700 MHz channels shall be combined to yield a 12.5 KHz transmit and 12.5 KHz receive frequency.

Use within the Region

~~Low-power 700 MHz frequencies are limited to transmissions with the effective radiated power (ERP) not to exceed two (2) watts.~~ These frequencies can be used at the broad discretion of eligible users in one of two methodologies, direct radio-to-radio or simplex operation and as an Incident Area Network (IAN) or other low power technology providing a repeater capability. The use of these frequencies for official public safety or public service communications is permitted by a single public safety agency or 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

First responders 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 on site at the scene of the incident 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 or digital operations will be utilized. Analog operations will utilize the 11K0F3E emission type. Digital operations shall utilize the 8K10F1E emission type. Members of Region 20 may use both types of emissions if licensed for same.

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.

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 in 47 CFR §90.523.

Repeater/Incident Area Network Operation

From the Department of Homeland Security SAFECOM Statement of Requirements[6],

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

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. "7TAC21 meaning 700 MHz (7) Tactical (TAC) Frequency with Repeater (2) frequency 1 (1).~~

Freq. Name	Repeater TX	Repeater RX	Applicable Service
LOWTAC1R	Channels 1-2	Channels 961-962	Generic Public Safety/Service
LOWTAC2R	Channels 3-4	Channels 963-964	Generic Public Safety/Service
LOWTAC3R	Channels 957-958	Channels 1917-1918	Generic Public Safety/Service
LOWFIR1R	Channels 5-6	Channels 965-966	Fire
LOWFIR2R	Channels 7-8	Channels 967-968	Fire
LOWMED1R	Channels 949-950	Channels 1909-1910	EMS
LOWMED2R	Channels 951-952	Channels 1911-1912	EMS
LOWLAW1R	Channels 953-954	Channels 1913-1914	Law Enforcement
LOWLAW2R	Channels 955-956	Channels 1915-1916	Law Enforcement

Freq. Name	Subscriber TX	Subscriber RX	Applicable Service (Notes)
LOWTAC1R	Channels 961-962	Channels 1-2	Generic Public Safety/Service
LOWTAC2R	Channels 963-964	Channels 3-4	Generic Public Safety/Service
LOWTAC3R	Channels 1917-1918	Channels 957-958	Generic Public Safety/Service
LOWFIR1R	Channels 965-966	Channels 5-6	Fire (1)
LOWFIR2R	Channels 967-968	Channels 7-8	Fire (1)
LOWMED1R	Channels 1909-1910	Channels 949-950	EMS (2)
LOWMED2R	Channels 1911-1912	Channels 951-952	EMS (2)
LOWLAW1R	Channels 1913-1914	Channels 953-954	Law Enforcement (3)
LOWLAW2R	Channels 1915-1916	Channels 955-956	Law Enforcement (3)

(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.

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).~~

Name	Channels	Use (Notes)
LOWTAC1	Channels 1-2	Generic Public Safety/Service
LOWTAC2	Channels 3-4	Generic Public Safety/Service
LOWTAC3	Channels 957-958	Generic Public Safety/Service
LOWFIR1	Channels 5-6	Fire Incident Management (1)
LOWFIR2	Channels 7-8	Fire Incident Management (1)
LOWMED1	Channels 949-950	EMS (2)
LOWMED2	Channels 951-952	EMS (2)
LOWLAW1	Channels 953-954	Law Enforcement (3)
LOWLAW2	Channels 955-956	Law Enforcement (3)

(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.

3.13 ~~Wideband/Broadband Data~~ Uniform Nationwide Channel Naming

Region 20 is cognizant that the American National Standards Institute ("ANSI") along with APCO and the National Public Safety Telecommunications Council are examining the identification of uniform names for low power and additional interoperability channels. Region 20 will modify all appropriate channel nomenclature to comply with the ANSI certified names.

~~***Pursuant to the Second Report and Order, Docket WT 96-86, Region 20 notes that the former "wideband" channels have been reallocated by the Commission to a single nationwide public safety broadband licensee. Region 20 has deleted the former wideband assignments from the CAPRAD database. Region 20 will***~~

~~***take no action relative to these frequencies except as may be required by the Commission.***~~

~~Notwithstanding the above, the Region acknowledges and will comply with the Commission's order in DA 07-454 adopted January 31, 2007 relative to the National Capital Region's Regional Wireless Broadband Network (RWBN).~~

3.14 Dispute Resolution - Intra-Regional

In the event an agency disputes the implementation of this plan or the Federal Communications Commission approval of this plan or parts of this plan, the disputing agency representative must notify the Chair of the Region in writing. This section does not apply to protests over new spectrum allocations. The Chair will attempt to resolve the dispute on an informal basis.

If after 30 days the dispute is not resolved, the Chair (or Vice Chair) will appoint a Dispute Resolution Committee consisting of a member from the State of Maryland or the District of Columbia or the Commonwealth of Virginia and at least three additional members from the jurisdictions in Region 20. That committee will select a Chair to head the committee.

The Regional Plan Chair (or Vice Chair) will represent the Region in presentations to the Dispute Resolution Committee. The Committee will hear input from the disputing agency, any effected agencies, and the Region Chair. The Committee will then meet in executive session to prepare a recommendation to resolve the dispute. Should this recommendation not be acceptable to the disputing agency/agencies, the dispute and all written documentation from the dispute will be forwarded to the National Planning Oversight Committee for dispute resolution. As a last resort, the dispute will be forwarded to the Federal Communications Commission for final resolution.

See Appendix J for dispute resolution procedures.

3.15 Conflict of Interest

If a party to the dispute has a conflict of interest through his/her employment in any matter before the Region, the Chair or Vice Chair will attempt resolution. If the Chair has a conflict of interest, he/she will be precluded from voting on such matters.

3.16 Protection of TV/DTV stations

Region 20 anticipates that no licensees will begin operations until after February 18, 2009. Should there be an application with anticipated operation prior to February 18, 2009, the licensee will be required to protect existing television and digital television stations as required in 47 CFR §90.545.

Additional information is contained in Appendix K.

3.17 47 CFR §90.545 TV/DTV Interference Protection Criteria

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.

(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

The transition period is scheduled to end on December 31, 2006. After that time, unless otherwise directed by the Commission, public safety stations will no longer be required to protect reception of co-channel or adjacent channel TV/DTV stations.

1. Licensees of stations operating within the ERP and HAAT limits of paragraph (b) must select one of three methods to meet the TV/DTV protection requirements, subject to Commission approval:

    a. utilize the geographic separation specified in the tables referenced below;

    b. submit an engineering study justifying the proposed separations based on the actual parameters of the land mobile station and the actual parameters of the TV/DTV station(s) it is trying to protect; or,

    c. obtain written concurrence from the applicable TV/DTV station(s). If this method is chosen, a copy of the agreement must be submitted with the application.

2. The following is the method for geographic separations.

    a. Base stations having an antenna height (HAAT) less than 152 m. (500 ft.) shall afford protection to co-channel and adjacent channel TV/DTV stations in accordance with the

values specified in Table B (co-channel frequencies based on 40 dB protection) and Table E (adjacent channel frequencies based on 0 dB protection) in Sec. 90.309 of this part. For base stations having an antenna height (HAAT) between 152-914 meters (500-3,000 ft.) the effective radiated power must be reduced below 1 kilowatt in accordance with the values shown in the power reduction graph in Figure B in Sec. 90.309 of this part. For heights of more than 152 m. (500 ft.) above average terrain, the distance to the radio path horizon will be calculated assuming smooth earth. If the distance so determined equals or exceeds the distance to the hypothetical or equivalent Grade B contour of a co-channel TV/DTV station (i.e., it exceeds the distance from the appropriate Table in Sec. 90.309 to the relevant TV/DTV station) an authorization will not be granted unless it can be shown in an engineering study (method 2) that actual terrain considerations are such as to provide the desired protection at the actual Grade B contour (64 dB[mu]V/m for TV and 41 dB[mu]V/m for DTV stations), or that the effective radiated power will be further reduced so that, assuming free space attenuation, the desired protection at the actual Grade B contour (64 dB[mu]V/m for TV and 41 dB[mu]V/m coverage contour for DTV stations) will be achieved. Directions for calculating powers, heights, and reduction curves are listed in Sec. 90.309 for land mobile stations. Directions for calculating coverage contours are listed in Sec. Sec. 73.683-685 for TV stations and in Sec. 73.625 for DTV stations.

b. Control and mobile stations (including portables) are limited in height and power and therefore 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) in Sec. 90.309 of this part and 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 stations and--23 dB for DTV stations). Since control and mobile stations may affect different TV/DTV stations than the associated base station, particular care must be taken by applicants to ensure that all the appropriate TV/DTV stations are considered (e.g., a base station may be operating on TV Channel 64 and the mobiles on TV Channel 69, in which case TV Channels 63, 64, 65, 68, and

69 must be protected). Since 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.

c. In order to protect certain TV/DTV stations and to ensure protection from these stations which may have extremely large contours due to unusual height situations, an additional distance factor must be used by all public safety base, control and mobile stations. For all co-channel and adjacent channel TV/DTV stations which have an HAAT between 350 and 600 meters, public safety stations must add the following DISTANCE FACTOR to the value obtained from the referenced Tables in 47 CFR §90.309 and to the distance for control and mobile stations on adjacent TV/DTV channels (96.5 km).

DISTANCE FACTOR = (TV/DTV HAAT-350) / 14 in kilometers, where HAAT is the TV or DTV station antenna height above average terrain obtained from its authorized or proposed facilities, whichever is greater.

d. For all co-channel and adjacent channel TV/DTV stations which have an antenna height above average terrain greater than 600 meters, public safety stations must add 18 kilometers as the DISTANCE FACTOR to the value obtained from the referenced Tables in 47 CFR §90.309 and to the distance for control and mobile stations on adjacent TV/DTV channels (96.5 km).

Note 47 CFR §90.545: The 88.5 km (55.0 mi) Grade B service contour (64 dB[mu]V/m) is based on a hypothetical TV station operating at an effective radiated power of one megawatt, a transmitting antenna height above average terrain of 610 meters (2000 feet) and the Commission's R-6602 F(50,50) curves. See Sec. 73.699 of this chapter. Maximum facilities for TV stations operating in the UHF band are 5 megawatts effective radiated power at an antenna HAAT of 610 meters (2,000 feet).

See Sec. 73.614 of this chapter. The equivalent contour for DTV stations is based on a 41 dB[mu]V/m signal strength and the distance to the F(50,90) curve. See Sec. 73.625 of this chapter.

4.0 Process for Handling Unformed Regions

All adjoining Regional Planning Committees have been formed and submitted 700 MHz Plans to the Commission.

~~Only Regional Planning Committee 36 has not convened. Region 20 took the following actions regarding Region 36.~~

~~A. A copy of the draft Region 20 Plan for 700 MHz has been shared with the convener for Region 36.~~

~~B. A copy of the draft Region 20 Plan in Adobe PDF format has been placed on the CAPRAD site for the review of members of Region 36.~~

~~Because Region 36 has not convened and there are no plans to convene prior to the submission of the Region 20 Plan for 700 MHz, the Region has requested a waiver of 47 CFR §90.527(a)(5).~~

~~**From:** Richard Matason [mailto:rmatason@wpa.net]~~
~~**Sent:** Friday, June 30, 2006 1:10 PM~~
~~**To:** cbryson@rcc.com~~
~~**Subject:** RE: Region 20 Plan for 700 MHz~~

~~Charles~~

~~This information is correct for Region 36.~~

~~Regards~~

~~Rich~~

~~-----Original Message-----~~
~~**From:** Charles Bryson [mailto:cbryson@rcc.com]~~
~~**Sent:** Wednesday, June 21, 2006 1:46 PM~~
~~**To:** Rmatason@co.westmoreland.pa.us; 'Dave Saffel'~~
~~**Cc:** 'Ryan, G. Edward'; wmcbride@co.pg.md.us; Gary McKelvey~~
~~**Subject:** Region 20 Plan for 700 MHz~~

~~Several months ago I contacted you on behalf of Region 20 and learned that Region 36 had not formed a Planning Committee for 700 MHz. Please advise if that information remains correct as Region 20 will be considering a draft of its plan on August 14 and potentially will be ready to file the Plan soon thereafter. Pursuant to the provisions of 47 CFR § 90 Subpart R, the Region must advise the Commission of adjacent Regions that have not convened at the time of submission.~~

5.0 Coordination with Adjacent Regions

The Regions adjacent to Region 20 are listed below:

Region 28 - Delaware, southern New Jersey, and eastern Pennsylvania
Regional Chairman
Pennsylvania - Eastern (east of Harrisburg, southern NJ and DE)
Richard R. Reynolds, State of Delaware - DTI
801 Silver Lake Boulevard
Dover, DE 19904-2407
PH: 302-739-9648
FX: 302-739-7243
Email: Richard.Reynolds@state.de.us

Region 36 - Western Pennsylvania ~~Regional Convener~~
Richard Matason
911 Public Safety Drive
Greensburg, PA 15601
PH: 724-600-7301
FX: 724-600-7388
Email: Rmatason@co.westmoreland.pa.us

Region 42[7] - Commonwealth of Virginia except cities and counties in Northern Virginia assigned to Region 20

Regional Chairman
Virginia (Except Northern Virginia)
Tom Hanson, Emergency Communications Center
2306 Ivy Road
Charlottesville, VA 22903
PH: 434-971-1765
Email: Thomas@Albemarle.org

Region 44 - West Virginia
Regional Chairman, West Virginia
David W. Saffel
Chief Engineer
West Virginia State Police
1300 Harrison Ave.
Elkins, WV 26241
PH: 304-637-0200
FX: 304-637-0203
email: dsaffel@wvsp.state.wv.us

[7] The Region 20 Plan was approved by Mr. Thomas Hanson representing Region 42. In July of 2007, Mr. Robert DeLauney became the Region 42 (700 MHz) Chair and approved the Region 20 Amendment required by the 2nd Report & Order.

Preliminary contact has been made with every adjoining Region. The following is the status of the Region 20 adjoining 700 MHz Committees.

Region 28 – Committee formed and actively engaged in the creation of its Plan

Region 36 – Not convened

Region 42 – Committee formed and actively engaged in the creation of its Plan

Region 44 – Committee formed

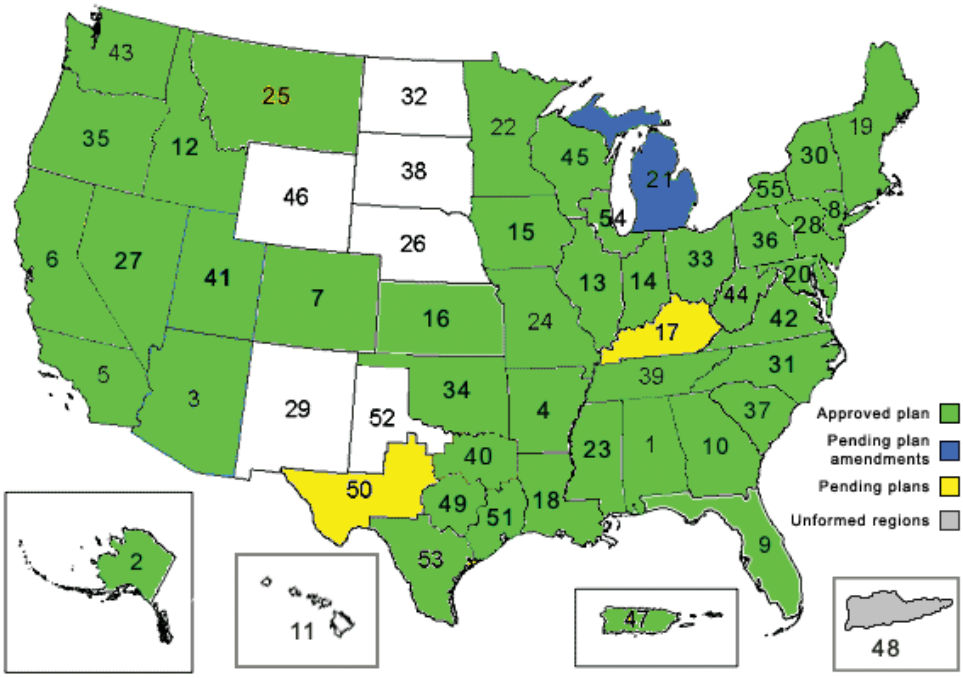


Figure 3 - Regional Planning Committees

REGION 28 - 700 MHz REGIONAL PLANNING COMMITTEE

EASTERN PENNSYLVANIA, SOUTHERN NEW JERSEY, and DELAWARE

Department of Technology & Information
Telecommunications Team
801 Silver Lake Blvd.
Dover, DE 19904-2407

Richard R. Reynolds, Chairman — **VOICE: (302) 739-9648 FAX: (302) 739-7243**
Raymond J. Hayling, II, Vice Chairman — **VOICE: (609) 984-6995 FAX: (609) 633-0557**
Laurie R. Bailey, Secretary — **VOICE: (610) 782-3087 FAX: (610) 782-3428**

June 1, 2007

Regional Planning Committee 20
Mr. G. Edward Ryan II, Chairperson
Department of Natural Resources
580 Taylor Avenue, E-4
Annapolis, MD 21401

Sent Via Email and US Mail

RE: Region 28 concurrence with Region 20's 700 MHz plan

Dear Mr. Ryan,

I am writing you in my capacity as the Chairman for Regional 28 Planning Committee.

Region 28 (Eastern PA, Southern NJ and Delaware) concurs with the Region 20 (District of Columbia, Maryland and Northern Virginia) 700 MHz plan. Region 28 has reviewed the 700 MHz Plan submitted by Region 20, and is satisfied that the plan was based on the CAPRAD Channel Assignment Model, which takes into account the necessary considerations to coordinate with adjacent regions.

Region 28 looks forward to working with Region 20 in coordination of 700 MHz and other spectrum issues in the future.

Please contact me if you have any questions on this concurrence.

Sincerely,

Richard R. Reynolds

Richard R. Reynolds, Chairman
Region 28 – 700 MHz RPC

RRR/self

Cc: Gary McKelvey, R-20 Vice Chairman - via Email only
Wayne McBride, R-20 Technical Committee Chairman - via Email only
Craig Fetzer, R-20 Operations Committee Chairman - via Email only

Charlottesville-UVA-Albemarle County
Emergency Communications Center

April 18, 2007

Mr. G. Edward Ryan II, Chairperson
Regional Planning Committee 20
Department of Natural Resources
580 Taylor Avenue, E-4
Annapolis, MD 21401

RE: Region 42 concurrence with Region 20's 700 MHz plan

Dear Mr. Ryan,

I am writing you in my capacity as the Chairman for Regional Planning Committee 42.

Region 42 (Virginia) concurs with the Region 20 (District of Columbia, Maryland and Northern Virginia) 700 MHz plan. Virginia Region 42 has reviewed the 700 MHz Plan submitted by Region 20, and is satisfied that the plan takes into account the necessary considerations to coordinate with adjacent regions.

Region 42 looks forward to working with Region 20 in coordination of 700 MHz and other spectrum issues in the future.

Please contact me if you have any questions on this concurrence.

Sincerely,

Tom Hanson

Tom Hanson, Chairman
700 MHz Committee of Region 42

cc: Gary McKelvey, Communications System Supervisor, Loudoun County VA

Region 44 – West Virginia
700 MHz Regional Planning Committee

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

November 27, 2006

G. Edward Ryan, II, Chairman
c/o Maryland Department of Natural Resources
580 Taylor Avenue, E-4
Annapolis, Maryland 21401

Dear Mr. Ryan:

My apologies for not replying to your request to review Region 20'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 20 700 MHz regional plan, and concurs with it.

Sincerely,

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

Inter-Regional Coordination Procedures
and
Procedures for Resolution of Disputes
That May Arise Under FCC Approved Plans

I. INTRODUCTION - COORDINATION PROCEDURES

This is a mutually agreed upon Inter-Regional Coordination Procedures Agreement (Agreement) by and between the following 700 MHz Regional Planning Committees; Region 20, Region 28, Region 42, and Region 44 hereinafter known as the "Regions".

II. INTER-REGIONAL COORDINATION AGREEMENT

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

A. An application filing window is opened or the Region announces that it is prepared to begin accepting applications on a first-come/first-served basis.

B. Applications by eligible entities are accepted.

C. An application filing window (if this procedure is being used) is closed after appropriate time interval.

D. Intra-regional review and coordination takes place, including a technical review resulting in assignment of channels.

E. After intra-regional review, a copy of those frequency-specific applications requiring adjacent Region approval, including a definition statement of proposed service area, shall then be forwarded to the adjacent Region(s) for review. [1] This information will be sent to the adjacent Regional chairperson(s) using the CAPRAD database.

[1] If an applicant's proposed service area or interference contour extends into an adjacent Public Safety Region(s), the application must be approved by the affected Region(s). Service area shall normally be defined as the area included within the geographical boundary of the applicant, plus three (3) miles. Interference contour shall normally be defined as a 5 dBu co-channel contour or a 60 dBu adjacent channel contour. Other definitions of service area or interference shall be justified with an accompanying *Memorandum of Understanding (MOU)* or other application documentation between agencies, i.e. mutual aid agreements.

F. The adjacent Region reviews the application. If the application is approved, a letter of concurrence shall be sent, via the CAPRAD database, to the initiating Regional chairperson within thirty (30) calendar days.

III. DISPUTE RESOLUTION

If the adjacent Region(s) cannot approve the request, the adjacent Region shall document the reasons for partial or non-concurrence, and respond within 10 (ten) calendar days via email. If the applying Region cannot modify the application to satisfy the objections of the adjacent Region then, a working group comprised of representatives of the two Regions shall be convened 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 chairperson's email (CAPRAD database). Findings may include, but not be limited to:

A. Unconditional concurrence

B. Conditional concurrence contingent upon modification of applicant's technical parameters; or

C. 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)[2], of the National Public Safety Telecommunications Council.

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 database. The NPOC's decision may support either of the disputing Regions or it may develop a proposal that it deems mutually advantageous to each disputing Region.

Where adjacent Region concurrence has been secured, and the channel assignments would result in no change to the Region's currently Commission approved channel assignment matrix. The initiating Region may then advise the applicant(s) that their application may be forwarded to a frequency coordinator for processing and filing with the Commission.

[2] The Regional Plan Oversight Committee (RPOC) is a committee within the National Public Safety Telecommunications Council (NPSTC) established to arbitrate disputes between 700 MHz Regions that cannot be resolved by the impacted Regions.

Where adjacent Region concurrence has been secured, and the channel assignments would result in a change to the Region's currently Commission approved channel assignment matrix, then the initiating Region shall file with the Commission a *Petition to Amend* their current Regional plan's frequency matrix, reflecting the new channel assignments, with a copy of the *Petition* sent to the adjacent Regional chairperson(s).

Upon Commission 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 then advise the applicant(s) that they may forward their applications to the frequency coordinator for processing and filing with the Commission.

IV. CONCLUSION

IN AGREEMENT HERETO, Regions 20, 28, 42, and 44 do hereunto set their signatures the day and year first above written.

Respectfully,

Name of Regional Chair	Region	Date
G. Edward Ryan, II	20	
Richard R. Reynolds	28	June 19, 2007
Tom Hanson	42	
David W. Saffel	44	

/s/ *G. Edward Ryan, II*

Name of Regional Chair	Region	Date
G. Edward Ryan, II	20	21 Sept 2006
Richard R. Reynolds	28	
Tom Hanson	42	4-18-07
David W. Saffel	44	

Name of Regional Chair	Region	Date
G. Edward Ryan, II	20	21 Sept. 2006
Richard R. Reynolds	28	
Tom Hanson	42	
David W. Saffel	44	15 November 2006

5.1 Amendment Process and Concurrences Required by the Second Report and Order

Region 20 submitted the Plan for 700 MHz through the Commission's Electronic Comments and Filing System pursuant to Docket WT 02-378 on June 27, 2007. On July 31, 2007, the Commission issued the Second Report and Order (2nd R&O – FCC 07-132). Paragraph 346 of the 2nd R&O required certain changes in 700 MHz Plans already approved or submitted to the Commission by the respective Regional Planning Committee.

The Region 20 Plan for 700 MHz was amended as required by the 2nd R&O and presented to the membership on August 29, 2007. The amended Plan was approved by the Region's members unanimously.

The Region 20 Plan was submitted to the Commission before the original due date of November 23, 2007. However, the Plan was withdrawn by the Region to comply with the coordination requirements of the Commission. As required by 47 CFR § 90.527(b), Region 20 submitted the Amended 700 MHz Plan to the adjoining regions for concurrence. Those concurrences are presented on the following pages.

This amended Plan is being submitted on July 31, 2013 in compliance with the newly revised 47 CFR § 90.527(b) in the belief that all proposed changes are "minor" and do not require prior coordination with the adjoining Regional Planning Committees.

REGION 28 - 700 MHz REGIONAL PLANNING COMMITTEE

EASTERN PENNSYLVANIA, SOUTHERN NEW JERSEY, and DELAWARE

Department of Technology & Information
Telecommunications Team
801 Silver Lake Blvd.
Dover, DE 19904-2407

Richard R. Reynolds, Chairman — **VOICE: (302) 739-9648 FAX: (302) 739-7243**
Raymond J. Hayling, II, Vice Chairman — **VOICE: (609) 984-6995 FAX: (609) 633-0557**
Laurie R. Bailey, Secretary — **VOICE: (610) 782-3087 FAX: (610) 782-3428**

November 19, 2007

Regional Planning Committee 20 — *Sent Via Email*
Mr. G. Edward Ryan II, Chairperson
Department of Natural Resources
580 Taylor Avenue, E-4
Annapolis, MD 21401

RE: **Region 28 Concurrence with Region 20's 700 MHz Plan Amendments**

Dear Mr. Ryan,

I am writing you in my capacity as the Chairman for Regional 28 Planning Committee.

Region 28 (Eastern PA, Southern NJ and Delaware) concurs with the Region 20 (District of Columbia, Maryland and Northern Virginia) 700 MHz plan Amendments. Region 28 has reviewed the 700 MHz Plan Amendments submitted by Region 20, and is satisfied that the plan amendments meet all of the requirements set forth in the FCC's recent Second R&O which remains to be based on the CAPRAD Channel Assignment Model as modified by the newly released 700 MHz Channel Plan, which takes into account the necessary considerations to coordinate with adjacent regions.

Region 28 looks forward to working with Region 20 in coordination of 700 MHz and other spectrum issues in the future.

Please contact me if you have any questions on this concurrence.

Sincerely,

Richard R. Reynolds

Richard R. Reynolds, Chairman
Region 28 – 700 MHz RPC

RRR/self

Cc: Gary McKelvey, R-20 Vice Chairman - via Email
Charles V. Bryson, RCC - via Email

City of Virginia Beach

VBgov.com

COMMUNICATIONS AND INFORMATION TECHNOLOGY
EMERGENCY COMMUNICATIONS DIVISION
(757) 385-4232
FAX (757) 385-1810

MUNICIPAL CENTER
BUILDING THIRTY
2508 PRINCESS ANNE ROAD
VIRGINIA BEACH, VA 23456-9115

DATE: November 21, 2007

TO: G. Edward Ryan II

CC: Linda Boring and Dave Warner

FROM: Robert A. DeLauney, 700 MHz Region 42 Chairman

SUBJECT: Region 42 Concurrence with the Region 20 700 MHz Plan

Dear Mr. Ryan,

This letter is in reference to the letter of concurrence in support of the 700 MHz Region 20 Plan. I am writing in my current role as the chairman for 700 MHz Regional Planning Committee 42.

Region 42 (Virginia) concurs with the Region 20 (District of Columbia, Maryland and Northern Virginia) 700 MHz plan. Region 42 has reviewed the 700 MHz Plan submitted by Region 20, and is satisfied that the plan addresses the necessary steps to coordinate with adjacent regions.

Region 42 looks forward to working with Region 20 in coordination of 700 MHz and other spectrum issues in the future.

Please contact me should you have any questions pertaining to this letter. You may reach me at 757-385-4066 or at rdelaune@vbgov.com.

Respectfully,

Robert A. DeLauney
Chairman, 700 MHz Regional Planning Committee 42

cc: Linda Boring, Vice-Chairman
Dave Warner, Secretary

Region 44 – West Virginia
700 MHz Regional Planning Committee

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

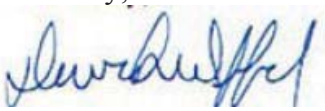
October 29, 2007

G. Edward Ryan, II, Chairman
c/o Maryland Department of Natural Resources
580 Taylor Avenue, E-4
Annapolis, Maryland 21401

Dear Mr. Ryan:

The Region 44 planning committee has reviewed the amendment to the Region 20 700 MHz regional plan, and concurs with it.

Sincerely,



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

6.0 System Design/Efficiency Requirements

6.1 Interference Protection

Applicants are expected to design their systems for maximum signal levels within their coverage area and minimum levels in the coverage area of other co-channel users. Quality system engineering, the use of directional antennae, and the advocacy of multi-agency/multi-discipline systems that promote interoperability should be employed by applicants to accomplish this goal. An applicant's coverage area is normally the geographical boundaries of the applicant's service areas plus a three to five mile area beyond.

The Region notes the extensive use of mutual aid agreements by jurisdictions within RPC20 and will accommodate the requests of applicants for wider coverage areas when appropriate provided that any extension does not result in harmful co-channel or adjacent channel interference. When required, the Region will coordinate with an adjacent Region to ensure that an interstate or intrastate mutual aid requirement is met.

In extraordinary circumstances impacted by the need to provide wider areas of coverage to meet the potential of national, regional emergencies, or mutual aid agreements, the Region may also permit the coverage area to extend beyond the normal limits reflected in the paragraphs above provided that such extension does not cause harmful co-channel or adjacent channel interference to any licensee or potential licensee employing a channel in an identified geographical assignment within the Region 20 Plan. The Region will not permit such a level of extraordinary coverage into an adjacent Region without the expressed and written approval of the adjacent Region.

Systems should be designed for minimum signal strength of 40 dBμ in the system coverage area while minimizing signal power out of the coverage area. The methodologies included within TIA TSB88 (most recent version) will be used to determine harmful interference assuming 40 dBμ, or greater, signal in all systems' coverage areas. This may require patterned antennas and extra sites compared to a design that assumes noise limited coverage. Region 20 will comply with National Coordination Committee recommendations of the Regional Planning Committee Guidelines.

6.2 Spectrum Efficiency Standards

Initial allotments will be made on the basis of the 25 kHz channel blocks incorporated in CAPRAD and then modified as consistent with this Plan to provide 12.5 or 25 KHz blocks of channels. To maximize spectrum utilization, prudent engineering practices and receivers of the highest quality should be used in all systems. Given a choice of radios to choose from in a given technology

family, agencies should use the units with the best specifications. This plan will not protect agencies from interference if their systems are under-constructed (i.e. areas with the established service area having minimum signal strength below 40 dBu), or the systems utilize low quality receivers. The applicant's implementation of prudent engineering practices will be encouraged by Region 20 at all times.

It is the eventual goal of the FCC and the public safety community for radio equipment to meet the requirement of one voice path per 6.25 KHz of spectrum. The Region has weighted its award criteria to jurisdictions employing spectrally efficient radios as noted in Section 3.2 B of the Plan. When applying for channels within Region 20, the applicants should acknowledge the deadline for converting all equipment to 6.25 kHz or 6.25 kHz equivalent technology found in 47 CFR §90.535(d).

As 6.25 KHz migration evolves, an applicant whose request creates any "orphaned" 6.25 KHz channels should realize that these channels will be allocated to nearby agencies requesting channels pursuant to Section 6.3 of the Plan to maintain consistent groupings and the general utilization of 12.5 or 25 KHz blocks within the Region.

In compliance with 47 CFR §90.527 (a)(6), Region 20 encourages small agencies to partner with other agencies in multi-agency or regional systems as they promote spectrum efficiency and both small and large agency capacity needs can be met. Loading criteria can also be achieved in multi-agency systems that will allow greater throughput for all agencies involved than that which could be achieved individually.

6.3 Orphaned Channels

The narrowband pool allotments within Region 20 will have a frequency bandwidth of 12.5 and 25 kHz as required by the applicant. These 12.5 and 25 kHz allotments have been characterized as "technology neutral" and flexible enough to accommodate multiple technologies utilizing multiple bandwidths.

An orphaned channel may be used at another location within or proximate to the geographical area where it was originally approved, provided that it meets co-channel and adjacent channel protection (ACP) interference criteria in 47 CFR §90.543.

Region 20 will utilize the term "geographic area" as a guideline for channel implementation within Region 20. The definition of "geographic area" in this plan is the geographical/political boundaries of a given city or county, plus a distance of up to 15 miles outside of such boundaries of the geographic area of assignment. The Region intends that this provision should be interpreted by the Technical Committee permissively with the intent to reuse channels to the

greatest extent practical as consistent with the provisions of 47 CFR §90 Subpart R. If the channel, or a portion of a channel, is being moved into a "geographic area" that is within 30 miles of an adjacent Region, Region 20 will receive concurrence from the affected Region.

By extending the "geographic area" into an adjacent county or city by a designated distance, it is anticipated this will increase the possibility that orphaned channel remainders will still be able to be utilized and reduce the potential for channel remainders to be forced to lay dormant. These movements will be documented in the CAPRAD database by the Region 20 Technical Committee.

If the "orphaned channel" remainder does not meet co-channel and adjacent channel interference criteria by moving it within the "geographic area" as listed above, and it is determined by the Region that the "orphaned channel" cannot be utilized in the Region without exceeding the distance described above, Region 20 will submit a plan amendment to the FCC to repack the channel to a location where its potential use will maintain maximum spectral efficiency. This FCC plan amendment will require affected Region concurrence.

When in the best interest of public safety communications and efficient spectrum use within the Region, the Region 20 Regional Planning Committee shall have the authority to move orphaned channel allotments and/or co-/adjacent-channel allotments affected by the movement of orphaned channels, within its "geographic areas", which are defined above. This is to retain spectrum efficiency and/or minimize co-channel or adjacent channel interference between existing allotments within the Region utilizing disparate bandwidths and technologies.

6.4 System Implementation

With Congressional passage of the Public Law 109-171, *Deficit Reduction Act of 2005* Title III Section 3002, *Digital Television Transition and Public Safety Act of 2005* and the President's signature on the legislation, commercial broadcasting in the frequencies encompassed by 47 CFR §90 Subpart R will end no later than February 17, 2009. Multiple jurisdictions within Region 20 are currently planning for the development of 700 MHz public safety communications systems. Within portions of Region 20, there are geographical areas where 700 MHz systems could be currently implemented without causing prohibited interference to commercial broadcasting licensees using frequencies between 769-775 and 799-805 MHz.

In the event 700 MHz stations can be activated prior to February 17, 2009, the Region 20 Regional Planning Committee will utilize the National Coordinating Committee Implementation Subcommittee documentation titled "DTV Transition" that will provide the criteria which will be used, per FCC rules, to

protect existing TV stations from land mobile use on 700 MHz public safety channels. Any areas in Region 20 that are capable of immediately implementing systems using any 700 MHz public safety channels will be permitted to file applications for a license.

In the event of interference to incumbent co-channel broadcasters in the Region, the implementation of systems will adhere to guidelines in 47 CFR §90.529 (b) (c). An Agency may file a request with the Regional Chairperson for an extension of time to implement. The request should include all details describing why the agency has not implemented the system and a new implementation schedule. If necessary, the Regional Chairperson will call a special meeting to determine if the allotment should be extended or if the agency should reapply to the committee for another allotment.

7. 0 Interoperability Channels

7. 1 Introduction

The ability for agencies to effectively respond to mutual aid requests directly depends on their ability to communicate with each other. Region 20 is subject to natural disasters and contains innumerable facilities, which may be susceptible to a man-made disaster or terrorist attacks. Intra and interstate mutual aid is strongly encouraged among agencies, multiple jurisdictions, and geographic regions. Three areas within Region 20 have already formed consortia of users for interoperability including the Washington, DC Council of Governments/National Capital Region as well as the Central and Eastern Shore portions of Maryland. This Plan seeks to facilitate the communications necessary for effective mutual aid.

Both the State of Maryland and Commonwealth of Virginia have formed Statewide Interoperability Executive Committees (SIEC) under National Coordination Committee's (NCC) guidelines and will administer the applicable 700 MHz interoperability channels. The Region 20 700 MHz Regional Planning Committee will work with the relevant Statewide Interoperability Executive Committee as needed. If at any time the State's SIEC is unable to function in the role of administering the interoperability channels in the 700 MHz band, the Region 20 700 MHz Committee will be prepared to assume this role if requested by the relevant SIEC and notify the FCC in writing of the change in administrative duties.

Selection of Radios and Programming of Interoperability Channels

As required by 47 CFR § 90.547 (Narrowband Interoperability channel capability requirement) except as noted in Subpart R, 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 pursuant to the standards specified in 47 CFR§ 90.548.

Region 20 is aware that the Commission is reviewing the above interpretation of 47 CFR § 90.547 and Region 20 will make such changes as necessary to comply with the Commission's requirements.

7.2 Tactical Channels

At this time, Region 20 will not set aside additional channels for interoperability use within the Region other than as stated in the Plan. It is anticipated the sixty-four FCC designated interoperability channels (6.25 KHz) will be sufficient to provide interoperability within Region 20. However, the Commonwealth of Virginia and/or State of Maryland may develop a broader plan for interoperability

until the direction of its SIEC and may request amendments to the Region 20 plan for channels to facilitate future plans.

All mobile and portable units operating under this Plan and utilizing 700 MHz channels must be programmed with the minimum number of channels called for either in NCC guidelines or as the relevant Statewide Interoperability Executive Committee specifies. The channel display in these radios will be in accordance with the NCC guidelines that have common alphanumeric nomenclature to avoid any misinterpretation of use within Region 20. The relevant SIEC is the final authority on the interpretation of the distribution of the 700 MHz interoperability channels.

7.3 Deployable Systems

In this Plan, Region 20 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 designated 700 MHz interoperability channels and/or agency specific General Use Channels. This will minimize the expense of installing extensive fixed infrastructure in areas while still providing mission critical functionalities as the Region recognizes the difficulty of providing complete coverage in all areas due to financial, demographic, and geographical constraints.

Agencies should have conventional deployable systems capable of being operated on any of the FCC designated/NCC recommended interoperability tactical channels. The agencies that are part of a multi-agency trunked system and 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 this use. The relevant SIEC will develop the operational details for deploying these systems.

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.

7.4 Monitoring of Interoperability 700 MHz Calling and Tactical Channels

Region 20 believes that it is appropriate for any new licensees using 700 MHz frequencies to monitor and have access to the current channels identification by the National Public Safety Planning Advisory Committee (NPSPAC) in the 800 MHz band.

Accordingly and until amended by the Region or superseded by order of the Commission, Region 20 will require applicants to install fixed network transceivers capable of monitoring the NPSPAC 800 MHz calling and four (4) tactical channels. Applicants may utilize a central agency to monitor the

NPSPAC calling channel on their behalf. As an example and in Maryland, the State's Emergency Management Agency (MEMA) may monitor the 800 MHz and eventual 700 MHz interoperability calling channel on behalf of a jurisdiction and assign callers to specific frequencies for inter-agency operations. Users not assigning the monitoring of an interoperability calling channel to an appropriate entity shall be responsible for the monitoring of the call frequency.

Notwithstanding the other provisions of this section of the Plan, Region 20 may supplement the four (4) traditional NPSPAC tactical channels in 800 MHz with additional tactical channels in the 700 MHz band as provided by the Commission or the relevant SIEC.

8.0 Future Planning – from 47 CFR §90.531 (a)(7)

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 20, 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 operating in the geographical areas as found in Appendix G. In addition, channels may be provided to an applicant pursuant to the provisions of this Plan as found in Sections 3.11 and 6.3 of the document.

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 20 Technical Committee will be updated and maintained within the CAPRAD database.

8.1 Windows of Future Channel Assignments

In the future, Region 20 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. As an integral part of the Plan, any orphan channels will be identified and reassigned pursuant to the provision of Section 6.3 of this Plan.

8.2 Review of the Plan's Effectiveness

As a standing agenda item for every meeting of Region 20, 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 20, 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 20 Chairperson. The Region 20 Chairperson shall review the findings of the Committee reviewing the allegation. Depending upon the findings of the Chairperson of Region 20, 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 20 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.

8.3 Inter-Regional Dispute Resolution Process

As executed and placed in Section 5.0 of 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.

8.4 Modifications to the Plan – from 47 CFR §90.527 (b)

In recognition that there will be amendments made to the Plan, the bylaws of the Region 20 700 MHz Planning Committee incorporate provisions permitting the amendments as may be necessary.

The Region 20 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.

9.0 Certification – from 47 CFR §90.531 (a)(8)

Pursuant to the provisions of 47 CFR §90.531 (a)(8), I hereby certify that all planning committee meetings, including subcommittee or executive committee meetings were open to the public. A summary of the deliberations of the Committee pursuant to adopting this Plan can be found in Appendix D, in the minutes of the Regional Planning meeting.

I further certify that the amendments included herein have been adopted by the Region's members within thirty (30) days of August 10, 2007, pursuant to the provisions established by the Commission in ¶346 of the Second Report and Order to Docket WT 96-86.

G. Edward Ryan, II

G. Edward Ryan, II, Chairperson, Region 20

December 31, 2007

Date

Appendices

Appendix A	**Region 20 By-laws**
Appendix B	**List of Region 20 Members, Agencies, Contact Information, and Voting Status**
Appendix C	**Independent Cities and Counties in Region 20**
Appendix D	**List of Region 20 700 MHz Planning Meeting Minutes and Minutes of the Planning (Technical) Committee**
Appendix E	**Interoperability Nomenclature for Channel Assignments**
Appendix F	**Rules for the Assignment of Channels**
Appendix G	**Assignment of Channels**
Appendix H	**Resolution of Inter-Regional Disputes**
Appendix I	**Notification to Low Power Television Stations in Affected Channels**
Appendix J	**Dispute Resolution Form**
Appendix K	**Post Plan Adoption Regional Meetings and Minutes**

Appendix A - Bylaws of Region 20

INTRODUCTION

1.1 Authority to Form. The authority to formulate this body is found in 47 CFR §90.527.

1.1.1 Name and purpose. The name of this Region shall be Regional Planning Committee Number Twenty and shall be commonly referred to as "Region 20". Its primary purpose is to foster and promote cooperation, planning, development, and evolution of Regional Plans and the implementation of these plans in the 700 MHz Public Safety Band within the State of Maryland, the District of Columbia, and the northern counties of the Commonwealth of Virginia and the independent cities of the Region.

1.2 Membership. There are three classes of membership within Region 20. These classes are defined below.

1.2.1 **Voting Member**. The voting membership shall be apportioned as follows. One representative from each county in Maryland and the City of Baltimore; one representative from each County and the City of Alexandria in the Commonwealth of Virginia; seven persons representing Maryland; seven persons representing the Commonwealth of Virginia state government; and seven representatives from the District of Columbia.

1.2.1.1 Substitutions. A voting member may waive his or her right to vote and designate an alternate if the voting member is unable to attend a meeting or declares a conflict of interest to a question before the Region.

1.2.1.2 Temporary Suspension of Voting Privilege. The Chair of the Region may temporarily suspend the voting rights of a voting member if the Chair identifies that the voting member has a conflict of interest. The suspension of the voting right shall be declared for individual questions before the Region. Upon completion of the question for which the voting privilege of a member was temporarily suspended, the voting rights of the voting member shall be restored fully.

1.2.1.3 Identification of a Substitute. If the Chair of the Region declares a conflict of interest and suspends temporarily the voting rights of a member, the member whose vote was suspended may appoint another person to vote in his or her place. Absent the continuing conflict of interest, the Chair shall recognize the substitute as the voting member for the licensee.

1.2.1.4 Appeal of Temporary Voting Suspension. If the Chair of the Region intends to temporarily suspend the voting rights of a member, the member may immediately appeal to the Region to overturn the intended ruling of the Chair. In the event of such appeal, the Chair and the voting member will each have five (5) minutes to address the membership. At the conclusion of discussions, the Chair shall immediately call for a vote to affirm the decision of the Chair. A simple majority is required to affirm the decision of the Chair.

1.2.2 Non-voting member. Any employee or volunteer representing an eligible licensee or state government organization may attend meetings and subject to the discretion of the Chair, be permitted to speak to any issue before the membership.

1.2.3 Non-voting member agent. Any licensee or state governmental organization may permit a consultant or other advocate for the licensee to participate in meetings on a non-voting basis. The non-voting member agent shall enjoy the rights and privileges of any other non-voting member. A consultant under retainage by a licensee or state government organization shall be deemed to be a de facto non-voting member agent.

GENERAL MEMBERSHIP ADMINISTRATION

2.1 Joining and Continuing Membership in Region 20. The Region 20 700 MHz Regional Planning Committee shall add members at annual, special, or regular meetings. To become a member of Region 20 700 MHz Regional Planning Committee, a representative simply has to attend a meeting. See attendance and voting rights procedures below. Once admitted, members are expected to regularly attend meetings.

2.2 Tenure. Except as provided in Section 2.4 of these By Laws, each member shall hold membership from the date of acceptance until resignation or removal.

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

2.4 Suspension of Voting Rights and Removal. Region 20 will hold such meetings as required by 47 CFR Part 90. To retain consistent voting rights, members should attend no less than one (1) meeting in a 24-month period. After the acceptance of this Regional Plan, voting members that do not attend one meeting in a 24-month period (starting on the date of plan acceptance) will lose Region 20 voting rights until restored by the Chairperson or the Vice Chair in the absence of the Chair.

2.4.1 Membership Suspension. A representative may be suspended or

removed with cause by vote of a majority of members attending a meeting after reasonable due process notice of such meeting has been issued to all members including the person subject to removal or suspension. Due process procedures are described below.

2.4.1.1 Before suspension or removal, the person subject to suspension or removal shall be afforded a reasonable opportunity to be heard and may call any witnesses with relevant information pertaining to the causation of suspension or removal.

2.4.1.2 If witnesses with relevant information are to be called, the names of such witnesses and a synopsis of their relevant testimony shall be provided to the Chairperson or Vice Chair in the absence of the Chair at least fourteen (14) calendar days prior to the meeting in which the suspension or removal will be considered by the members. The Chairperson or Vice Chair in the absence of the Chair shall be the sole determinant of evidence relevancy.

2.4.2 Committee Action. A vote of the committee is the final determining factor regarding removal a member from Region 20. A period of 6 months from the first day of removal is required before a removed member is eligible for reinstatement for membership in the Regional Planning Committee.

2.4.3 Immediate Removal of Persons. Nothing in this section shall prohibit the Chairperson or the Vice Chair in the absence of the Chair from ordering the immediate removal of any person whose conduct is disruptive to the meeting of the Region.

2.5 Resignation. A member may resign by delivering written resignation to the Chairperson or Vice Chairperson of the Regional Committee or to a meeting of the members. A resigning member is eligible for reinstatement to the Regional Planning Committee after a period of six months has lapsed, beginning on the first day of resignation.

2.6 **Meetings.** After Regional Plan approval, the Region 20 700 MHz Planning Committee will meet as required by 47 CFR Part 90. The location of meetings will be held at various locations throughout the Region to minimize the travel time of the members. All meetings shall be open to the public. The Operations Committee is also responsible to ensure that public notices of any Regional Planning Committee meetings are included in appropriate publications and that any eligible Native American tribe is notified of meetings.

2.7 Special Meetings. The Chairperson has the authority to call a meeting of the Regional Planning Committee when it is deemed to be it in the best interest of the Region or in compliance with Section 2.4.1 of these By Laws and will provide notice of the special meeting to existing members of the Region (and the

public) at least 30 days prior to the meeting. Special meetings of the members may be held at any time and at any place within the Region. Special meetings of the members may be called by the Chairperson or by the Vice Chair, or in case of death, absence, incapacity, by any other officer or, upon written application of two or more members.

2.8 Call and Notice.

2.8.1 Reasonable notice of the time and place of scheduled meetings of the members, not being less than 30 days, shall be given to each member. Such notice may specify the purposes of a meeting, but will specify meeting content if required by law or these bylaws or unless there is to be considered at the meeting (i) amendments to these bylaws or (ii) removal or suspension of a member who is an officer. Announcements of meetings, stating the time and place where the meeting is to be held may be published in newspapers and land mobile radio periodicals. In addition, a press release may be issued informing parties interested in public safety communications to attend. Region 20 will notify the Federal Communications Commission, Chief of the Wireless Telecommunications Bureau, when a meeting time and place has been established for the Region 20 700 MHz Regional Planning Committee.

2.8.2 Except as otherwise expressly provided, it shall be reasonable and sufficient notice to a member to send notice by mail or e-mail/facsimile at least thirty days before any special meetings, addressed to such member at his or her usual or last known business address, or, to give notice to such member in person or by telephone at least thirty days before the meeting.

2.9 Quorum. At any meeting of the members, the attendance of at least one officer and a minimum of at least ten (10) voting members shall constitute a quorum. Any meeting may be adjourned to such date or dates not more than ninety days after the first session of the meeting by a majority of the votes cast upon the question, whether or not a quorum is present, and the meeting may be held as adjourned without further notice.

2.10 Action by Vote. When a quorum is present at any meeting, a majority of the votes properly cast by voting members present shall decide any question, including election to any office, unless otherwise provided by law or these bylaws. In the event of a tie vote, the Chair, or the Vice Chair in the absence of the Chair, may decide the issue.

2.11 Action by Writing. Any action required or permitted to be taken at any meeting of the members may be taken without a meeting if all members entitled to vote on the matter consent to the action in writing and the written consents are filed with the records of the meetings of the members. Such consents shall be treated for all purposes as a vote at a meeting.

2.12 **Proxies.** Voting members may vote either in person or by written proxy dated not more than thirty (30) days before the meeting named therein, which proxies shall be filed before being noted with the secretary or other person responsible for recording the proceedings of the meeting**.** No voting member shall cast more than three proxies in addition to his or her vote. A voting member present via teleconference (audio, Internet, or video) shall have voting status parallel to a member present at the meeting. If the facility is unable to accommodate teleconferencing (audio, Internet, or video), or for any other reason teleconferencing cannot be accommodated in the meeting place, it is the responsibility of the member to attend the meeting in person or to vote by written proxy to have full voting rights. Unless otherwise specifically limited by their terms, such proxies shall entitle the holders thereof to vote at any adjournment of the meeting for which the proxy exists and the proxy shall terminate after the final adjournment of such meeting.

2.13 **Voting on One's Own Application**. At no time can a voting member vote on his/her application.

2.14 **Conflict of Interest.** A voting member cannot have a commercial interest in any of his/her Region and/or adjacent Region's application(s) on which he/she is reviewing, approving and/or voting. The Chair, Vice Chair, or any member can allege that a voting member has a conflict of interest and demand a vote of the membership relative to the legitimacy of the allegation of conflict of interest. The determination of a conflict of interest shall be determined by a vote of the membership with a simple majority of attendees confirming the conflict.

OFFICERS AND AGENTS

3.1 **Number and qualification.** The officers of the Region 20 700 MHz Regional Planning Committee shall consist of a Chairperson, a Vice Chairperson and a Secretary. All officers must be voting members of the Regional Committee.

3.2 **Election.** The officers shall be elected by the voting members at the convening meeting and, thereafter, at a meeting determined by the membership. The terms of the officers in the Region 20 700 MHz Regional Planning Committee will be for two (2) years.

3.3 **Tenure.** The officers shall each hold office until the election meeting of the members held within two years from the date of 700 MHz Regional Planning Committee convening meeting, or until their successor, if any, is chosen, or in each case until he or she sooner dies, resigns, is removed or becomes disqualified.

3.4 **Chairperson and Vice Chairperson.** The Chairperson shall be the chief executive officer of the Regional Committee and, subject to the control of the voting members, shall have general charge and supervision of the affairs of the Regional Committee. The Chairperson shall preside at all meetings of the

Regional Committee. The Vice Chairperson shall have such duties and powers as described in the by-laws plus any additional powers that the voting members 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.

3.5 **Secretary.** The Secretary shall record and maintain records of all proceedings of the members in a file or series of files kept for that purpose, which file or files shall be kept within the Region and shall be open at all reasonable times to the inspection of any member. Such file or files shall also contain records of all meetings and the original, or attested copies, of bylaws and names of all members and the address (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. In the absence of a Secretary within the Region 20 700 MHz Planning Committee, the Chairperson shall assign Region 20 Secretary duties as deemed necessary.

3.6 **Suspensions or Removal.** An officer of the Region 20 Regional Planning Committee may be suspended with cause by vote of a majority of the voting members in attendance pursuant to the provisions of Section 2.4 of the by-laws.

3.7 **Resignation.** An officer may resign by delivering his or her written resignation to the Chairperson, Vice Chairperson, or Secretary of the Regional Committee. 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.

3.8 **Term Limits.** To promote opportunities for leadership of the Region, no person shall hold the office of Regional Chairperson or Vice Chairperson for more than two consecutive terms. In the absence of nominations for a qualified candidate, this section of the By-Laws shall be waived.

3.9 **Vacancies.** If the office of any officer becomes vacant, the voting members may elect a successor. Each such successor shall hold office for the remainder terms and in the case of the Chairperson, Vice Chairperson, and secretary, until his or her successor is elected and qualified, or in each case until he or she sooner dies, resigns, is removed or become disqualified.

COMMITTEES

The Chair may appoint such committees as are deemed necessary to conduct the business of the Region. Each committee shall be charged with specific responsibilities by the Chair.

4.1 **Chair**. Each Committee shall be lead by a Chairperson who shall be appointed by the Regional Chair. In addition, the Committee Chair may request a Vice-Chairperson. Vice-Chairpersons shall be appointed by the Regional Chair.

4.2 **Nomination of Committee Chairperson**. Whenever practical, the Regional Chair shall seek nominations from the membership prior to making appointments as Committee Chair or Vice Chairs.

4.3 **Geographical Diversity**. In either calling for nominations of Committee Chairs or Vice Chairs as well as the general membership of a Committee, the Regional Chair shall seek geographical diversity that ensures that no portion of the Region can exert such influence as to be detrimental to another portion of Region 20.

4.4 **Committee Support**. At the discretion of the Committee Chair, the work of the Committee may be supported by a non-voting member agent as defined in Section 1.2.3 of the By Laws.

4.5 **Tenure of Committees**. There shall be two types of Committees, continuing and non-continuing as defined below.

4.5.1 **Continuing Committees**. A Continuing Committee is one whose duties and responsibilities are required throughout the life of Region 20. Continuing Committees for Region 20 include:

4.5.1.1 **Operations**. The Operations Committee considers amendments to By Laws as well as other administrative matters as referred to it by the Regional Chair or Vice Chair. The Operations Committee is responsible for establishing the dates and locations of future meetings as well as any recommended actions relative to the membership.

4.5.1.2 **Technical**. The Technical Committee considers all requests for channels and regulatory issues that will subsequently be referred to the FCC from the Region. This includes reviews of any matters from the adjacent regions including adoption of or modification to the RPC Plan.

4.5.2 **Non-Continuing Committees**. This is a Committee appointed by the Regional Chair or in his or her absence by the Vice Chair. A Non-Continuing Committee is formed for a specific purpose. The longevity of the Committee is commensurate with the duties as conferred by the Chair or Vice Chair and upon completion of its work; the Non-Continuing Committee shall be dissolved.

MEETINGS

Any meeting of the Region or one of its Committees is open to the public. There are no provisions under 47 CFR §90.527 (a)(8) to exclude any person from any type of meeting held under the auspices of Region 20.

AMENDMENTS

These bylaws may be altered, amended or repealed in whole or in part by vote. The voting members may by a two-thirds vote of a quorum, alter, amend, or repeal any bylaws adopted by the Regional Committee members or otherwise adopt, alter, amend or repeal any provision which FCC regulation or these bylaws requires action by the voting members. Proposed amendments to the By-Laws shall be identified and included in the Notice of Meeting no less than thirty (30) days prior to such meeting. Any changes in the Plan's By-Laws shall not become effective until approved by the FCC.

DISSOLUTION

This Regional Committee may be dissolved by the consent of two-thirds plus one of an assembled quorum of the membership at a special meeting called for such purpose. The FCC shall be notified. Proposed Dissolution shall be identified and included in the Notice of Meeting no less than thirty (30) days prior to such meeting. Any changes in the Plan's By-Laws shall not become effective until approved by the FCC.

RULES OF PROCEDURES

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.

Appendix B - Original Region 20 Member List and Contact Information

NAME	ORGANIZATION	ADDRESS	CITY		
Adams, William E	Frederick Co Dept of Emerg Comm.	340 Monteroe Lane	Frederick	MD	21702
Bohn, Richard	State of Md/Dept of Budget & Management	301 W. Preston St	Baltimore	MD	21201
Bowers, Wayne Logan	Maryland State Police	7755 Washington Blvd	Jessup	MD	20794
Boyles, Ken	CIA	1F0701 OHB	Washington	DC	20505
Bumgarner, Richard O.	Alexandria Police Dept	2003 Mill Rd	Alexandria	VA	22314
Burns, Louis F (Rick)	St. Mary's County Sheriff	Tuder Hall Drive	Leonardtown	MD	20650
Cooper, Phillip R.	St Mary's Co Emergency Communications	23090 Leonard Hall Dr PO Box 653	Leonardtown	MD	20650-0653
Crist, Ernie	Harford Co Emer Operations	2220 Ady Road	Forest Hill	MD	21050
Curry, William (Bill)	DC-Emergency Management Agency	2000-14th Street N.W. 8th Floor	Washington	DC	20009-4473
Dawson Jr., Purvis L 1st Lt	Fairfax Co Police Dept	3911 Woodburn Rd	Annandale	VA	22003
DeHoff Jr, William C.	Anne Arundel Co Gov	2660 Riva Road, 3rd floor	Annapolis	MD	21401
Dennis, Charles C.	Baltimore County ES/T	11112 Gilroy Rd Suite 101	Hunt Valley	MD	21031
Dugan, Bill	Sheriff Office Fauquier Co	78 West Lee St	Warrenton	VA	20186
Eierman, David	Motorola	7230 Parkway Dr	Hanover	MD	21076
Fetzer, Craig	Md Dept of Transportation(SHA)	5901 Baltimore National Pike	Baltimore	MD	21228
Goodman, David M	MTA	1515 Washington Blvd	Baltimore	MD	21230
Harris, Judy	Reed Smith	1301 K. Street NW	Washington	DC	20815
	Nextel	17 Squire Court	Reisterstown	MD	21136

Hyatt, Marty					
Jackson Jr.,Andrew L	DC Gov Emerg Management Agency	2001 14th St, NW-Reeves Ctr, 8th fl	Washington	DC	20009
King, Jeffery G	Howard Co Fire & Rescue	6751 Gateway Dr	Columbia	MD	21046
McBride, Wayne	Prince George's County Communications	7911 Anchor Street	Landover	MD	20735
McNeal, Tim	Talbot Co Emer Management	605 Port St	Easton	MD	21601
McKelvey, Gary	Loudoun County	41975 Loudoun Center Place	Lees Burg	VA	20175
Marshall, Steven R	Somerset Co Dept of Emer Services	11916 Somerset Avenue	Princess Anne	MD	21853
Meier, Craig L	Baltimore City PD	601 E. Fayette St	Baltimore	MD	21202
Miller, Thomas H	Md Inst for Emer Med Services(MIEMSS)	653 W. Pratt St	Baltimore	MD	21201
Paterm, Mark	Howard Co Police Dept	3410 Court House Drive	Ellicott City	MD	21043
Patullo, Charles F	Mont Co Fire & Rescue	120 Maryland Ave 3rd floor	Rockville	MD	20850
Petry, Lt. Richard	Baltimore Co Fire Dept	700 E. Joppa Rd	Towson	MD	21286
Raynor, Katherine	MdTA	1200 Frankfurst Ave	Baltimore	MD	21226
Redman, Buddy	Carroll Co Office of Public Safety	225 N. Center St	Westminster	MD	21157
Remaniak, David	Queen Anne's Co, DPW	P.O. Box 56	Centreville	MD	21617
Rust Jr, Robert B	Kent Co MD EMA	104 Vickers Drive Unit D	Chestertown	MD	21620
Ryan II G. Edward	Md Dept of Budget & Management	301 W. Preston St, Suite 1304	Baltimore	MD	21201
Shahnami, Ali	ACD Telecom Inc	785 Glenwood Dr	Lake Mary	FL	32746
	Calvert Co Public Safety	175 Main St	Prince Frederick	MD	20678

Short, Bob					
Sinclair, Jim	TRW Systems	12011 Sunset Hills Rd	Reston	VA	20190
Sobecke, James B	Graduate Student (George Washington U)	8820 Victoria Rd	Springfield	VA	22151
Standiford, Charles K	Baltimore Co Police Dept	3041 Fourth Ave	Baltimore	MD	21234
Sines. Stanley A "Al"	Metro Police Dept Washington DC	15808 Wayne Ave	Laurel	MD	20707-3256
Sura, Donald J(Lt Michael Bennett)	Md State Police Electronic Services	7755 Washington Blvd	Jessup	MD	20794
Turk, James E	Federal Emergency Management(FEMA)	19844 Blue Ridge Mountain Rd	Bluemont	VA	20135
Vershou, Simon	MdTA	2301 S. Clinton St	Baltimore	MD	21224
Walker, Michael	Nextel-Corporate Strategy	1753 E. Joppa Rd	Baltimore	MD	21212
Wallace, Theodore H	Cecil County	129 E Main St, Co Courthouse, Suite 6	Elkton	MD	21921
Wise, David	Howard Co Dept of Technology	3430 Court House Dr	Ellicott City	MD	21043

Appendix B-1 Region 20 Membership at Time of Completion of the 700 MHz Plan

Name	Agency	Business Address	Phone	Email
Frank Aghili	OCTO/NCR Program	441 4th St., NW, Suite 930S Washington, DC 20001	(202) 442-4272	Frank.aghili@dc.gov
Jack Anderson	Fairfax County, VA (RCC)	2248 Richelieu Drive, Vienna, VA 22182	(703) 573-5863	jack.anderson@fairfaxcounty.gov
Noel Armstrong	Virginia State Police	7700 Midlothian Turnpike Richmond, VA 23235	(804) 674-2689	noel.armstrong@vsp.virginia.gov
David "Duff" Barney	Fairfax County, VA	12000 Government Center Parkway, Fairfax, VA	(703) 324-3833	david.barney@fairfaxcounty.gov
Michael E. Bennett	Maryland State Police	7755 Washington Blvd, Jessup, MD 20794	(410) 799-3466	mbennett@mdsp.org
Henry D. Black	Maryland EMA	5401 Rue St Lo Drive Reisterstown, MD 21136	(410) 517-3637	hblack@mema.state.md.us
Rick Bohn	Baltimore County	11112 Gilroy Road, Suite 101 Hunt Valley, MD 21031	(410) 887-1878	rbohn@co.ba.md.us
Charles Bryson	Prince George's County (RCC)	7911 Anchor Street, Landover, MD 20785 2809 Emerywood Parkway Suite 505, Richmond, VA 23294	(804) 301-1123cell (804) 422-8460Office	cbryson@rcc.com
Rich Bumgarner	US Park Police	1100 Ohio Drive S.W., Washington, D. C. 20242	(202) 610-5295	Rich_bumgarner@nps.gov
Louis Burris	St. Mary's Sheriff's Dep't.	23115 Leonard Hall Dr. Leonardtown, MD 20650	301-475-4200 x1980	Louis.burris@co.saint-marys.md.us
Bill Butler	National Capital Region Program	441 4th St., NW, Suite 930S Washington, DC 20001	(202) 442-4933	William.butler@dc.gov
Timothy Cameron	St. Mary's County, MD Emer. Comm.	23115 Leonard Hall Dr. Leonardtown, MD 20650	301-475-4200 x2111	Tim_cameron@co.saint-marys.md.us
Bryan Casey	National Capital Region Program	441 4th St., NW, Suite 930S Washington, DC 20001	(202) 442-4982	Bryan.Casey@dc.gov
John Chew	Queen Anne's County, MD	100 Communications Dr., Centreville, MD 21617	(410) 758-4500 x1103	JChew@qac.org
John Contestable	MDOT/Comm. Interoperability	7201 Corporate Center Drive Hanover, MD 21076	(410) 865-1120	jcontestabile@mdot.state.md.us

Shirley Copado	St. Mary's County Emergency Comm.	23115 Leonard Hall Dr. Leonardtown, MD 20650	(301) 475-4200 X2120	shirley.copado@co.saint-marys.md.us
Ernie Crist	Harford County, MD	2220 Ady Road in Forest Hill, MD 21050	(410) 638-3574	elcrist@co.ha.md.us
Gene Cummins	Montgomery County	16647 Crabbs Branch Way Rockville, MD 20855	(240) 773-8080	Gene.cummins@montgomerycountymd.gov
Randy Cunningham	Harford County	2220 Ady Road in Forest Hill, MD 21050	(410) 638-4804	rjcunningham@co.ha.md.us
William Curry	DC Emergency Management	2000-14th Street N.W. 8th Floor, Washington, DC 20009	(202) 727-6161	William.curry@dc.gov
Gary D. Davis, Jr.	Maryland State Police	7755 Washington Blvd, Jessup, MD 20794	(410) 799-3466	gddavis@mdsp.org
Bill DeHoff	Anne Arundel County	44 Calvert Street MS 1117 Annapolis, MD 21401	(410) 222-2020 (443) 336-1508 C	bdehoff@aacounty.org
Bill Dugan	Fauquier County	78 West Lee St, Warrenton, VA 20186	(540) 349-2281	Bill.dugan@fauquiercounty.gov
Chris Essid	Governor's Office, Comm. of Virginia	1111 East Broad Street Richmond, Virginia 23219	(804) 225-3800	chris.essid@governor.virginia.gov
Craig Fetzer	Maryland SHA	5901 Baltimore National Pike Baltimore, MD 21228	(410) 787-8590	cfetzer@sha.state.md.us
David Goodman	Maryland MTA	6 St. Paul St | Baltimore, MD. 21202-1614	(410) 454-7062	dgoodman@mdot.state.md.us
Linda Goodridge	Stafford County, VA	1300 Courthouse Rd Stafford, VA 22554	(540) 658-4408	lgoodridge@co.stafford.va.us
Kyung Chul Heou	Joint Forces HQ-NCR	Unavailable	(202) 685-6142	Kyung.heou@jfhqncr.northcom.mil

Paul Hoppes	Comm. Of VA. VITA	110 S. 7th St 3rd Floor Richmond, VA 23219	(804) 371-5580	paul.hoppes@vita.virginia.gov
Dale Johnson	City of Alexandria	2003 Mill Road, Alexandria, VA 22314	(703) 930-1175	Dale.johnson@alexandriava.gov
Teddy Kavaleri	District of Columbia	310 McMillan Dr. NW, Washington, DC 20001	(202) 673-3139	Teddy.kavaleri@dc.gov
Derek Kelly	MWAA	1 Aviation Circle, MA-630 Washington, DC 20001	(703) 417-3492	derek.kelly@mwaa.com
David C. King	District of Columbia	310 McMillan Dr. NW, Washington, DC 20001	(202) 673-3792	davidc.king@dc.gov
Michael Latessa	District of Columbia	310 McMillan Dr. NW, Washington, DC 20001	(202) 671-3349	michael.latessa@dc.gov
Phil Lazarus	State Highway Administration	5901 Baltimore National Pike Baltimore, MD 21228	410-747-8590	plazarus@sha.state.md.us
Jack Markey	Frederick County, MD	340 Montevue Lane, Frederick, MD 21702	(301) 694-1418	jmarkey@fredco-md.net
Steven Marshall	Somerset County Emer. Management	11916 Somerset Avenue, Princess Anne, MD 21853	(410) 651-0707	smarshall@co.somerset.md.us
Brett Massey	Manassas City, VA	9518 Fairview Ave. Manassas, VA 20110	(703) 257-8352	bmassey@ci.manassas.va.us
Wayne McBride	Prince George's County, MD	7911 Anchor Street, Landover, MD 20785	(240) 832-0715 C	wmcbride@co.pg.md.us
Dennis McElligott	State of Maryland DBM	301 W. Preston St Suite 1304, Baltimore, MD 21201	(410) 767-0875	dmcellig@dbm.state.md.us
Gary McKelvey	Loudoun County, VA	41975 Loudoun Center Place Leesburg, VA 20175	(703) 771-5123	gmckelvery@loudoun.gov
Thomas Miller	MIEMSS	653 W. Pratt St, Baltimore, MD 21201	(410) 706-3207	tmiller@miemss.org
Mary Jo Morrison	MD DHR	Unavailable	(410) 767-7335	mmorriso@dhr.state.md.us

Walter Mueller	Maryland EMA	5401 Rue St Lo Drive Reisterstown, MD 21136	(410) 517-5128	wmueller@mema.state.md.us
William Mullikin	Talbott County Emer. Management	605 Port St., Easton, MD 21601	(410) 770-8160	mullikin@talbgov.org
Mark Navolio	National Capital Region	441 4th St., NW, Suite 930S Washington, DC 20001	(202) 442-4625	Mark.navolio@dc.gov
Glenn O'Neil	Charles County, MD	10425 Audie Lane La Plata, Maryland 20646	(240) 299-0848	geoneil581@hotmail.com
Bill Nutter	Wicomico County, MD	411 Naylor Mill Rd Suite 200 Salisbury, Md. 21801	(443) 497-9530	billn@ezy.net
Teresa Owens	Worcester County, MD	1 W. Market Street, Rm. 1002, Snow Hill, MD 21863	(410) 632-3080	towens@co.worcester.md.us
Tom Provenza	M-NCPPC PD	6700 Riverdale Road, Riverdale MD 20737	(240) 417-8253	Tom.provenza@pgparks.com
Bette Rinehart	Motorola	28 Twin Lakes Dr., Gettysburg, PA 17325	717-334-0654	c18923@email.mot.com
Scott G. Roper	Baltimore City, MD	242 W. 29th Street Baltimore, MD 21211	(410) 396 - 2450	Scott.Roper@BaltimorePolice.org
Tony W. Rose	Charles County Emergency Serv.	10425 Audie Lane La Plata, Maryland 20646	(301) 609-3550	roset@charlescounty.org
Joe Ross	National Capital Region	441 4th St., NW, Suite 930S Washington, DC 20001	(202) 448-9838	Joe.ross@dc.gov
G. Edward Ryan	Maryland DNR	580 Taylor Avenue, E-4 Annapolis, MD 21401	(410) 260-8734	GRyan@dnr.state.md.us
Charles Sandiford	Baltimore County PD	3041 Fourth Ave, Baltimore, MD 21234	410-887-4957	cstandiford@co.ba.md.us

Darla Smith	Maryland State Police	7755 Washington Blvd, Jessup, MD 20794	(410) 799-3466	dsmith@mdsp.org
Ken Smith	Kent County, MD	104 Vickers Dr., Unit D Chestertown, MD 21620	(410) 778-7472	ksmith@kentgov.org
James Sobecke	George Washington Univ. (Academic)	8820 Victoria Rd, Springfield, VA 22151	(703) 284-8113	jsobecke@gwu.edu
Sam Sommers	Prince William County, VA	4355 Ridgewood Center Drive Woodbridge, VA 22192-5308	(703) 792-6172	ssommers@pwcgov.org
Ron Strobel	Anne Arundel County, MD	8501 Veterans Hwy Millersville, MD 21108	(410) 222-8391	fdstrobe@aacounty.org
Thomas Struzzieri	Virginia State Police STARS	Post Office Box 27472 Richmond, Virginia 23261	(804) 674-4684	Thomas.Struzzieri@VSP.Virginia.gov
Jim Stoneback	Fairfax County, VA	12000 Government Center Parkway, Fairfax, VA	(703) 324-4384	james.stoneback@fairfaxcounty.gov
Lisa Thompson	Arlington County Emer. Comm.	1400 North Uhle Street, 5th Flr Arlington, VA 22201-9998	(703) 228-4009	lthompson@arlingtonva.us
Jacqueline Vaughan	Calvert County Pub. Safety Comm.	175 Main St, Prince Frederick, MD 20678	(410) 535-3491	vaughajk@co.cal.md.us
Randy Waesche	Carroll County, MD	225 N. Center Street, Rm. 023, Westminster, MD 21157-6900	(410) 386-2260	twaesche@ccg.carr.org
Theodore Wallace	Cecil County, MD	129 E Main St, Co Courthouse, Suite 6, Elkton, MD 21921	(410) 996-5350	twalllace@ccgov.org
David Warner	Comm. Of VA. VITA	110 S. 7th St 3rd Floor Richmond, VA 23219	(804) 371-5212	david.warner@vita.virginia.gov
David Wise	Howard County	3430 Court House Dr, Ellicott City, MD 21043	(410) 313-3283	dwise@co.ho.md.us
Bardonna Woods	Washington County, MD	33 West Washington Street Hagerstown, MD 21740	(240) 313-2906	BWoods@washco-md.net

Appendix B-2 Membership of the Technical Committee

Name	Agency	Phone	Email
Phil Lazarus	State Highway Administration	(443) 604-7710	plazarus@sha.state.md.us
Rick Bohn	Baltimore County	(410) 887-1878	rbohn@co.ba.md.us
Tony W. Rose	Charles County	(301) 609-3550	roset@charlescounty.org
Glenn O'Neil	Charles County	(240) 299-0848	geoneil581@hotmail.com
Gary McKelvey	Loudoun County	(703) 771-5123	gmckelve@loudoun.gov
Henry D. Black	MEMA	(410) 517-3637	hblack@mema.state.md.us
Rich Bumgarner	US Park Police	(202) 610-5295	Rich_bumgarner@contractor.nps.gov
Dale Johnson	City of Alexandria	(703) 930-1175	Dale.johnson@alexandriava.gov
David Wise	Howard County	(410) 313-3283	dwise@co.ho.md.us
Randy Cunningham	Harford County	(410) 638-4804	rjcunningham@co.ha.md.us
Gene Cummins	Montgomery County	(240) 773-8080	Gene.cummins@montgomerycountymd.gov
Ron Strobel	Anne Arundel County	(410) 222-8391	fdstrobe@aacounty.org
Bill DeHoff	Anne Arundel County	(410) 222-2020	bdehoff@aacounty.org
Frank Aghili	OCTO/NCR	(202) 442-4272	Frank.aghili@dc.gov
Jack Markey	Frederick County	(301) 694-1418	jmarkey@fredco-md.net
Teddy Kavaleri	District of Columbia	(202) 673-3139	Teddy.kavaleri@dc.gov
Joe Ross	NCR	(202) 448-9838	Joe.ross@dc.gov
Wayne McBride	Prince George's County	(240) 832-0715	wmcbride@co.pg.md.us
Charles Bryson	Prince George's County	(804) 301-1123	cbryson@rcc.com
Bill Dugan	Fauquier County	(540) 349-2281	Bill.dugan@fauquiercounty.gov
Tom Provenza	M-NCPPC PD	(240) 417-8253	Tom.provenza@pgparks.com
Bill Butler	NCR	(202) 442-4933	William.butler@dc.gov
Kyung Chul Heou	Joint Forces HQ-NCR	(202) 685-6142	Kyung.heou@jfhqncr.northcom.mil
Mark Navolio	NCR	(202) 442-4625	Mark.navolio@dc.gov

Appendix C - List of Independent Cities and Counties within Region 20

1. The District of Columbia

Commonwealth of Virginia

2. City of Alexandria, Virginia
3. Arlington County, Virginia
4. City of Fairfax, Virginia
5. Fairfax County, Virginia
6. City of Falls Church, Virginia
7. Fauquier County, Virginia
8. Loudoun County, Virginia
9. City of Manassas, Virginia
10. City of Manassas Park, Virginia
11. Prince William County, Virginia
12. Stafford County, Virginia

State of Maryland

13. Allegany County, Maryland
14. Anne Arundel County, Maryland
15. City of Baltimore, Maryland
16. Baltimore County, Maryland
17. Calvert County, Maryland
18. Caroline County, Maryland
19. Carroll County, Maryland
20. Cecil County, Maryland
21. Charles County, Maryland
22. Dorchester County, Maryland
23. Frederick County, Maryland
24. Garrett County, Maryland
25. Harford County, Maryland

26. Howard County, Maryland
27. Kent County, Maryland
28. Montgomery County, Maryland
29. Prince George's County, Maryland
30. Queen Anne's County, Maryland
31. Somerset County, Maryland
32. St. Mary's County, Maryland
33. Talbot County, Maryland
34. Washington County, Maryland
35. Wicomico County, Maryland
36. Worcester County, Maryland

State/Locality	Land Area Square Miles	2004 Population
District of Columbia	61	553,523
State of Maryland	9,774	5,558,058
Alexandria City	15	128,923
Arlington County	26	186,117
Fairfax City	6	22,062
Fairfax County	395	1,003,157
Falls Church City	2	10,781
Fauquier County	650	63,225
Loudoun County	520	239,156
Manassas City	10	37,166
Manassas Park City	2	11,519
Prince William County	338	336,586
Stafford County	270	114,781
Totals	12,069	8,265,054

Appendix D – Meeting Notices

Meeting attendance, agendas and other events where 700MHz information was disseminated.

PUBLIC NOTICE

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

DA 01-859
April 9, 2001

WIRELESS TELECOM ACTION

REGION 20 (DISTRICT OF COLUMBIA, MARYLAND
AND NORTHTHERN VIRGINIA) 700 MHz
PUBLIC SAFETY PLANNING COMMITTEE
ANNOUNCES FIRST MEETING

The Region 20 700 MHz Convener announces that the initial meeting of the Region 20 700 MHz Public Safety Planning Committee will be held on June 22, 2001, at 10:00 a.m. Region 20 includes the geographic area of the State of Maryland, the District of Columbia, and the Northern Virginia counties of Arlington, Fairfax, Fauquier, Loudoun, Prince William and Stafford, and the city of Alexandria.

The purposes of the meeting are to:

1. Establish a Regional Plan Review Committee,
2. Elect a Chairperson,
3. Establish procedural rules,
4. Review plan elements,
5. Determine regional boundaries,
6. Review NCC progress, and
7. Form workgroups to develop the regional plan.

The meeting will be held at:

Maryland State Highway Complex
Office of Traffic and Safety Training Room
7491 Connelley Drive
Hanover, Maryland 21076

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:

(over)

Alan T. Kealey, Convener
Director, Wireless Communications
Maryland Department of Natural Resources
580 Taylor Avenue, E-3
Annapolis, Maryland 21401
(410) 260-8887 (voice)
(410) 260-8878 (fax)

email: Region20_700@dnr.state.md.us

Additional information about the 700 MHz National/Regional Planning and related matters can be found on the FCC Public Safety web site located at: http://www.fcc.gov/wtb/publicsafety/700MHz/

PUBLIC NOTICE

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

DA 02-3447
December 13, 2002

WIRELESS TELECOMMUNICATIONS BUREAU

REGION 20 (DISTRICT OF COLUMBIA, MARYLAND, AND NORTHERN VIRGINIA) PUBLIC SAFETY PLANNING COMMITTEES ANNOUNCE
REGION 20 800 MHz (NPSPAC) REGIONAL PLANNING MEETING
AND
REGION 20 700 MHz REGIONAL PLANNING MEETING
(PR DOCKET NO. 91-300)

The Region 20 (District of Columbia, Maryland and Northern Virginia) 800 MHz Public Safety Planning Committee and the Region 20 (District of Columbia, Maryland and Northern Virginia) 700 MHz Public Safety Planning Committee announce that consecutive planning meetings will be held on Tuesday, January 28, 2003 (January 30, 2003 rain, snow and ice date) at the Potomac Community Public Library, Community Room, Prince William County, located at 2201 Opitz Boulevard, Woodbridge, Virginia.

The meeting of Region 20 800 MHz (NPSPAC) Regional Planning Committee will convene at 10:00 a.m. The agenda for this meeting includes:

- Update on Filing Windows 3 and 4,
- Technical Committee Report,
- Update on "RINS" channels reassignment plan,
- Update on committee appointments,
- New Business, and
- Adjourn 800 MHz meeting.

The meeting of the Region 20 700 MHz Public Safety Radio Review Committee follows adjournment of 800 MHz meeting. The agenda for this meeting includes:

- Plan and process background,
- Plan status,
- New Business, and
- Adjourn 700 MHz meeting.

Region 20 includes the geographic area of the State of Maryland, the District of Columbia, and the Northern Virginia counties of Arlington, Fairfax, Fauquier, Loudoun, Prince William and Stafford, as well as the independent cities of Alexandria, Falls Church, Fairfax, Manassas, and Manassas Park. Both of the Region 20 Public Safety Planning Committee meetings are open to the public. All eligible public safety providers in Region 20 may utilize these frequencies. It is essential that participants be representatives of all eligible public safety providers in order to ensure that your 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 and 800 MHz band within Region 20 should plan to attend, and are welcome to participate and volunteer for committee assignments.

For further information, please contact:

Alan Kealey, Chairperson
Region 20, 700 MHz and 800 MHz Public Safety
Planning Committees
Maryland Department of Natural Resources
580 Taylor Avenue (E3)
Annapolis, MD 21401
(410) 260-887-8887 (voice)
(410) 260-8878 (fax)
Email: akealey@dnr.state.md.us

PUBLIC NOTICE

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

DA 03-2852
September 8, 2003

WIRELESS TELECOMUNICATIONS BUREAU ACTION

REGION 20 (MARYLAND – METROPOLITAN AREA) PUBLIC SAFETY PLANNING COMMITTEES ANNOUNCE REGION 20 (700 MHz) REGIONAL PUBLIC SAFETY PLANNING MEETING AND REGION 20 NPSPAC (800 MHz) REGIONAL PUBLIC SAFETY PLANNING MEETING (Gen. Docket 90-7)

The Region 20 (the District of Columbia, Maryland and Northern Virginia area[8]) Regional Planning Committees announce two Region 20 Public Safety planning meetings.

On Friday, October 31, 2003, the Region 20 700 MHz Regional Planning Committee meeting will convene at 10:00 a.m. in the Conference Room (Lower level), Office of Traffic & Maintenance, Maryland State Highway Administration, Hanover Complex at 7491 Connelley Drive, Hanover, Maryland.

The agenda for the 700 MHz for the Regional Planning Committee meeting includes:

1. Review and Approve Previous Meeting Report,
2. Review Plan & Process Background,
3. New Business/Comments,

[8] The Northern Virginia area consists of Arlington, Fairfax, Fauquier, Loudoun, Prince William and Stafford, Counties and the City of Alexandria.

4. 4.9 GHz Update, and
5. Schedule Next Meeting.

The Region 20 800 MHz Regional Planning Committee meeting will convene immediately following the adjournment of the Region 20 700 MHz Regional Planning Committee meeting.

The agenda for 800 MHz Regional Planning Committee meeting includes:

1. Update on Windows 3 & 4,
2. Technical Committee Report,
3. RINS Channels Reassignment Plan Update,
4. Committee Appointments Update,
5. New Business/Comments, and
6. Schedule Next Meeting

Each of the Region 20 includes the geographic area of the State of Maryland, the District of Columbia and Northern Virginia. Both of the Region 20 Public Safety Planning Committee meetings are open to the public. All eligible public safety providers in Region 20 whose sole purpose or principal purpose is to protect the safety of life, health, or property 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 and 800 MHz band and 4.9 GHz band within Region 20 should plan to attend. For further information, please contact:

Alan T. Kealy, Chairperson
Region 20, 700/800 MHz Regional Planning
Wireless Communications Division
Maryland Department of Natural Resources
580 Taylor Avenue (E3)
Annapolis, Maryland 21401
PH: (410) 260-8887
FX: (410) 260-8878
Email: akealey@dnr.state.md.us

REGION 20 - 700 MHz

Public Safety Radio Plan Review Committees

MEETING NOTICE

All Meetings are Open to the Public

Date: **Thursday, March 23, 2006**

Time: **Immediately following Region 20-821 MHz meeting**

Location: **Large Conference Room (Lower level)** ***Receptionist 410-582-5500***

Office of Traffic & Maintenance
Maryland State Highway Administration
Hanover Complex
7491 Connelley Drive
Hanover, Maryland

Agenda: **Region 20-700 MHz**

Business Meeting +/-

- 700 MHz – Status and update
- Plan update
- New Business
- Adjourn 700 MHz meeting

Information: G. Edward Ryan, II – Region 20-700 Chairman
C/o Wireless Communications Division
Maryland Department of Natural Resources
580 Taylor Avenue, E-4
Annapolis, MD 21401

Tel: 410-260-8734 Fax: 410-260-8404
Email: gryan@dnr.state.md.us

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

PUBLIC NOTICE

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

DA 06-1404
July 7, 2006

WIRELESS TELECOMUNICATIONS BUREAU ACTION

REGION 20 (DISTRICT OF COLUMBIA, MARYLAND AND NORTHERN VIRGINIA AREA) 700 MHz PUBLIC SAFETY PLANNING COMMITTEE ANNOUNCES NEXT PLANNING MEETING

The Region 20 (District of Columbia, Maryland and Northern Virginia area)[9] 700 MHz Regional Planning Committee announces that the next meeting will be held on Monday, August 14, 2006, beginning at 10:00 a.m., in the lower level conference room at the Office of Traffic and Highway Maintenance, Maryland State Highway Administration, Hanover Complex, 7491 Connelley Drive, Hanover, Maryland.

The agenda this meeting includes:

1. 700 MHz – Status and update
2. 700 MHz Region 20 Plan update, discussion and vote
3. Regional ID standardization plan for P-25 systems – Tom Provenza
4. New Business
5. Adjourn

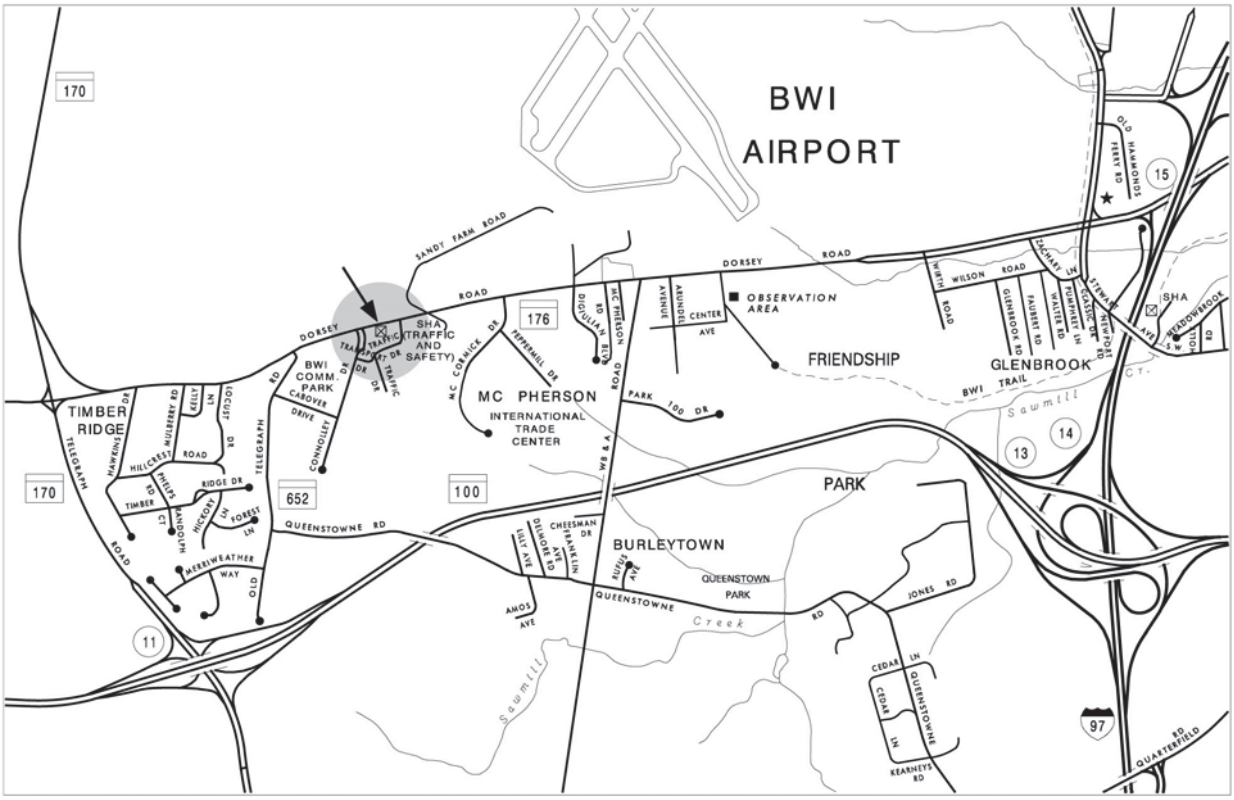
The Region 20 700 MHz Public Safety Planning Committee meeting is open to the public. All eligible public safety providers in Region 20 whose sole purpose or principal purpose is to protect the safety of life, health, or property may utilize these frequencies. It is essential that not only public safety, but all government, Native American Tribal, and non-governmental organizations

[9] The Region 20 area includes the District of Columbia, Maryland and Northern Virginia (Arlington, Fairfax, Fauquier, Loudoun, Prince William and Stafford Counties, and the cities of Alexandria, Fairfax, Falls Church, Manassas and Manassas Park).

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.

All interested parties wishing to participate in the planning for the use of new public safety spectrum in the 700 MHz band within Region 20 should plan to attend. For further information, please contact:

G. Edward Ryan, II
Region 20 700 MHz Chairman
Wireless Communications Division
Maryland Department of Natural Resources
580 Taylor Avenue, E-4
Annapolis, Maryland 21401
Telephone: (410) 260-8734
Fax: (410) 260-8404
Email: GRyan@dnr.state.md.us



Office of Maintenance, Office of Traffic & Safety, State Operations Center 7491 Connelley Drive, Hanover, MD 21076

Take 95 south to 295 south to 195 east (towards BWI). Take the first right exit 170 south. Follow 170 south and turn left onto176 - Dorsey Road. Continue on Dorsey Rd. approximately 1/2 mile and turn right onto Connelley Dr. The complex is on your left.

– FCC –

REGION 20 700 MHZ MEETING
AUGUST 14, 2006

ATTENDEES: Noel Armstrong (VA State Police), Henry D. Black (MD EMA), Charles Bryson (PG Co. RCC), Rich Bumgarner (US Park Police), Bill Butler (Nat'l Capital Region Pgrm.), Bryan Casey (Nat'l Capital Region Pgrm.), John Contestable (MDOT), Gene Cummins (Montgomery Co.), Randy Cunningham (Harford Co.), William Curry (DC EMA), Craig Fetzer (MD SHA), Linda Goodridge (Stafford Co., VA), Paul Hoppes (Comm. Of VA), Dale Johnson (City of Alexandria),Teddy Kavaleri, (D.C.), Phil Lazarus (MD SHA), Wayne McBride (PG Co.), Gary McKelvey (Loudoun Co., VA), Thomas Miller (MIEMSS), Glenn O'Neil (Charles Co.), Tom Provenza (M-NCPPC PD), Bette Rinehart (Motorola), Tony Rose (Charles Co. Emer. Serv.), Joe Ross (Nat'l Capital Region), Ed Ryan (MD DNR), Thomas Struzzieri (VA Police STARS), Lisa Thompson (Arlington Co. Emer. Comm.), David Wise (Howard Co.), Bruce Fryer (Motorola), Robert LeGrande (NCE-IP), Michael Martin (DPSCS), Al Sines (Sines Const. Svcs.), Keith Charin (Dataradio), Tom Struzzieri (VA State Police STARS), Ray Ellen (Tyco Elec.), Bill Cole (Cole Assocs.), David Eierman (Motorola), Maria-Elena Perez (DBM)

The meeting was called to order at 10:00 a.m.

Ed Ryan stated that the membership needed to go through the proposed By-Laws and the draft Plan that the Technical Committee had put together. Also need to look at amendments to the By-Laws.

Section 1.1, Section 1.1.1 – add "and independent cities within the region". Discussion ensued regarding the northern counties of Virginia (Alexandria). Amended.

Section 1.2 – Membership. A discussion ensued as to the title "chief administrative officer"; it was thought that it should be stated "Agency Head". Strike out from being appointed by the Chief Administrative Officer. Discussion also ensued as to the number of votes for each jurisdiction. A comparison to how the 800 MHz Committee votes was discussed and mention that it was not done by state agencies. It was done by public safety and environmental entities. Existing SIC model to include 7 from D.C. and Northern Virginia, 7 from Virginia State agencies and 7 from Maryland state agencies with a total of 35. A suggestion was made that each county in Maryland have a vote; Forestry, VDOT, Department of Information Technology, Virginia State Police as being counted for votes. A reading of the major elements of the Plan was done. Motion 24 representatives from Maryland; 7 Maryland state representatives to be assigned by SIEC. Virginia – 7 jurisdictions and 7 D.C. would have a vote. Motion to replace Section 1.2.1 was made. A statement that the voting membership, which consists of 1 representative each from the 23 counties of Maryland and 1 from Baltimore City, 7 from D.C., 7 from the Commonwealth of Virginia, 7 representatives from State of Maryland, and 1 each from the counties of Northern Virginia (7) and 1 from the City of Alexandria for a total of 53. Motion to accept the new 1.2.1.

Section 1.2.1.1. – Change the word “alternative” to “alternate”.

Section 1.2.1.2 – Voting member with conflict of interest. Motion accepted.

Section 1.2.1.3 – Identity of a substitute. Recognize substitute for the licensee. Motion accepted.

Section 1.2.1.4 – Voting a suspension. Motion accepted.

Section 1.2.2 – Non-Voting member. Discussion ensued about the Chair being able to manage the meeting time. Motion accepted.

Section 1.2.3 -- Motion accepted.

Section 2.1 – Joining and continuing membership. This was regarding adding members at special or regional meetings. Motion accepted.

Section 2.2 – Tenure. Motion accepted.

Section 2.3 – Powers and Rights. Motion accepted.

Section 2.4 – Suspension of Voting Rights and Removal -- Motion accepted.

Section 2.4.1 – Membership Suspension. Also included in this discussion were Sections 2.4.1.1 and 2.4.1.2. Discussion ensued regarding wording notices of such meeting has been issued to all persons, “**including**” the person subject… Motion accepted as amended.

Section 2.4.2 Committee action – removing a member. Motion accepted.

Section 2.4.3 – Immediate removal of persons. Motion accepted.

Section 2.4 – Resignation. Motion accepted.

Section 2.6 – Meetings. CFR – various locations. Motion accepted.

Section 2.7 – Special meetings. Reference made to Section 2.4.1. Motion accepted.

Section 2.8, 2.8.1 and 2.8.2 – Call and Notice. Notice by mail or e-mail thirty (30) days prior to the meeting. Motion accepted.

Section 2.9 – Quorum. There was much discussion on the number of voting members needed to constitute a quorum. Proposals that a quorum be an officer plus 5 voting members was supported by 5 attendees; an officer plus 10 voting members was supported by 8 attendees; an officer plus 15 voting members was supported by 7 attendees. A quorum is a physical representation at the meeting of a voting member or their designee.

After additional discussion a motion was made to vote on the following 3 definitions of a quorum. That a quorum consist of an officer + 5 voting members was supported by 5 attendees; an officer + 10 voting members was supported by 16 attendees; an officer + 15 voting members was supported by 11 attendees. Motion was accepted that a quorum consist of an officer plus 10 voting members.

Section 2.10 – Action by Vote. Motion accepted. Amendment to reflect that the Chair, or designee, can vote to block a tie. In the case where the Chair has an application, the Chair's designee shall vote. Motion accepted.

Section 2.11 – Action by Writing -- Motion accepted.

Section 2.12 – Proxies. Discussion ensued as to the number of proxies; problem with people carrying in proxies or just one vote for each member who would show up at the meeting. A body has to be here to vote. A representation of 3 and also unlimited; a member's own vote and 3 proxies. No proxy was supported by 3 attendees; Max 3 proxies for voting member was supported by 9 attendees. Unlimited proxy was supported by 7 attendees. Amend Section 2.12 to read: Voting motion 30 days before the meeting. A proxy holder has to be a member only. Some language changed to state "Voting member". Facility notices to include teleconference capabilities. Voting member shall not have more than 3 proxies. Motion accepted as amended.

Section 2.13 – Frequency Application. Motion accepted.

Section 2.14 – Conflict of Interest. Motion accepted.

Section 3.1 – Officers. Motion accepted.

Section 3.2 – Election. Motion accepted.

Section 3.3 – Tenure. Motion accepted.

Section 3.4 – Chairperson and Vice Chairperson. Chairperson should be capitalized. Motion accepted.

Motion to vote on sections at a time.

Section 3.5 – Secretary. Motion accepted.

Section 3.7 – Suspension or Removal. Motion accepted.

Section 3.8 – Resignation. Move to accept with administrative corrections. Motion accepted.

Section 3.9 – Term Limits. In the absence of any qualified candidate, discussion ensued regarding if no qualified candidate accepts nominations, this Section may be waived. This would allow the Chair to continue. Motion made to accept as amended. Motion accepted.

Section 3.10 – Vacancies. Motion accepted.

Section 4.0 – Committees.

Section 4.1 – Chair. Motion accepted.

Section 4.2 – Nomination of Committee Chairperson. Motion accepted.

Section 4.3 – Geographical Diversity. Motion accepted.

Section 4.4 – Committee Support. Motion accepted.

Section 4.5 – Tenure of Committees.
Section 4.5.1.1 – Operations Committee.
Section 4.5.1.2 – Technical Committee.

Section 4.5.2 – Non-Continuing Committees. Suggested language: Responsible for providing the information and inclusion in public notices." Suggestion to delete the last sentence of 4.5.1.1. Discussions ensued regarding responsibilities. Leave wording that the full committee (more talking) for ensuring that the notices for any full "regional planning committee" – remove last sentence and move it to the end of 2.6. Motion accepted.

Section 4.5 – Entitlement Without Amendment. Motion accepted.

Amendments: Suggest the change in the Plan or By Laws is being suggested. Amendment is not considered enacted until final approval of the Commission. "Notification of an amendment to be voted upon" to be the language. Motion accepted.

Dissolution – In notifying the FCC entire two sentences. Motion accepted.

Motion to accept By Laws as amended: Motion accepted.

REGIONAL PLAN

Charley gave a presentation of the differences between 800 MHz and 700 MHz of importance to the RPC. Reported on the operability technical standards. Also reported on major elements of the Plan; the strategy to maximize frequency use.

Future planning: Several members complained that they have not had enough time or were not notified to review the 700 MHz draft plan. Motion to vote on the Plan today. Discussion ensued as to how to make it fair and equitable for everyone when applying for voice and data channels. Voting on the Plan: Motion accepted. Three abstains.

Discussion regarding the waiver – lower channel. Amendment to Region 20 700 MHz Plan, Section 3.13

REPLACE:

The licensee may charge users reasonable rates for access that may be based upon costs for amortization of network acquisition, infrastructure installation costs, system operational costs, network upgrades/enhancements, and reasonable overhead for the licensee's administrative costs of operation. In such situations, each agency shall internally negotiate costs without mediation by the Regional Planning Committee except in extraordinary cases.

WITH:

NON-PROFIT PUBLIC SAFETY USE: The system will only be used for non-profit public safety purposes. No costs for shared use of the system that may be included in future agreements will be in excess of the costs required to maintain and effectively operate any system or operation. Each Party will provide representation to the Governing Board. The Governing Board will meet at least once annually in the month of January to review operational needs and identify associated costs for the next fiscal year using agreed upon formulas, growth plans, etc. for which the respective jurisdiction/agency will encumber.

Motion to adopt amendment: Motion accepted.

Window 1: for 3 years the Region will accept applications and then window will close. The Technical Committee will consider the applications, bring them to approval and then brings recommendation to the full committee. Discussions ensued regarding inter-region concurrence.

In Window 1 – go to the assignments, reasons to make the decision to not delay – No. Is there value for the delay of a few years? Process whatever has been submitted. If it is valid, go ahead and submit the application. Define what Window 1 is. Motion to change the period from 3 years in Window 1 to 120 days. Another suggestion was made to hold the applications for one year instead of three. Applications presented to the Technical Committee and approved shall be presented to the full body. Have annual meetings up until such a time then Appendix G shall expire and we are in Window 2. Motion accepted. Three abstentions.

Region 20 700 Committee Minutes 01-28-2003

1.) Call To Order by Mr. Alan Kealey, Chair, at 11:40 AM.

2.) Introductions. Mr. Kealey introduced the working group chairs.

3.) Minutes of the June 17, 2002 meeting were approved.

4.) Mr. Kealey noted that the Region 20 Committee has 3 years to submit a plan to the Federal Communications Commission. The National Communications Council (NCC) is assisting the Regions with the plan developments.

5.) Mr. Craig Fetzer, Operations Working Group Chair, reported that the Operations Working Group last met on January 8, 2003.

(a) The NCC guidelines and copies of other region draft plans were distributed at the January 8 meeting.
(b) Mr. Fetzer asked for volunteers to help prepare the Region 20 plan.
(c) Mr. Fetzer described the progress being done by the various workgroups, and noted that he is assembling these efforts for the plan.
(d) Mr. Fetzer opened for discussion the question of whether the Region should handle applications in a Window process or a First In - First Out process. There was considerable discussion on this and related topics. A consensus was not achieved.
  (i) The advantages and disadvantages of each process were discussed.
  (ii) It was noted that based upon the Region 5 experience, it appears that the FCC leans toward the Window process.
  (iii) Dr. Michael Trahos commented that the applicant should do the interregional coordination.
  (iv) Mr. Hank Black commented that the Region should first check the application for completeness. There should be a check-list.
  (v) Mr. Robert Bridenstine questioned how the other adjoining regions might feel about the applicant handling the interregional coordination.
  (vi) There were other questions regarding what-if scenarios:
(e) What if there is an inter-region problem?
(f) What if the other region is inactive.
  (i) Mr. Gary McKelvey suggested an initial first window procedure, then go to the first in first out process.
(g) Mr. Fetzer advised that a draft plan will be developed and submitted to the general committee for review and comment. Next the plan will go to interregional review and comment, and then ultimately to the FCC for their review and public comment.

(h) Mr. Fetzer asked that if anyone wants to help out on the workgroup to please contact him.

6.) Mr. Rich Bumgarner, Chair of the Technical Workgroup reported that a national channel database is being developed by the NCC, but it has not arrived yet. He also noted that he

has given input to the operations workgroup regarding technical issues.

7.) Dr. Michael Trahos commented:

(a) Encouraged the committee to be vocal and comment on relative issues before the FCC when the opportunity exists.
(b) Suggested that the name of the committee should reflect 764 MHz rather than 700 MHz.

8.) Mr. Kealey noted the Internet Web (Yahoo Group) address of the Region Committee and discussed the purpose of same.

9.) Mr. Kealey noted that Mr. Ron Wade is Chair of Region 42 [800], that Mr. Wade and his family are enduring health problems, and to remember them. Mr. Kealey acknowledged Mr. Wade's efforts on the Region 42 Committee and his contribution to the constructive working relationship enjoyed between Region 42 and Region 20.

10.) The meeting was adjourned at 12:45 PM.

Submitted by Sam Somers filling in as recording secretary.

Attachments:

- Attendance Sign-in Sheet

Region 20 764 Minutes 01-28-2003a.doc

Region 20 Meeting Minutes

Minutes of Region 20 700 MHz RPRC Initial Meeting

June 22, 2001

Location: Maryland State Highway Administration
Office of Traffic & Safety Training Room
7491 Connelley Drive
Hanover, Maryland 21076

The meeting was called to order by the Alan T. Kealey, Convener, for Region 20 - 700 MHz at 10:10 a.m.

Mr. Kealey welcomed everyone to the meeting and provided a background of his appointment by Sam Somers (Vice Chair of Region 20 821 MHz) as the Convener for the 700 MHz Committee. That as Convener, he is responsible for organizing and publicizing this first meeting. In his capacity as the Convener, he appointed Howard Redman as the temporary Recording Secretary for this meeting.

Mr. Kealey thanked Craig Fetzer of the Maryland Highway Administration for making the meeting room arrangements and supplying the refreshments. He reviewed the informational handouts that were available and requested everyone to sign the attendance roster, asked that pagers and cell telephones be turned off or made to vibrate. Mr. Kealey asked that when speaking, to please state your name and organization. He also welcomed Mr. Paul Hopeis [Hoppes] from Region 42 in Virginia for joining us.

The purpose of this meeting as stated by Mr. Kealey is to answer three questions; (1) Do we organize a Regional Plan Review Committee for 700 MHz, (2) What are the regional boundaries and (3) if a committee is formed our third and final purpose will be to elect officers.

Mr. Kealey asked the group if there is interest in forming a Regional Planning Committee. The group indicated an interest to do so.

Mr. Kealey explained that the FCC established the National Coordination Committee (NCC) to provide recommendations, develop technical standards and assist the formation of regional plans.

As a prelude to answering the question, "Do we change the regional boundriares?" Mr. Kealey introduced Mr. David Eierman (Senior Staff Engineer for Motorola) and Ms. Bette Rinehart (Administrator in Motorola's Regulatory Affairs section) to provide background on 700 MHz planning. In their capacity as members of NCC, they presented a presentation about the process of the 700 MHz channels, issues to deal with and timelines.

Mr. Kealey stated that after the presentation, we will have a better understanding of the process, and then address item (2) regional boundaries and item (3) elect a chairperson and form standing subcommittees.

Mr. Kealey introduced Dave and Bette to give their presentation.

After the presentation, Mr. Kealey explained the current Region 20 – 821 MHz boundaries and what that means for 700 MHz and the Regional Committee. This included an explanation of the opt-out issue for jurisdictions. Only those eligibles in the geographical area concerned can vote on the opt-out issue. Discussion continued on the advantages and/or disadvantages of opting-out. Mr. Paul Hoppes of Region 42 stated that they have not met to discuss the opt-out issue. Mr. Ali Shahnami stated that Region 42 can only work within State borders and states could agree to join to create super-regions.

Mr. Kealey explained that if there is consensus to opt out, the decision must be filed with the FCC no later than July 2, 2001. He then read the definition of consensus and other related words to assist with the determination.

The eligibles for the three geographical areas represented were instructed to meet as individual groups in different parts of the room to discuss and determine the opt-out issue. The three areas represented are Maryland, Virginia and the District of Columbia. The group recessed at 11:15 am for 30 minutes.

At 11:45 am the group reconvened to offer their decision on the opt-out issue.

Ed Ryan from the State of Maryland stated the eligible's within Maryland chose not to opt-out and are supportive of the super-region concept.

The northern Virginia group also chose to not opt-out, are supportive of the super-region concept and suggested that West Virginia be included in the super-region.

Al Sines spokesman for the District of Columbia also did not opt-out and was supportive of the super-region concept.

Having heard from each area of eligible's, Mr. Kealey stated the boundaries from our perspective are unchanged and we will now wait to hear from Region 42.

The next order of business was to elect the representatives of the Region 20 – 700 MHz Committee.

Ed Ryan nominated Alan T. Kealey to chair the committee. Phil Cooper seconded the nomination. Chuck Dennis made a motion to close the nominations, which was seconded by Gary McKelvey. Mr. Kealey was elected Chairman.

Chuck Denis nominated Gary McKelvey as Vice Chair, Bill Dugan seconded the nomination. Nominations were closed and Gary McKelvey was elected Vice Chairman.

Don Sura made a motion to nominate Mike Bennett as Secretary/Treasure. Logan Bowers seconded the nomination. Nominations were closed and Mike Bennett was elected Secretary/Treasure.

Ed Ryan made a motion that the chairperson be allowed to appoint committees as needed. Chuck Dennis seconded the motion and it was approved.

The following appointments were made by Mr. Kealey:

Recording Secretary:	Darla Burgess
Operations Subcommittee:	Craig Fetzer
Technical Subcommittee:	Rich Bumgarner
Frequency Database Administrator:	Richard Bohn
Legal Oversight:	Ruth Fahrmeier

Mr. Kealey explained the committee composition. He said at this point we are just an outline or framework of the complete Region 20 700 MHz committee. He stressed that it is important that we represent all eligible's within our area and work closely with our neighboring regions. He then asked all the subcommittee chairs to stand. He thanked them for serving their community of all eligible's in Region 20. He instructed them to fill their committees and for members of the group interested, to seek them out.

Mr. Kealey repeated that this is a framework and the first charge is for the Operations Subcommittee to develop the entire committee's composition and governing conventions. That we are to ensure good representation of eligibles and to consider a proposal by Dave Warner the Region 42 Convener to include voting representatives from adjacent regions.

Mr. Kealey stated that all interested parties must have an opportunity to comment and reasonable consideration of all views. He stated that we have three years to develop the plan, he then read the required plan elements from a FCC document.

Mr. Kealey announced that the next meeting would be in approximately 30 to 45 days in the Northern Virginia area. Meetings will be in different parts of the Region. All meetings, including subcommittee meetings are open to the public and to help exchange information we will be using a list server, and than subcommittees may establish list servers as well.

Mr. Kealey asked if there was any new business, there was none.

Mr. Kealey thanked the group for coming and participating in this historic event. He said we have an opportunity to be directly involved in work that will benefit thousands of people for decades to come. He again thanked Dave and Bette for their presentation and Mr. Redman for acting as Recording Secretary.

There being no further business the meeting adjourned at approximately 12:20 p.m.

Respectively submitted:

Howard S. Redman

Recording Secretary

Minutes of Region 20 700 MHz RPRC Meeting - August 22, 2001

Location: Alexandria Police Department
Alexandria, Virginia

The meeting was called to order by Alan T. Kealey, Chairman, Region 20 700 MHz Committee, at 10:15 a.m. Mr. Kealey thanked everyone for coming and gave a brief overview of the initial meeting held on June 22 at the State Highway Administration. He introduced officers and chairpersons of the various committees and gave a description of each committee's purpose. It was stated that all records will be archived by Maryland State Police (MSP) Electronic Communications Section at Waterloo.

Appreciation was expressed to Mr. Rich Bumgarner for arranging the meeting room and provision of refreshments. He also arranged for a demonstration of the APU1000's interoperability capabilities.

The minutes of the first meeting were distributed and corrections were made to misspelled last names. Craig Fetzer made a motion to accept the minutes with corrections; it was seconded by Rick Bohn. A verbal vote was taken and the minutes with corrections were accepted.

An issue that arose from the time of the initial meeting was a proposal to the National Public Safety Telecommunications Council (NPSTC) from a company in upstate New York on a method to pre-sort the 700 MHz database. Based on Rich Bumgarner's recommendation, discussions he's had with Gary McKelvey and information obtained from APCO in Salt Lake City, Mr. Kealey endorsed that proposal with a letter sent to the National Institute of Justice.

Mr. Gary McKelvey distributed handouts obtained while at National APCO in Salt Lake City. The most important issue relative to time was that states requesting the 2.4 MHz allocated for state geographic purposes needs to be applied for not later than December 31st of this year or that spectrum will be returned for general use. The 2nd most important thing heard was that 700 MHz spectrum seems a long way off with the channels that need to be returned but, on several occasions, it was stated that we need to focus on and begin the planning process to get as far as we can NOW. Someone asked when the first allocation of frequencies might take place, D'wanna Terrey (FCC at the APCO Conference) gave the 3rd quarter of 2001 as the time frame. That doesn't necessarily mean nationally, but she did say she felt that in the 3rd quarter of 2001 someone in the nation would be requesting and beginning the process for the 700 MHz frequencies.

The FCC has the National Coordination Committee **(www.fcc.gov/wtb/publicsafety/ncc.html)** looking at Project MESA which is the use of high speed broadband data. Also the Technical Committee is looking at Class A receiver standards, based on the interference problems in 800 MHz. They are seeking ways to eliminate those types of problems in 700 MHz.

NPSTC is supporting the Regional Planning Committees with a one time $2,500 distribution per region. They have put together CAPRAD (Computer Assisted

Pre-coordination Resource And Database) on a computer at the University of Denver that will have all of the information on the web relative to the channels assigned by each region accessed by an authorized region individual. This will be a tremendous benefit in working with inter-regional groups.

NPSTC talked about major improvements and support but weren't specific. They did, however, mention that there is a plan and guideline documents near completion and will be available on the website.

The FCC enforcement arm, which apparently has not been very strong in the past, is really changing. They are pleading for users having interference problems to call them and ask for their support. The previous chairman and the new chairman have put tremendous resources into enforcement. If you have a history of interference with little or no support in the past, call the enforcement organization.

FCC is looking to minimize interference problems with 700 MHz with guard bands and other standards that will be set. The FCC, through Mary Schultz, in the next six months will send out 286,000 letters to users of frequencies below 512 MHz. They will ask: Do you have the systems are constructed? If you don't have the systems constructed, check that box and, of course, their expectation is that you will return the frequencies. The third box is, "No, I don't have it constructed with an explanation." The turn around time on the letters is 30-60 days. Start gathering your information so you can provide a reasonably quick response.

Mr. Rich Bumgarner spoke next regarding the Technical Committee. Rich commented that he is intentionally waiting until he knows if Region 42 is going to merge with Region 20. There will definitely be representation from both Regions on the committee regardless of the outcome. Rich talked with Dave Warner while at APCO about how Region 42 addressed a Technical Committee. It was Rich's understanding that the people in a Region would come together when there was an application from that particular area.

Rich talked about a couple of technical points: Motorola is actually running a 700 MHz wideband data 150 KHz experimental license in Florida. There was a presentation during the APCO National Conference. It is Rich's understanding that on the wideband data, the protocol, the actual format of how that data will be sent will probably be decided in October. Motorola has a protocol they are running in Florida. This information is available on the website.

Mr. Bumgarner had copies of the proposal from the New York based non-profit organization to NPSTC for population of the national database ahead of time. Many people who have been involved with this stuff for a long time think this is worthy of consideration as a starting point to make the "maximum packing" of frequencies for the entire United States.

They are proposing to do this as if all of the TV stations are gone. Their approach is to give a minimum of 100 KHz to every place in the country. Terrain, population density, law enforcement people, etc. are taken into account. This is just the starting point. It, in no way, prevents reorganization by the Regional Committee within the Region. It should give the maximum number of frequencies to play with but how they want to be arranged within the Region is up to the

Committee and does not hamper the Committee's work in any way. As stated earlier, Rich recommended to Alan Kealey that we endorse this proposal and Alan wrote the letter or endorsement.

Craig Fetzer is also waiting for resolution of the proposed merge of Regions 20 and 42 in order to provide fair representation. The Committee is tasked with developing the overall Committee Regional Plan. Mr. Fetzer stated he is looking forward to having volunteers from all of the Region working on the Operations Committee.

Lt. Michael Bennett requested that everyone fill out a registration form so we can setup a database containing e-mail addresses, telephone and fax numbers, etc. Once all of the information is in the database, we will make sure everyone gets a copy.

Rick Bohn, Frequency Custodian, will be working closely with CAPRAD and once the merger issue is settled, he'll be looking for some help.

Ruth Fahrmeier, Legal Advisor, will check to see if Regions 42 and 20 merge will the NPSTC distribution be $5,000. Ruth's function will be to make sure we don't stray from the "straight and narrow."

Mr. Kealey apologized to the representatives from Virginia for failing to introduce them at the beginning of the meeting but immediately rectified that oversight.

Dave Warner from the Commonwealth of Virginia praised the committee for it's leadership, organization and being a role model for the rest of the country. Dave stated that we all have common goals and objectives but the way we achieve them may differ. He stated that the Commonwealth has some sovereignty issues and want to maintain their presence. His big questions was," How do we go about this regional, Super Region, or federation?" Dave is looking for input and has had other ideas and input voiced to him such as taking people from each of the committees, forming the Super Region and working out the spectrum and making all our borders disappear. The positive aspect is that each Region would have representation and the ultimate committees would have veto power if they felt something was not properly addressed at the Super Region level. The issue could still be discussed within each of the Regions, i.e. 20, 42, 36, etc., etc.

The negative side is that we'd still have to work out how representation would be handled. Dave is open for suggestions, discussion, questions, and comments.

Each Region would receive the $2,500 distribution from NPSTC. Region 42 has already applied for their allotment.

The common goal is allocation of spectrum. Mr. Kealey believes we would have better utilization of the spectrum as far as making the buffers go away but, at this point it would only affect Maryland and Virginia but believes as this rolls out operationally, the other regions will also join along with that. As far as one organization, is there a benefit to being that large, encompassing two states and the district? There is a benefit for each of the regions. The border would go away but we're all part of the process. Dave and Alan both believe that no matter what happens with the proposed Region merger, there should be representation from the

adjacent regions. All those present seemingly agree that it would be a cooperative effort with participation by both Regions. This is not something to rush into and will require much thought and discussion as to technical and administrative matters.

The FCC and other organizations want to see people joining together and working cooperatively. We have a great opportunity to make history by combining two strong organizations. This will certainly give us a stronger voice with organizations like the FCC and we would be an example for the rest of the country.

Region 42 can elect to join Region 20 creating a Region 20 comprised of the combined areas. Do we look at the standing committees, or do we need additional committees, or do we, at this time look at co-chairs giving Region 42 equitable representation.

Region 20 is small and the travel is easy. Maybe if we opt together, we can look at restructuring to have sub-regions and multiple vice chair positions so both sides feel their interests are preserved and represented. Due to the size of the geography of the combined regions, there may need to subcommittees for certain geographic areas.

The big questions is how administrative issues will be handled to meet the needs of all parties concerned. Whether the regions combine or not, they will continue to work together and have mutual cooperation.

Mr. Kealey stated he believes there could be more than one vice-chair of the overall committee. Someone from the Region 42 membership. The standing committees are: Recording Secretary, Operations Subcommittee, Technical Subcommittee, Frequency Database Administrator and Legal Oversight. There may be others, there may be less as we learn more and move to the future. It would not be unreasonable to have a co-chair from Region 42 for each one of these. Exploration of a new way of doing business whereby we can learn from each other and that the new region incorporate the things that work well in Region 42, particularly some of the local representation. Would the vice-chair have a responsibility to provide oversight to some of these standing committees and a geographical part of that new region? By taking the best from both sides would give us an overall better region.

Region 20 is a very active region which requires more frequent meetings than Region 42. Work groups and the standing committees would probably meet more frequently, particularly with conference calls, list servers and the like, today's communication technology can limit the need to frequently drive long distances. Everyone may not attend each meeting but they certainly have an opportunity to be informed and have their comments on record.

BOTTOM LINE: Is there a good reason to come together and form one organization?

The technical issues, even if we aren't in one region, will be overcome and we will still work very closely together with each other and our neighbors.

After much discussion, a motion was made by Lieutenant Michael Bennett, MSP:

If Region 42 opts into Region 20, each standing committee will be co-chaired by a Region 42 representative.

No standing committee will be populated until Region 42 makes their OPT-OUT decision. There will be a Region 42 representative co-Vice Chair of the overall committee.

The motion was seconded by Rich Bumgarner after which a verbal vote was taken. There was no opposition voiced. The motion was carried.

The District of Columbia has made application for the State channels.

There will be a one day PSWN Symposium at the Naval Academy Officers' Club jointly sponsored by PSWN and Maryland State Police. This is an opportunity for us to reconnect with some of our State officials about what the State would like to see as far as a new communications system. Interoperability issues will be discussed. The symposium is free and lunch will be provided. There's room for approximately 150 people.

Dave Warner will inform the Region 42 members of the discussion at today's meeting and make a conference call to Alan for further discussion.

Our intention was to have our next Region 20 meeting in Western Maryland. We'll wait until after October 2nd to schedule the time and place of the next meeting.

APPROVED AT THE JUNE 17, 2002 REGION 20 700 MHz MEETING 5

The meeting adjourned at 12:15 p.m.

Respectfully submitted:

Darla O. Burgess

Recording Secretary

APPROVED AT THE JUNE 17, 2002 REGION 20 700 MHz MEETING

Bob Gurss, speaking on the Intelligence Bill, 911 Commission Report, and the Senate Version of the CDT and TV stations stated that in-house is not ready; a lot of momentum only. Regarding right of the communications act, some kind of funding mechanism to press to get a converter box for their TVs. This was done in Germany. Pretty good shot to get something through this year; in the near term we will know that is the spectrum that is available.

Current legislation: Stations have to give up their analog. Cable systems have to carry the analog stations. Of its 10 TV channels, 6 were auctioned off and 30 MHz allocated to go to auction. Reallocating some or all of that for broadband. Lucent is promoting doing this. Commercial wireless people are losing interest. Legislation passed last year - two studies to be done: (1) DHS in consultation with the FCC and (2) the other is the FCC in consultation with DHS.

Sam asked if the licensees are authorized to operate within the block area of TV stations. If you are outside of the interference zone – yes. Some potential there if you can figure out how to do it. One licensee got approval to be in the middle of a TV zone. Extension of the wide-band – the commission issued an order on that recently. They pushed this way out.

Craig Fetzer, who is responsible for drafting this plan, left and did not provide the Committee with an update. Two years ago a meeting was held, but there has been no meeting since then. Ed requested that Gary spearhead the efforts to draft a plan.

Ed reported that Dave Warner approached Gary and asked how to utilize the state's allocation along the state's border. Ed, Gary and Rick had a number of different discussions between Maryland, Virginia and DC. Rick Bohn came up with cellular type allocation. This is mileage based and a super cell cluster. Size based upon Loudoun's 40 and 5 DBU contours. Incorporates some plans using New York's channel allocation. Overlays use geometric shapes to lay out how the frequencies are distributed. Similar to Missouri's geometric pattern, but with an emerging data overlay – cell splitting. Need to start this plan for Maryland.

Norm Coltri said that Region 28, eastern PA, DE and southern NJ. Had a preliminary 700 meeting and elected a Chair and a Vice Chair. Dick Reynolds is the Chair for 700. Gary to push the operations committee to get this plan taken care of. Rick said that what is needed is administrative type people to help put this together.

Is there a 4.9 GHz plan in the offing? Yes. We will schedule another meeting in the near future and hope to have more information.

Minutes of the Planning (Technical) Committee

Region 20 700 MHz Technical Committee Meeting
April 27, 2006

Attendees: Phil Lazarus (SHA), Rick Bohn (Baltimore County), Tony Rose (Charles County) Glenn O'Neil (Charles County), Gary McKelvey (Loudoun County), Henry Black (MEMA), Rich Bumgarner (APCO), Dale Johnson (Alexandria), David Wise (Howard County), Randy Cunningham (Harford), Gene Cummins (Montgomery), Ron Strobel (Anne Arundel County), Bill DeHoff (Anne Arundel County) Frank Aghili (OCTO/NCR), Jack Markey (Frederick County), Teddy Kavaleri (DC), Joe Ross (NCR), Wayne McBride (Prince George's County), and Charles Bryson (RCC Staff for Prince George's County).

1. The meeting began at 12:00 noon with a call to order by Technical Committee Chairman McBride.

2. There was discussion relative to the appointment and charge of committees. The discussion led to a brief phone conference with Craig Fetzer (relayed by Gary McKelvey) who suggested that the Technical Committee is charged with addressing the technical issues associated with development of the 700 MHz band. Once the technical issues have been addressed by the Technical Committee, the work outputs should be sent to the Operations Committee (chaired by Mr. Fetzer). All persons in attendance were comfortable with the appointment of the Technical Committee chair and the charge of the group as relayed from Mr. Fetzer.

   There was also some discussion about the meeting and whether it was open to the public. For clarification where this issue is addressed, the FCC's rules relative to the charge of the Region are found in 47 CFR Ch. I (10–1–05 Edition) § 90.527

   47 CFR §90.527 Regional plan requirements

   Each regional planning committee must submit a regional plan for approval by the Commission.

   (a) Common elements. Regional plans must incorporate the following common elements:

   (1) Identification of the document as the regional plan for the defined region with the names, business addresses, business telephone numbers, and organizational affiliations of the chairpersons and all members of the planning committee.

(2) A summary of the major elements of the plan and an explanation of how all eligible entities within the region were given an opportunity to participate in the planning process and to have their positions heard and considered fairly.

(3) A general description of how the spectrum would be allotted among the various eligible users within the region with an explanation of how the requirements of all eligible entities within the region were considered and, to the degree possible, met.

(4) An explanation as to how needs were assigned priorities in areas where not all eligible entities could receive licenses.

(5) An explanation of how the plan had been coordinated with adjacent regions.

(6) A detailed description of how the plan put the spectrum to the best possible use by requiring system design with minimum coverage areas, by assigning frequencies so that maximum frequency reuse and offset channel use may be made, by using trunking, and by requiring small entities with minimal requirements to join together in using a single system where possible.

(7) A detailed description of the future planning process, including, but not limited to, amendment process, meeting announcements, data base maintenance, and dispute resolution.

(8) A certification by the regional planning chairperson that all planning committee meetings, including subcommittee or executive committee meetings were open to the public.

3. With respect to the By-Laws and Rules of the 700 MHz Committee, Prince George's County was asked to research the rules adopted by other Regions and report back to the Operations Committee.

4. The next issue addressed by the Technical Committee related to the proposed RWBN network advocated by the National Capital Region (NCR). Three issues seemed to permeate the session.

   A. With respect to the frequency plan, the NCR believes that the preliminary assignments included in the draft Region 20 data allocation model would permit implementation of the RWBN without creating interference to the non-NCR members of Region 20. The group had questions related to the model as developed by the NCR.

B. Some members of the Region's membership advocate an expansion of the RWBN network that would provide broadband access throughout the Region.

C. Should the Region support the proposed RWBN waiver to the FCC's current rules? This issue is in response to 700 MHz Committee Chairman Ed Ryan's charge to the Committee to formulate a recommendation relative to support for the waiver.

Joe Ross and Frank Aghili spoke to the issues on behalf of the NCR. Mr. Ross provided the Region's perspective relative to the potential deployment of three (3) broadband channels that would not cause interference to non-NCR Region 20 members operating on an unused frequency or outside of the guard band range of ten (10) to twenty (20) miles.

Following considerable discussion, Gary McKelvey moved that the Region adopt the assignment of data channels as included in the draft Region 20 Plan. The motion was seconded by Teddy Kavaleri. After a call of the question, the motion was not carried.

Additional discussion resulted after the motion failed and due to time constraints, the Chair ended discussion and stated that the issue would be carried over to the next meeting. At that meeting, the NCR will be asked to speak to the issues of potential interference to members outside of the NCR as well as strategies to expand the concept to cover the entire Region.

5. The next issue raised by the Chair related to the voice portions of the 700 MHz voice assignments. The Chair noted that another Region had also struggled with the data portion of the Plan and contemplated the submission of only a plan for voice pending the resolution of certain issues by the Commission (please see http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-06-34A1.doc for additional information).

6. The first issue addressed relative to the 700 MHz plan related to the 25 KHz CAPRAD assignments (grouping of four [4] 6.25 KHz channels). The question of using a 25 KHz allocation as a default was raised as P-25 systems will only require a 12.5 KHz channel allocation. Both Motorola's ASTRO25® and M/A-COM's P25^{IP}® technologies use 12.5 KHz channels. However, M/A-COM's OpenSky® technology, which can operate in 700 MHz, does require a 25 KHz channel.

As an issue of concern, if all allocations are made using 25 KHz allocations (four 6.25 KHz channels), the users of ASTRO25® and M/A-COM's P25^{IP}® systems will need to exchange channels with other

jurisdictions. Prince George's County has already experienced this problem and had preliminary discussions with Fairfax County on the exchange of channels. This trading and coordination prohibits the default establishment of "orphan" or unused channels.

The options for channel assignments were discussed by the membership. At the conclusion of the discussion, Prince George's County was asked to review the technical issues and report back to the Committee at the next meeting.

7. Alexandria reported that it would release all of its 700 MHz channel allocations to Prince George's County. Prince George's acknowledged and accepted the offer of Alexandria.

8. There was discussion that the 700 and 800 MHz Technical Committees should be combined as many of the attendees support both committees and that the duplication of effort was unnecessary. Gene Cummins moved that the Technical Committees be combined into one group. The motion was seconded by Gary McKelvey. The motion was carried.

9. Following the passage of the motion, the Chair expressed a concern that by combining the groups, the important issues related to 700 MHz could be delayed. Following brief discussion, Mr. Cummins amended the original motion to defer the implementation of the combined committees until 9-1-2006. The amendment was seconded by Mr. McKelvey and the amended question was again carried.

10. There was an additional suggestion that the 700 MHz Technical Committee meet following meetings of the Region 20 Rebanding Committee. The Chair agreed; however, until there can be coordination with the Chair of the Rebanding Committee, a coordinated meeting schedule cannot be established.

11. Members of the Technical Committee were reminded that there is a Region 20 technical section on the web page. Members were encouraged to email Rick Bohn to enroll themselves and any consultants supporting the client member of the Region. Mr. Bohn's email is rbohn@co.ba.md.us

12. No firm date for the next meeting was established until the Chair can coordinate with other chairpersons. The agenda for the next meeting includes:

    A. Follow-up presentation by the NCR regarding the RWBN
    B. Findings of Prince George's County regarding the question of By-Laws and 12.5/25 KHz channel assignments

These minutes were approved at the May 25, 2006 meeting of the Committee

Region 20 700 MHz Planning (Technical) Committee Meeting
May 25, 2006

Attendees: Gary McKelvey (Loudoun County), Dale Johnson (Alexandria), Joe Ross (NCR), Wayne McBride (Prince George's County), Bill Dugan (Fauquier County), Ed Ryan (Maryland DNR), Mark Navolio (NCR) and Charles Bryson (RCC Staff for Prince George's County).

1. The meeting began at 12:45PM with a call to order by Technical Committee Chairman McBride.

2. The Chair asked if there were any corrections to the meeting minutes of April 27, 2006. No corrections were offered verbally in the meeting or through email and the minutes were accepted.

3. As the first order of business, the Chair invited Mr. Joe Ross, representing the National Capital Region (NCR), to provide a presentation on the RWBN. The presentation and subsequent discussion of the group is generally outlined below.

   A. Pre-FCC rule making issues – this is what has been presented by the NCR in the past to the NCR as well as Region 20.

   B. Reported that NCR represents 52.5% of the population of jurisdictions in Region 20. One broadband channel uses 53% of the available 700 MHz channel allocations for data.

   C. Expansion of broadband throughout Region 20 – NCR suggests that a plan could be provided; however, there would be some overlap.

   D. A question was raised relative to the use of data frequencies for state use. One hypothesis discussed was that data channels are allocated geographically and not to specific governmental units. Accordingly, any eligible licensee within the geographic area of assignment, such as a city within the assignment or state government, could apply for use of the 150 KHz identified for data in the 700 MHz band. However, once awarded a license for a geographic area, the licensee would be required to make the system available to any eligible licensee who would be otherwise authorized to apply for the channels. This would require the licensee to permit use of the system by any other eligible licensee much like a "common carrier" would provide usage to a large base of users. There seemed to be general concurrence within the attendees that an eligible licensee in an assignment area could apply for the use of the channels.

E. Another strategy discussed was to draft the data portion of the plan in such a manner as to not restrict each geographic region to three (3) consecutive 50 KHz channels in 700 MHz. This would permit an eligible licensee to make application to Region 20 for a wider range of channels needed to support various technologies including a broadband solution. When a licensee is prepared to make application for data channels, the licensee would come to Region 20 with the request for approval of the required number of data channels. Region 20 would be responsible for filing a waiver of the current rules with the FCC to permit a licensee to use more than the three (3) consecutive 50 KHz data channels.

F. Prince George's County (RCC) was asked to contact informally the adjacent regions to determine the impacts of a broadband network developed for use throughout the State of Maryland and the Virginia counties of Region 20.

4. The Chair stated that there will be one addition meeting in the near future to discuss the data channel allocation issues. At the conclusion of that meeting, the Technical Committee will finalize a recommendation to be reported to the Region's membership. That meeting will be held at the Prince George's County Central Communications Training Room located at 7911 Anchor Street in Landover, MD. This is about 1.5 miles west of I-495 (Exit 15B) and Maryland 214 (Central Avenue). The meeting will begin at 10:00AM on June 15, 2006. For directions or additional information, please call Wayne McBride at (240) 832-0715.

5. The resolution emailed to the Technical Committee related to channel assignments was discussed. One point of unanimity was that the allocation method, either 12.5 KHz or 25 KHz, presents the potential of problems relative to orphan channels, coordination, etc. It was suggested that initially, the Region will use the CAPRAD allocation; however, carefully evaluate its efficiency and reserve the right to follow alternative approaches to frequency allocation in the future. The resolution was not adopted and the CAPRAD table of assignments will be used initially in the assignment of channels.

6. As a point of clarification, the Technical Committee concurred with the concept that all frequency allocations are geographic, not political. The allocations permit any eligible licensee in a political jurisdiction to make application for a frequency.

7. The Committee also adopted the concept that the Plan will contain specific windows of time in which an eligible licensee can make application for frequencies. Once the window has closed, the Region

may reallocate unused channels to the general pool of available frequencies or implement a “first come – first served” approach.

8. The agenda for the next meeting includes:

   A. Review and approval of the minutes
   B. Review of proposed By Laws to be included in the Plan
   C. Discussion of the voice channel assignments
   D. Discussion of data channel assignments
   E. Other issues to be incorporated into the Plan

These minutes were approved at the June 15, 2006 Meeting.

Region 20 700 MHz Planning (Technical) Committee Meeting
June 15, 2006

Attendees: Gary McKelvey-by phone (Loudoun County), Dale Johnson (Alexandria), Bill Butler (NCR), Wayne McBride (Prince George's County), Mark Navolio (NCR), Phil Lazarus (SHA), Tony Rose (Charles County), Randy Cunningham – by phone (Harford County), Teddy Kavaleri (DC), Tom Provenza (M-NCPPC-PD), Linda Goodridge – by phone (Stafford), Kyung Chul Heou (Joint Forces HQ), Rick Bohn – by phone (Baltimore County) and Charles Bryson (RCC Staff for Prince George's County).

1. The meeting began at 10:15AM by Technical Committee Chairman McBride.

2. The Chair asked if there were any corrections to the meeting minutes of May 25, 2006. No corrections were offered and the minutes were accepted.

3. The first order of business was a review of the proposed By-Laws. Following a discussion of the draft By-Laws, Dale Johnson moved for acceptance of the document with Gary McKelvey providing a second. The By-Laws were adopted without dissent.

4. The second order of business was a discussion of the Plan's voice radio channel assignments. The discussion was led by the Chair and the Committee concurred that the assignment of either 12.5 KHz or 25 KHz channels should be performed in a "vendor-neutral" manner. As such, the Technical Committee supports the assignment of either 12.5 KHz or 25 KHz channel assignments as required by the applicant. CAPRAD will be used as the basis for assignments; however, when an applicant for channels requires additional spectrum, the Technical Committee will assess the request and when appropriate, identify additional channel assignments. A flowchart of the channel assignment process is depicted as Attachment A. A summary of the Technical Committee's comments will also be drafted as a portion of the plan and reviewed for final approval at the next Technical Committee meeting.

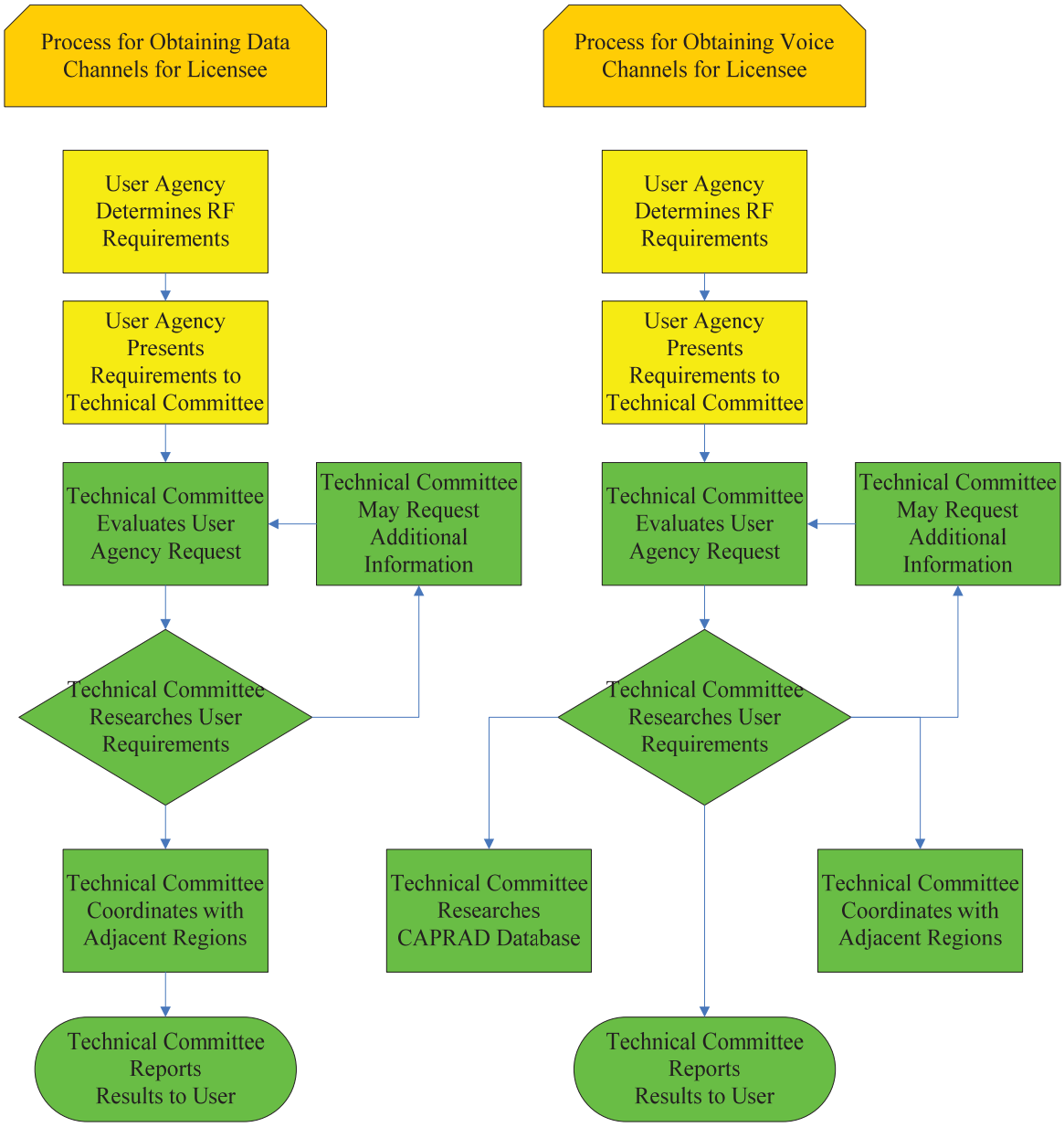
5. As a third order of business, the Technical Committee discussed the data channel assignments as a continuation from the May 25 meeting. The Committee made minor revisions to the draft verbiage for Section 3.5 of the Plan. The revised document, as amended, will be provided to members.

6. The Technical Committee will attempt to expedite its review of the draft Plan in total. It is hoped that the draft Plan can be approved by the Technical Committee at our next meeting on June 27 at 1:00PM. The next Technical Committee meeting will be held at the Prince George's

County Central Communications Facility (CCF) at 7911 Anchor Street in Landover. Following review of the June 25 minutes, the sole agenda item will be a final discussion of the draft 700 MHz.

7. The Committee requested that the Chair contact the Region 20 Chair and request a general 700 MHz Region 20 meeting to discuss the draft plan. The Technical Committee Chair will contact the Region 20 Chair and request that the meeting be held on July 26.

Attachment A



Recipients are asked to review these minutes and report and errors at the next meeting of the Region 700 Technical Committee.

Region 20 700 MHz Technical Committee Meeting
June 27, 2006

Attendees: Gary McKelvey (Loudon County), Bill Butler (NCR), Wayne McBride (Prince George's County), Phil Lazarus (SHA – by phone), Tony Rose (Charles County), Glenn O'Neill (Charles County), Randy Cunningham – by phone (Harford County), Teddy Kavaleri (DC), Tom Provenza (M-NCPPC-PD), Linda Goodridge – by phone (Stafford), Sergeant Chadwick (Joint Forces HQ by phone), Rich Bumgarner (US Park Police), Frank Aghili (NCR), Hank Black (MEMA-by phone), and Charles Bryson (RCC Staff for Prince George's County).

1. The meeting was called to order at 1:00PM by Technical Committee Chairman McBride.

2. The minutes from the previous meeting were reviewed and accepted.

3. The main order of business was a review of the draft 700 MHz Plan. The comments of the Technical Committee are noted in the following bullets.

   - There was considerable discussion relative to Section 3.3 of the draft which "requires" an applicant to return, when appropriate, spectrum vacated by the 700 MHz frequencies assigned by the Region. The general consensus of the Committee was that the language sets a high moral tone and is appropriate; however, the means to enforce the provision do not exist. The total authority of the Region after the Commission has issued a license is limited to petitioning the FCC to revoke the license, a step which was unappealing to the Committee's members. The direction from the Committee was to amend this section by requiring a letter from a person of authority within the applicant's organization pledging to return any unused frequencies one (1) year after the applicant has accepted the new 700 MHz system and implemented its use. The letter must state that the person signing has the authority to require such a return through a fiduciary power over the applicant. At a minimum, this creates documentation of the applicant's pledge to return the channels that can be considered by the FCC as appropriate.

   - There was discussion relative to Section 3.5 of the draft which includes language related to channel loading. One of the confusing issues for persons is that with 700 MHz channel loading, the formula must be different from the one used with 800 MHz. Depending upon the technology employed by an applicant, a single channel/frequency, as was used with 800 MHz, is different from the two or four channels needed in 700 MHz to create a 12.5 or 25 KHz frequency. Following significant

discussion, the direction of the Committee was to amend the section of the draft defining channel loading by stating that a subscriber's terminal device equals a radio for channel loading purposes. As an example, a piece of fire apparatus with a mobile and four (4) portables would representative five radios. A police officer with a mobile and portable radio would equal two radios. This 1:1 assignment, which is different from the strategy used with 800 MHz, was adopted by the Committee.

- With respect to the number of channels assigned to an applicant, the Committee concurs with the Plan and supports CAPRAD as the starting point for the basis of assignments. However, when the applicant's requirements exceed the channels as provided by CAPRAD, the Technical Committee should consider engineering reports, Grade of Service studies, etc. and based upon the relevant technical documentation brought forward by the applicant and when appropriate, assign additional channels within the provisions of the Plan or 47 CFR §90 Subpart R. This would include the important provisions adopted by the NPSTC National Coordinating Committee for the 700 MHz Pre-assignment Rules (NCC) incorporated in Section 6.3 of the draft Plan.

- In Section 3.13 of the draft relating to wideband/broadband data, representatives from the NCR reported that they had asked their counsel for reaction to this provision of the Plan. Reportedly, the NCR's counsel concurred with the language; however, predicted that the FCC would reject this provision if the NCR's petition or a similar petition permitting sufficient channels to support wireless broadband was not approved pursuant to their review in the 8th NPRM. The NCR did not request any changes and brought that matter to the Committees attention merely as an item of information.

- Another portion of Section 3.13 was identified by a member who asked that it be brought back to the Committee for further review. In the verbiage approved at the June 15 meeting, the Committee approved the concept of requiring a licensee of a data network to provide access to any eligible licensee within the mutual geographical area of assignment. The basis of this requirement is found in 47 CFR §90.527 which ***requires*** (emphasis added) small entities to share in a system. The logic of the Committee's action is that if the FCC requires small entities to share in a system then the licensee must permit them to have access so that the sharing may be realized. The member was satisfied with the information provided.

- There was some concern expressed relative to the number of persons that might vote on the Plan if the voting procedure as used when the 800 MHz Plan was not followed. The concern was addressed by reminding the Committee that 47 CFR §90.527 (b) requires that the Plan provide "***an explanation of how all eligible entities within the region were given an opportunity to participate in the planning process and to have their positions heard and considered fairly***". The member asking the question had been unable to attend earlier meetings when this issue was considered by the Committee with strong sentiment for voting by all eligible entities.

- Finally, there were some questions about the source documents employed in the draft plan with a request to share applicable documents. Source documents come from NPSTC and are too numerous to list. Sample documents will be attached with the email distribution; however, any member may visit the NPSTC site at http://www.npstc.org/nccsubcom.jsp for a complete listing of documents.

4. One caveat relative to the scheduled August 14 meeting was noted during the discussion. Until the bylaws are approved by the Region, there is no mechanism for defining the voting privileges of participants. During the discussion, the members suggested that the Chair of the Technical Committee develop a recommended agenda for the August 14 meeting and further, all of the Region's officers should meet in person before the August 14 meeting so the leadership of the 700 MHz RPC can review the proposed meeting agenda and reach a concurrence as to the manner in which the meeting should be conducted.

5. The meeting concluded at 4:00PM and the changes to the draft for which there was committee concurrence will be incorporated and sent back to the Technical Committee. Unless there is some reason to meet, no further meetings of the Technical Committee for the purpose of reviewing the draft plan are anticipated. The next event for the Plan's review will be the Region meeting on August 14.

Appendix E Table of Interoperability Channels

NOTE: The interoperability nomenclature identified below is for reference only pending finalization of channel labeling recommendations currently before the FCC.

These recommendations originated from the National Coordination Committee (NCC) Interoperability Subcommittee asking for standardized channel nomenclature and labeling. The Federal Communications Commission's decisions on channel labeling can alter these values accordingly. The FCC designated 700 MHz interoperability channels will be administered by the relevant Statewide Interoperability Executive Committees within Federal Communications Commission rules. The FCC's final ruling on interoperability channel labeling and interoperability channel designations and the relevant Statewide Interoperability Executive Committee interpretation of those rules take precedence over any Region 20 recommendation in this plan.

700 MHz Interoperability Channels, Labels, and Usage

LINE ID	FREQ / FCC CHANNEL (SUBSCRIBER LOAD)		BASE, MOBILE, OR FIXED	ELIGIBILITY / PRIMARY USE	ORIGINAL NCC NAME	TASK GROUP CONSENSUS NAME
	RECEIVE	TRANSMIT				
	CHANNEL	CHANNEL	FCC 700 MHz Public Safety Band (TV 63 + 68)			
35	39-40	999-1000	Mobile-Fixed	Calling Channel	7CAL59	**7CALL50**
36		SIMPLEX	Base-Fixed-Mobile			**7CALL50D**
37	23-24	983-984	Mobile-Fixed	*General Public Safety Service (secondary trunked)*	7TAC58	**7TAC51**
38		SIMPLEX	Base-Fixed-Mobile			**7TAC51D**
39	103-104	1063-1064	Mobile-Fixed	*General Public Safety Service (secondary trunked)*	7TAC62	**7TAC52**
40		SIMPLEX	Base-Fixed-Mobile			**7TAC52D**
41	183-184	1143-1144	Mobile-Fixed	*General Public Safety Service (secondary trunked)*	7TAC66	**7TAC53**
42		SIMPLEX	Base-Fixed-Mobile			**7TAC53D**
43	263-264	1223-1224	Mobile-Fixed	*General Public Safety Service (secondary trunked)*	7TAC70	**7TAC54**
44		SIMPLEX	Base-Fixed-Mobile			**7TAC54D**
45	119-120	1079-1080	Mobile-Fixed	General Public Safety Service	7TAC63	**7TAC55**
46		SIMPLEX	Base-Fixed-Mobile			**7TAC55D**
47	199-200	1159-1160	Mobile-Fixed	General Public Safety Service	7TAC67	**7TAC56**
48		SIMPLEX	Base-Fixed-Mobile			**7TAC56D**
49	319-320	1279-1280	Mobile-Fixed	Other Public Service	7TAC73	**7GTAC57**
50		SIMPLEX	Base-Fixed-Mobile			**7GTAC57D**
51	303-304	1263-1264	Mobile-Fixed	Mobile Repeater	7MOB72	**7MOB59**
52		SIMPLEX	Base-Fixed-Mobile			**7MOB59D**
53	223-224	1183-1184	Mobile-Fixed	Law Enforcement	7LAW68	**7LAW61**
54		SIMPLEX	Base-Fixed-Mobile			**7LAW61D**
55	239-240	1199-1200	Mobile-Fixed	Law Enforcement	7LAW69	**7LAW62**
56		SIMPLEX	Base-Fixed-Mobile			**7LAW62D**
57	143-144	1103-1104	Mobile-Fixed	Fire	7FIR64	**7FIRE63**
58		SIMPLEX	Base-Fixed-Mobile			**7FIRE63D**
59	159-160	1119-1120	Mobile-Fixed	Fire	7FIR65	**7FIRE64**
60		SIMPLEX	Base-Fixed-Mobile			**7FIRE64D**
61	63-64	1023-1024	Mobile-Fixed	EMS	7MED60	**7MED65**
62		SIMPLEX	Base-Fixed-Mobile			**7MED65D**
63	79-80	1039-1040	Mobile-Fixed	EMS	7EMS61	**7MED66**
64		SIMPLEX	Base-Fixed-Mobile			**7MED66D**
65	279-280	1239-1240	Mobile-Fixed	Mobile Data	7DAT71	**7DATA69**
66		SIMPLEX	Base-Fixed-Mobile			**7DATA69D**

LINE ID	FREQ / FCC CHANNEL (SUBSCRIBER LOAD)		BASE, MOBILE, OR FIXED OR CONTROL)	ELIGIBILITY / PRIMARY USE	ORIGINAL NCC NAME	TASK GROUP CONSENSUS NAME
	RECEIVE	TRANSMIT				
	CHANNEL	CHANNEL	FCC 700 MHz Public Safety Band (TV 64 + 69)			
67	681-682	1641-1642	Mobile-Fixed	Calling Channel	7CAL75	**7CALL70**
68		SIMPLEX	Base-Fixed-Mobile			**7CALL70D**
69	657-658	1617-1618	Mobile-Fixed	*General Public Safety Service (secondary trunked)*	7TAC74	**7TAC71**
70		SIMPLEX	Base-Fixed-Mobile			**7TAC71D**
71	737-738	1697-1698	Mobile-Fixed	*General Public Safety Service (secondary trunked)*	7TAC78	**7TAC72**
72		SIMPLEX	Base-Fixed-Mobile			**7TAC72D**
73	817-818	1777-1778	Mobile-Fixed	*General Public Safety Service (secondary trunked)*	7TAC82	**7TAC73**
74		SIMPLEX	Base-Fixed-Mobile			**7TAC73D**
75	897-898	1857-1858	Mobile-Fixed	*General Public Safety Service (secondary trunked)*	7TAC86	**7TAC74**
76		SIMPLEX	Base-Fixed-Mobile			**7TAC74D**
77	761-762	1721-1722	Mobile-Fixed	General Public Safety Service	7TAC79	**7TAC75**
78		SIMPLEX	Base-Fixed-Mobile			**7TAC75D**
79	841-842	1801-1802	Mobile-Fixed	General Public Safety Service	7TAC83	**7TAC76**
80		SIMPLEX	Base-Fixed-Mobile			**7TAC76D**
81	937-938	1897-1898	Mobile-Fixed	Other Public Service	7TAC89	**7GTAC77**
82		SIMPLEX	Base-Fixed-Mobile			**7GTAC77D**
83	881-882	1841-1842	Mobile-Fixed	Mobile Repeater	7MOB88	**7MOB79**
84		SIMPLEX	Base-Fixed-Mobile			**7MOB79D**
85	801-802	1761-1762	Mobile-Fixed	Law Enforcement	7LAW84	**7LAW81**
86		SIMPLEX	Base-Fixed-Mobile			**7LAW81D**
87	857-858	1817-1818	Mobile-Fixed	Law Enforcement	7LAW85	**7LAW82**
88		SIMPLEX	Base-Fixed-Mobile			**7LAW82D**
89	721-722	1681-1682	Mobile-Fixed	Fire	7FIR80	**7FIRE83**
90		SIMPLEX	Base-Fixed-Mobile			**7FIRE83D**
91	777-778	1737-1738	Mobile-Fixed	Fire	7FIR81	**7FIRE84**
92		SIMPLEX	Base-Fixed-Mobile			**7FIRE84D**
93	641-642	1601-1602	Mobile-Fixed	EMS	7EMS76	**7MED86**
94		SIMPLEX	Base-Fixed-Mobile			**7MED86D**
95	697-698	1657-1658	Mobile-Fixed	EMS	7EMS77	**7MED87**
96		SIMPLEX	Base-Fixed-Mobile			**7MED87D**
97	921-922	1881-1882	Mobile-Fixed	Mobile Data	7DAT87	**7DATA89**
98		SIMPLEX	Base-Fixed-Mobile			**7DATA89D**

Project 25 Common Air Interface Interoperability Channel Parameters

Certain common P-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 (NAC) is analogous to the use of CTCSS and CDCSS signals in analog radio systems. It is a code transmitted in the pre-amble of the P-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.

Use of corresponding NAC code $293 is required for the 700 MHz Interoperability Channel NAC code.

Talk group ID

In the Project 25 Common Air Interface definition, the Talk group ID on conventional channels is analogous to the use of talk groups in trunking. In order to ensure that all users can communicate, all units should use a common Talk group ID.

Recommendation: Use P-25 default value for Talk group ID = $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 value 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 should not be used 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 0000. These same defaults may be used for the other Interoperability channels when encryption is not used.

Use of encryption is allowed on the other Interoperability 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 - F Simplified 700 MHz Pre-assignment Rules

Introduction

This paper describes a process for coordinating the initial block assignments of 700 MHz channels before details of actual system deployments is available. In this initial phase, there is little actual knowledge of the specific equipment to be deployed and the exact antenna sites locations. As a result, a simple, high-level 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 for each applicant. This will normally be an area defined by geographical or political boundaries such as city, county or by a data file consisting of line segments creating a polygon that encloses the defined area. The service contour is normally allowed to extend slightly beyond the geo/political boundaries such that systems can be designed for maximum signal levels within the boundaries, or coverage area. Systems must also be designed to minimize signal levels outside their geo/political boundaries to avoid interference into the coverage area of other co-channel users.

For co-channel assignments, the 40 dBμ service 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 rural. The co-channel 5 dBμ interfering contour will be allowed to touch but not overlap the 40 dBμ service contour of the system being evaluated. All contours are (50,50).

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

Discussion

Based upon the ERP/HAAT limitations referenced in 47CFR §90.541(a), the maximum field strength will be limited to 40 dB relative to 1μV/m (customarily denoted as 40 dBμ). It is assumed that this limitation will be applied similar 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 beyond 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 that public safety systems have adequate margins for reliability within their service area in the presence of interference, including the potential for interference from CMRS infrastructure in adjacent bands.

The value of 40 dBμ in the 700 MHz band 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 bandwidth 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.

If CMRS out-of-band emissions (OOBE) noise is allowed to be equal to the original thermal noise floor, there is a 3 dB reduction[10] in the available margin. This lowers the reliability and/or the channel performance of Public Safety systems. The left side of Figure 1 shows that the original 33 dB margin is reduced by 3 dB to only 30 dB available to determine "noise + CMRS OOBE limited" performance and reliability.

There are also different technologies with various channel bandwidths and different performance criteria. C/N in the range of 17 – 20 dB is required to achieve channel performance.

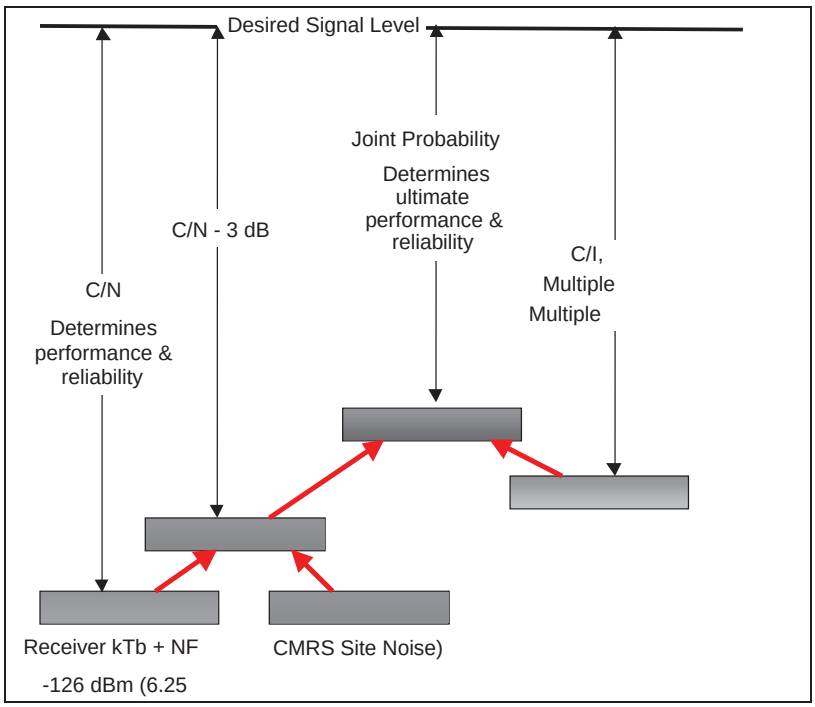


Figure 1 - Interfering Sources Create A "Noise" Level Influencing Reliability

In addition, 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. At the edge of the service area, there would normally be only a single co-channel source, but there could potentially be several adjacent or alternate channel sources involved. It is recommended that co-channel assignments limit interference to

[10] TIA TR8 made this 3 dB allowance for CMRS OOBE noise during the meetings in Mesa, AZ, January 2001.

<1% at the edge of the service area (worst case mile). A C/I ratio of 26.4 dB plus the required capture value (~10 dB) is required to achieve this goal.[11].

The ultimate performance and reliability has to take into consideration both the noise sources (thermal & CMRS OOBE) and all the interference sources. The center of Figure 1 shows that the joint probability that the both performance criteria and interference criteria are met must be determined.

Table 1 shows estimated performance considering the 3 dB rise in the noise floor at the 40 dB signal level. Performance varies due to the different Cf/N requirements and noise floors of the different modulations and channel bandwidths.

Note that since little is known about the affects of terrain, an initial lognormal standard deviation of 8 dB is used.

Comparison of Joint Reliability for various				
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)	**94.7%**	**94.7%**	**90.4%**	**76.1%**
40 dBu = -92.7 dBm @ 770 MHz				

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

These values are appropriate for a mobile on the street, but are considerably short to provide reliable communications to portables inside buildings.

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

Portable In-Building Coverage

Most Public Safety communications systems, today, are designed for portable in-building[12] coverage and the requirement for >95 % reliable coverage. To analyze the impact of requiring portable in building coverage and designing to a 40 dBμ service contour, several scenarios are presented. The different scenarios involve a given separation from the desired sites. Whether simulcast or multi-cast is used in wide-area systems, the antenna sites must be placed near the service area boundary and directional antennas, directed into the service area, must be used. The impact of simulcast is included to show that the 40 dBμ service contour must be able to fall outside the edge of the service area in order to meet coverage requirements at the edge of the service area. From the analysis, recommendations are made on how far the 40 dBμ service contour should extend beyond the service area.

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 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 service contour 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	-118.50
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%

[12] Building penetration losses typically required for urban = 20 dB, suburban = 15 dB, rural = 10 dB.

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 a single site cannot provide >95% reliability. Either more sites must be used to reduce the distance or other system design techniques must be used to improve the reliability. For example, the table shows that simulcast can be used to achieve public safety levels of reliability at this distance. Table 2 also shows that the difference in performance margin requirements for wider bandwidth channels requires more sites and closer site-to-site separation.

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)

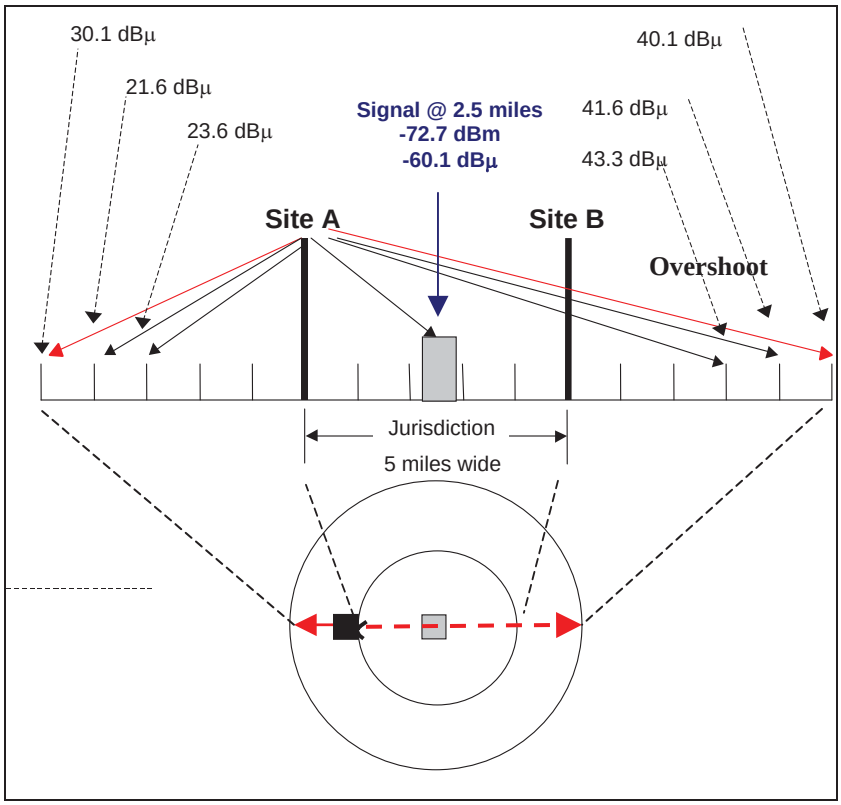


Figure 2 - Field Strength From Left Most Site.

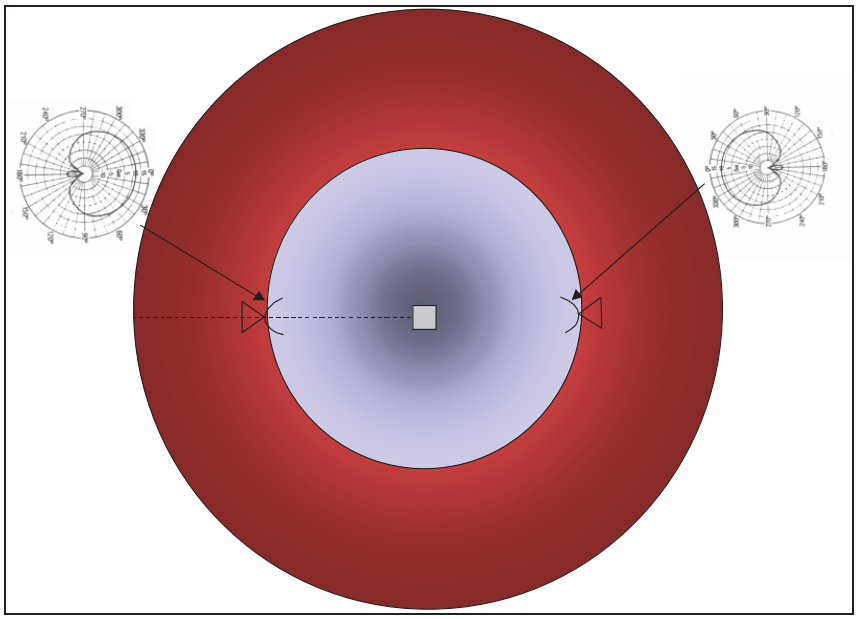


Figure 3 - Antenna Configuration Required To Limit Field Strength Off "Backside"

Figure 2 is for an urbanized area with a jurisdiction defined as 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 and utilize directional antennas oriented 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, instead of directional antennas, to control the 40 dBμ is not practical, in this scenario. For a 200 foot tall tower, the center of radiation from a 3 dB down-tilt antenna hits the ground at ~ 0.75 miles[13]. The difference in angular discrimination from a 200 foot tall tower at service area boundary at 5 miles and service contour at 10 miles is approximately 0.6 degrees, so ERP is basically the same as ERP

[13] Use of high gain antennas with down-tilt on low-level sites is one of the causes of far-near interference experienced in the 800 MHz band.

toward the horizon. It would not be possible to achieve necessary signal strength at service area boundary and have 40 dBμ service contour be less than 5 miles away.

Tables 3 and 4 represent the same configuration, but for less dense buildings. In these cases, the distance to extend the 40 dBμ service contour can be determined from Table 5.

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 3.5 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 5.0 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.

	Site A Direct Path	Site B Back Side of 20 dB F/B Antenna
Overshoot Distance (mi)	Field Strength (dBμ)	Field Strength (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

For the scenarios above, the composite level at the Service Contour is the sum of the signals from the two sites. The sum can not exceed 40 dBμ. Table 5 allows you to calculate the distance to Service Contour given the distance from one of the sites.

Scenario 1: Refer to Figure 3a. Site B is just inside the Service Area boundary and Service Contour must be <5 Miles outside Service Area boundary. Signal level at Service Contour from Site B is 30.1 dBμ. Signal level for Site A can be up to 40 dBμ, since when summing two signals with >10 dB delta, the lower signal level has little effect (less than 0.4 dB in this case). Therefore, Site A can be 10 miles from the Service Contour, or 5 miles inside the Service Area boundary. The coverage perfomance for this scenario is shown in Table 2, above, for 20 dB building loss typical of urban areas.

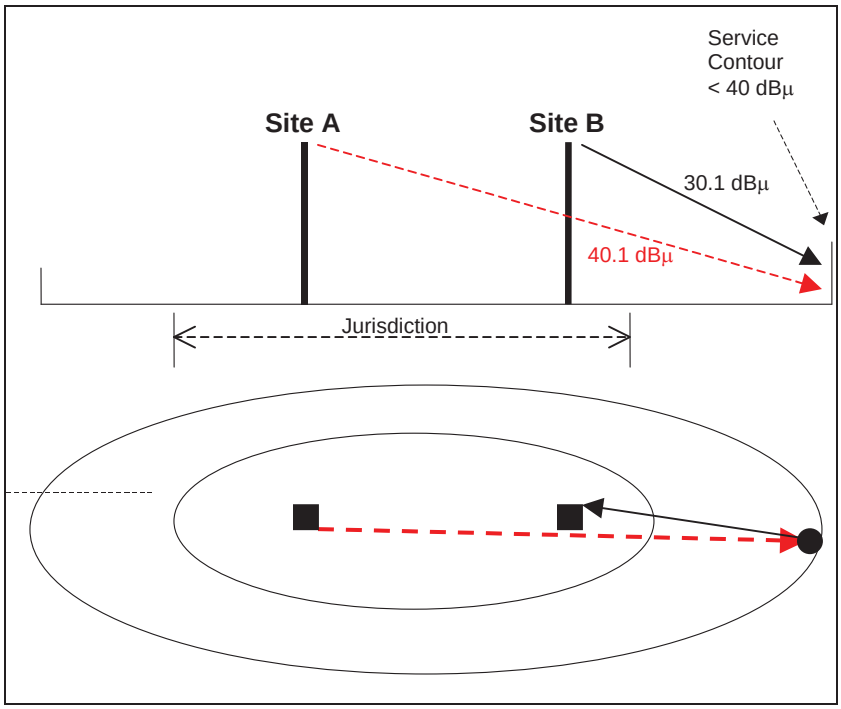


Figure 3a. Scenario 1 on of Use of Table 5

Scenario 2: Refer to bold data in Table 5. Site B is just inside the Service Area boundary and Service Contour must be <4 Miles outside Service Area boundary. Signal level at Service Contour from Site B is 33.5 dBμ. Signal level for Site A can be up to 38.4 dBμ. (See Appendix B for simple method to sum the powers of signals expressed in decibels.) The composite power level is 39.7 dBμ. Therefore, Site A can be slightly less than 11 miles from the Service Contour, or ~7 miles inside the Service Area boundary. The coverage perfomance for this example is shown in Table 3, above, for 15 dB building loss typical of suburban areas.

Scenario 3: Site B is just inside the Service Area boundary and Service Contour must be <3 Miles outside Service Area boundary. Signal level at Service Contour from Site B is 37.5 dBμ. Signal level for Site A can be up to 36.4 dBμ. (See Appendix B simple method to sum signals expressed in decibels.) The composite power level is 40.0 dBμ. Therefore, Site A can be ~13 miles from the Service Contour, or ~10 miles inside the Service Area boundary. The coverage perfomance for this example is shown in Table 4, above, for 10 dB building loss typical of rural areas.

Service Contour Extension Recommendation

The resulting recommendation for extending the 40 dBμ service contour beyond the service area boundary is:

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

Using this recommendation the 40 dBμ service contour can then be constructed based on the defined service area without having to perform an actual prediction.

Interfering Contour

Table 1 above shows that 36.4 dB of margin is required to provide 10 dB of co-channel capture and <1% probability of interference. Since the 40 dBμ service contour is beyond the edge of the service area, some relaxation in the level of interference is reasonable. Therefore, a 35 dB co-channel C/I ratio is recommended and is consistent with what is currently being licensed in the 821-824/866-869 MHz Public Safety band.

Co-Channel Interfering Contour Recommendation

- Allow the constructed 40 dBμ (50,50) service contour to extend beyond the edge of the defined service area by the distance indicated in Table 6.
- Allow the 5 dBμ (50,50) interfering contour to intercept but not overlap the 40 dBμ service contour.

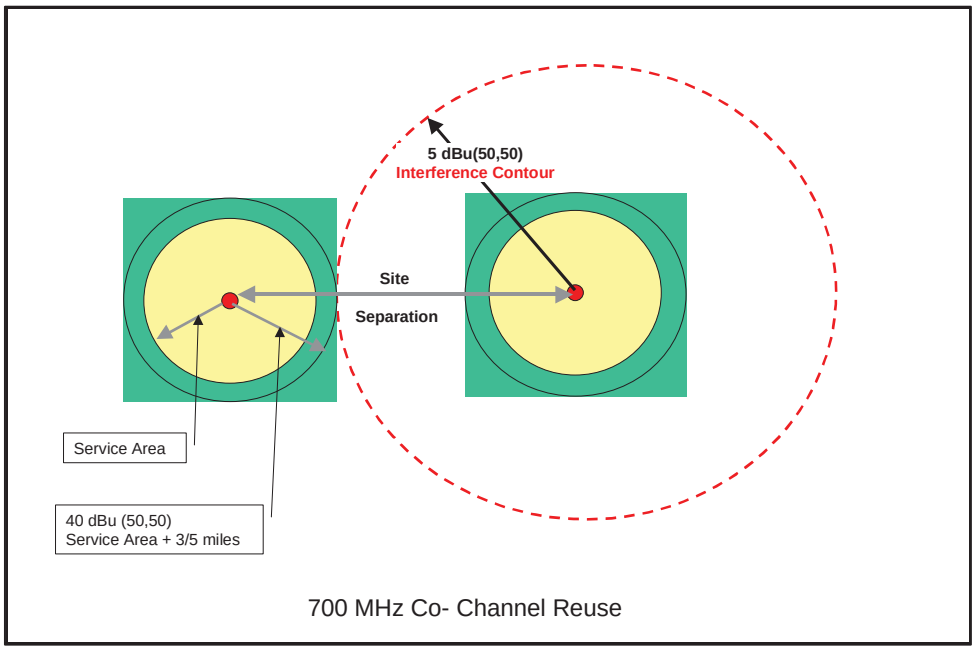


Figure 4 - Co-Channel Reuse Criterion

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 (e.g., 6 kHz ENBW). ACP defines the energy in a measured bandwidth that is typically wider than the receiver (e.g., 6.25 kHz channel bandwidth). 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 channel bandwidth is increased, the total amount of noise intercepted rises compared to the level initially defined in a 6.25 kHz channel bandwidth. However, the effect is diminished at very close spacings as the slope of the noise curve falls off rapidly. At greater spacings, the slope of the noise curve is essentially flat and the

receiver's filter limits the noise to a 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 muting in digital receivers. Therefore to maintain a DAQ = 3, at least 17 dB of fading margin plus the 26.4 dB margin for keeping the interference below 1% probability is required, for a total margin of 43.4 dB. However, this margin would be at the edge of the service area and the 40 dBμ service contour 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 P-25 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 spectrum blocks.

The assumption is that initial spectrum coordination sorts are based on 25 kHz bandwidth 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.

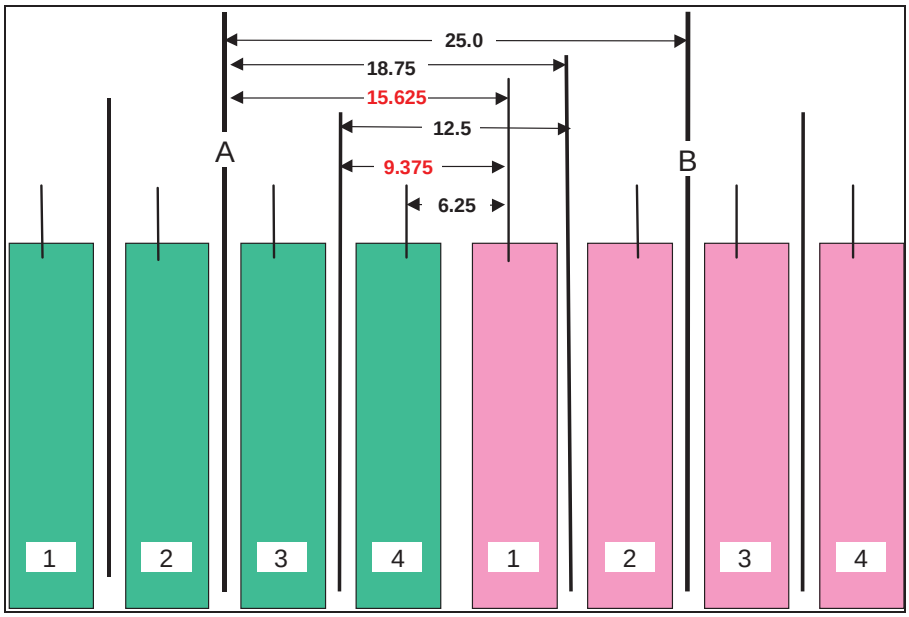


Figure 5, Potential Frequency Separations

Case	Spacing	ACCPR
25 kHz to 25 kHz	25 kHz	65 dB
25 kHz to 12.5 kHz	18.750 kHz	65 dB
25 kHz to 6.25 kHz	15.625 kHz	>40 dB
12.5 kHz to 12.5 kHz	12.5 kHz	65 dB
12.5 kHz to 6.25 kHz	9.375 kHz	>40 dB
6.25 kHz to 6.25 kHz	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 Project 25 Phase 2 narrowband 6.25 kHz channel. This pre-coordination based upon 25 kHz spectrum blocks still works if system designers and frequency coordinators keep this consideration in mind and move the edge 6.25 kHz channels inward away from the edge of the system. This approach allows a constant value of 65 dB ACCPR to be applied across all 25 kHz spectrum blocks regardless of what channel bandwidth is eventually deployed. There will also be additional coordination adjustments when exact system design details and antenna sites are known.

For spectrum blocks spaced farther away, it must be assumed that transmitter filtering, in addition to transmitter performance improvements due to greater frequency separation, will further reduce the ACCPR.

Therefore it is recommended that a consistent value of 65 dB ACCPR be used for the initial coordination of adjacent 25 kHz channel blocks. Rounding to be conservative due to the possibility of multiple sources allows the Adjacent Channel Interfering Contour to be approximately 20 dB above the 40 dBμ service contour, at 60 dBμ.

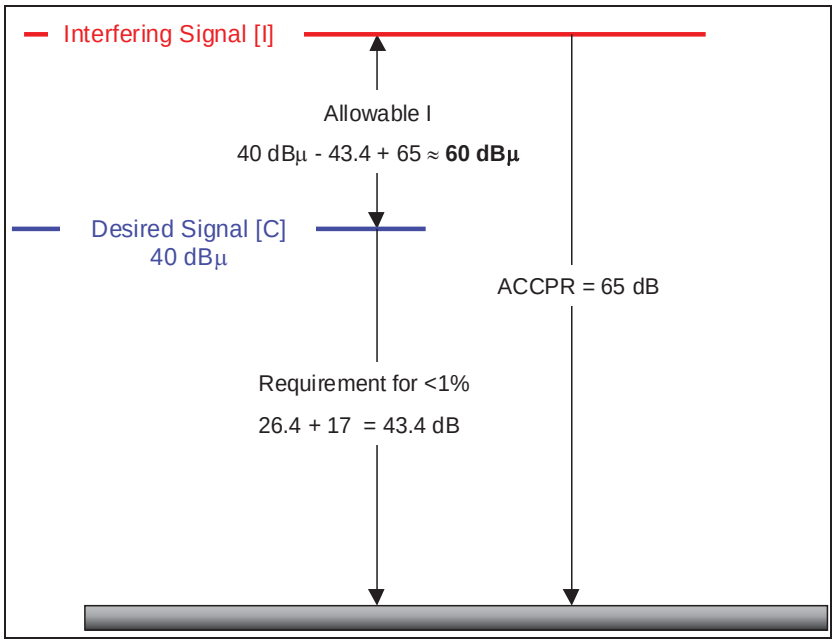


Figure 6 - Adjusted Adjacent 25 kHz Channel Interfering Contour Value

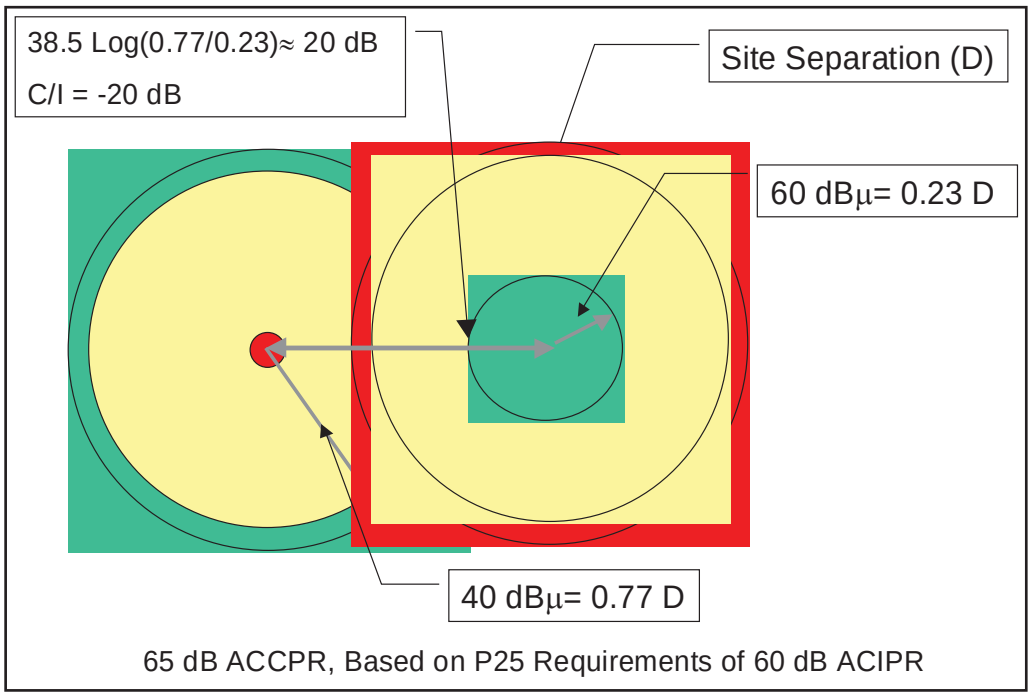


Figure 7 - Example Of Adjacent/Alternate Overlap Criterion

Adjacent Channel Interfering Contour Recommendation

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

Final Detailed Coordination

This simple method is only adequate for presorting large blocks of spectrum 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.

Sub-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, if 10% Interference is specified, the C/I implies 90% probability of successfully achieving the desired ratio. 1% interference means that there is a 99% probability of achieving the desired C/I.

$$\frac{C}{I}\% = \frac{1}{2} \bullet erfc\left(\frac{\frac{\mathrm{C}}{\mathrm{I}}\,\mathrm{margin}}{2\sigma}\right) \tag{1}$$

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.

$$\frac{C}{I}\% = Z \cdot \sqrt{2} \cdot \sigma \tag{2}$$

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

Location Standard Deviation (μ) 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.

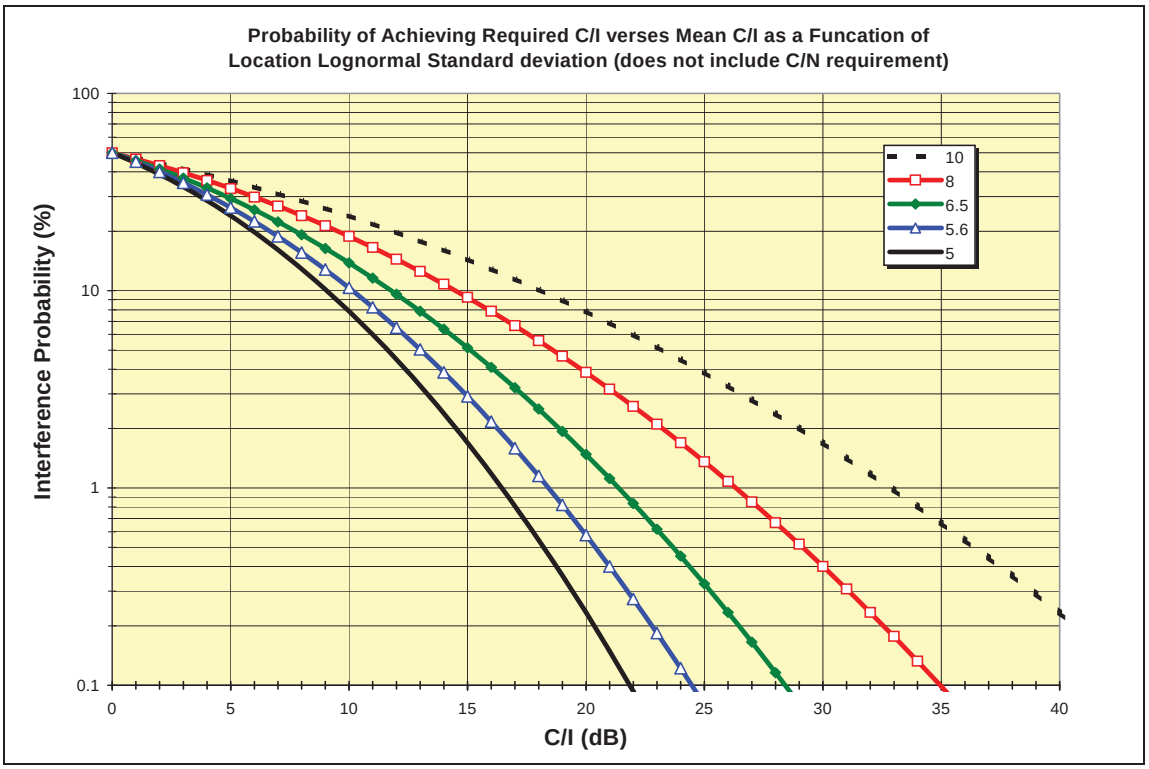


Figure A1, Probability of Achieving Required C/I As A Function Of Location Standard Deviation

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. Using 8 dB initially and changing to 5.6 dB provides additional flexibility necessary to complete the final system 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 in less degradation of the 90%.

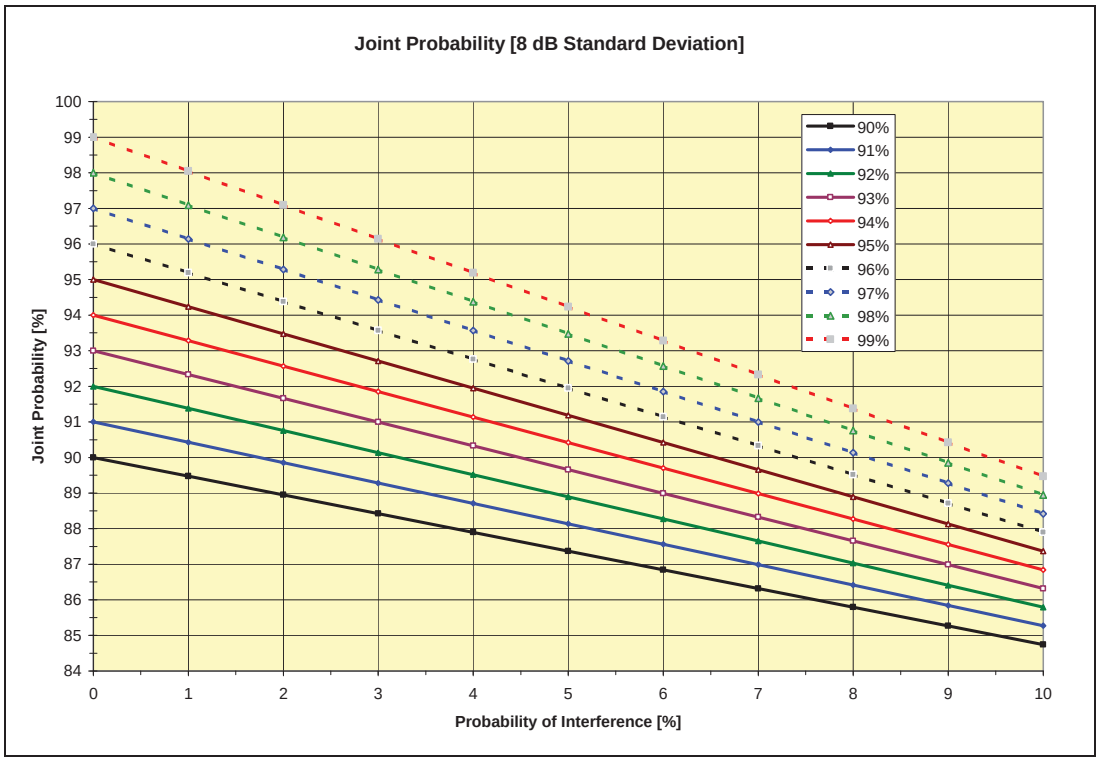
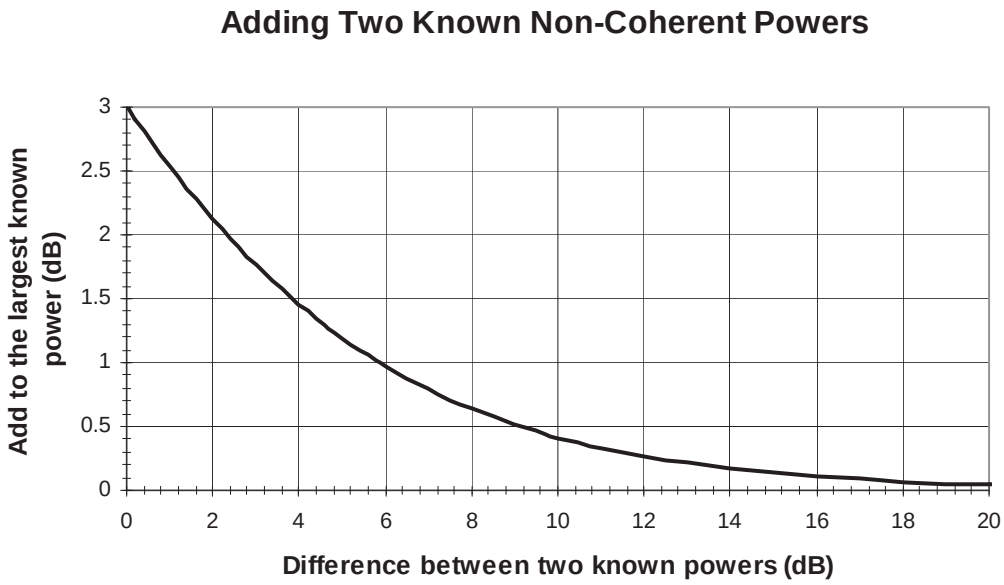


Figure A2 - Effect Of Joint Probability On The Composite Probability

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.

Sub-Appendix B



In order to sum the power of two or more signals expressed in dBm or dBμ, they level should be converted to a voltage level or a power level, summed (root of the sum of the squares), and then converted back to dBm or dBμ.

The chart above provides simple method to sum two power levels expressed in dBm or dBμ. First find the difference between the two signals on the horizontal axis. Go up to the curve and across to the vertical axis to find the power delta. Add the power delta to the larger of the two original signal levels.

Example 1: Signal A is 36.4 dBμ. Signal B is 37.5 dBμ. Difference is 1.1 dB. Power delta is about 2.5 dB. Composite signal level is 37.5 dBμ + 2.5 dB = 40 dBμ.

Example 2: Signal is –96.3 dBm. Signal B is –95.2 dBm. Difference is 1.1 dB. Power delta is about 2.5 dB. Composite signal level is –95.2 dBm + 2.5 dB = -92.7 dBm.

Appendix G – Channel Assignments by Geographic Area

Geographic Region	CAPRAD Channels TX	Center Frequency TX	Frequency Size in KHz	CAPRAD Channels RX	Center Frequency RX
District of Columbia					
	177-180	770.11250	25	1137-1140	800.11250
	297-300	770.86250	25	1257-1260	800.86250
	385-388	771.41250	25	1345-1348	801.41250
	453-456	771.83750	25	1413-1416	801.83750
	569-572	772.56250	25	1529-1532	802.56250
	613-616	772.83750	25	1573-1576	802.83750
	669-672	773.18750	25	1629-1632	803.18750
	789-792	773.93750	25	1749-1752	803.93750
State of Maryland					
Allegany County	13-16	769.08750	25	973-976	799.08750
	85-88	769.53750	25	1045-1048	799.53750
	289-292	770.81250	25	1249-1252	800.81250
	337-340	771.11250	25	1297-1300	801.11250
	385-388	771.41250	25	1345-1348	801.41250
	437-440	771.73750	25	1397-1400	801.73750
	477-480	771.98750	25	1437-1440	801.98750
	601-604	772.76250	25	1561-1564	802.76250
	669-672	773.18750	25	1629-1632	803.18750
	785-788	773.91250	25	1745-1748	803.91250
Anne Arundel County	81-82	769.50625	12.5	1041-1042	799.50625
	241-242	770.50625	12.5	1201-1202	800.50625
	281-282	770.75625	12.5	1241-1242	800.75625
	341-342	771.13125	12.5	1301-1302	801.13125
	393-394	771.45625	12.5	1353-1354	801.45625
	501-502	772.13125	12.5	1461-1462	802.13125
	549-550	772.43125	12.5	1509-1510	802.43125
	595-596	772.71875	12.5	1555-1556	802.71875
	795-796	773.96875	12.5	1755-1756	803.96875
	821-822	774.13125	12.5	1781-1782	804.13125

Baltimore County	17-20	769.11250	25	977-980	799.11250
	97-100	769.61250	25	1057-1060	799.61250
	205-208	770.28750	25	1165-1168	800.28750
	253-256	770.58750	25	1213-1216	800.58750
	457-460	771.86250	25	1417-1420	801.86250
	513-516	772.21250	25	1473-1476	802.21250
	609-612	772.81250	25	1569-1572	802.81250
	665-668	773.16250	25	1625-1628	803.16250
	745-748	773.66250	25	1705-1708	803.66250
	837-840	774.23750	25	1797-1800	804.23750
Baltimore City	49-52	769.31250	25	1009-1012	799.31250
	165-168	770.03750	25	1125-1128	800.03750
	213-216	770.33750	25	1173-1176	800.33750
	289-292	770.81250	25	1249-1252	800.81250
	333-336	771.08750	25	1293-1296	801.08750
	373-376	771.33750	25	1333-1336	801.33750
	417-420	771.61250	25	1377-1380	801.61250
	465-468	771.91250	25	1425-1428	801.91250
	521-524	772.26250	25	1481-1484	802.26250
	561-564	772.51250	25	1521-1524	802.51250
	709-712	773.43750	25	1669-1672	803.43750
	753-756	773.71250	25	1713-1716	803.71250
	829-832	774.18750	25	1789-1792	804.18750
	869-872	774.43750	25	1829-1832	804.43750
	913-916	774.71250	25	1873-1876	804.71250
Calvert County	361-364	771.26250	25	1321-1324	801.26250
	509-512	772.18750	25	1469-1472	802.18750
	573-576	772.58750	25	1533-1536	802.58750
	637-640	772.98750	25	1597-1600	802.98750
	865-868	774.41250	25	1825-1828	804.41250
	941-944	774.88750	25	1901-1904	804.88750

Caroline County	209-212	770.31250	25	1169-1172	800.31250
	321-324	771.01250	25	1281-1284	801.01250
	409-412	771.56250	25	1369-1372	801.56250
	481-484	772.01250	25	1441-1444	802.01250
	541-544	772.38750	25	1501-1504	802.38750
	581-584	772.63750	25	1541-1544	802.63750
	633-636	772.96250	25	1593-1596	802.96250
	705-708	773.41250	25	1665-1668	803.41250
Carroll County	41-44	769.26250	25	1001-1004	799.26250
	429-432	771.68750	25	1389-1392	801.68750
	533-536	772.33750	25	1493-1496	802.33750
	617-620	772.86250	25	1577-1580	802.86250
	905-908	774.66250	25	1865-1868	804.66250
Cecil County	249-252	770.56250	25	1209-1212	800.56250
	493-496	772.08750	25	1453-1456	802.08750
	545-548	772.41250	25	1505-1508	802.41250
	589-592	772.68750	25	1549-1552	802.68750
	637-640	772.98750	25	1597-1600	802.98750
Charles County	213-216	770.33750	25	1173-1176	800.33750
	409-412	771.56250	25	1369-1372	801.56250
	521-524	772.26250	25	1481-1484	802.26250
	581-584	772.63750	25	1541-1544	802.63750
	717-720	773.48750	25	1677-1680	803.48750
Dorchester County	165-168	770.03750	25	1125-1128	800.03750
	293-296	770.83750	25	1253-1256	800.83750
	353-356	771.21250	25	1313-1316	801.21250
	401-404	771.51250	25	1361-1365	801.51250
	453-456	771.83750	25	1413-1416	801.83750
	493-496	772.08750	25	1453-1456	802.08750
	589-592	772.68750	25	1549-1552	802.68750
	829-832	774.18750	25	1789-1792	804.18750

Frederick County	293-296	770.83750	25	1253-1256	800.83750
	345-348	771.16250	25	1305-1308	801.16250
	485-488	772.03750	25	1445-1448	802.03750
	585-588	772.66250	25	1545-1548	802.66250
	865-868	774.41250	25	1825-1828	804.41250
	941-944	774.88750	25	1901-1904	804.88750
Garrett County	129-132	769.81250	25	1089-1092	799.81250
	205-208	770.28750	25	1165-1168	800.28750
	353-356	771.21250	25	1313-1316	801.21250
	461-464	771.88750	25	1421-1424	801.88750
	541-544	772.38750	25	1501-1504	802.38750
	613-616	772.83750	25	1573-1576	802.83750
	745-748	773.66250	25	1705-1708	803.66250
Harford County	129-132	769.81250	25	1089-1092	799.81250
	357-360	771.23750	25	1317-1320	801.23750
	397-400	771.48750	25	1357-1360	801.48750
	505-508	772.16250	25	1465-1468	802.16250
	553-556	772.46250	25	1513-1516	802.46250
	597-600	772.73750	25	1557-1560	802.73750
Howard County	245-248	770.53750	25	1205-1208	800.53750
	353-356	771.21250	25	1313-1316	801.21250
	401-404	771.51250	25	1361-1364	801.51250
	473-476	771.96250	25	1433-1436	801.96250
	541-544	772.38750	25	1501-1504	802.38750
	601-604	772.76250	25	1561-1564	802.76250
	701-704	773.38750	25	1661-1664	803.38750
Kent County	89-92	769.56250	25	1049-1052	799.56250
	161-164	770.01250	25	1121-1124	800.01250
	425-428	771.66250	25	1385-1388	801.66250
	525-528	772.28750	25	1485-1488	802.28750
	905-908	774.66250	25	1865-1868	804.66250

Montgomery County	13-16	769.08750	25	973-976	799.08750
	53-56	769.33750	25	1013-1016	799.33750
	137-140	769.86250	25	1097-1100	799.86250
	209-212	770.31250	25	1169-1172	800.31250
	365-368	771.28750	25	1325-1328	801.28750
	413-416	771.58750	25	1373-1376	801.58750
	461-464	771.88750	25	1421-1424	801.88750
	517-520	772.23750	25	1477-1480	802.23750
	577-580	772.61250	25	1537-1540	802.61250
	713-716	773.46250	25	1673-1676	803.46250
	757-760	773.73750	25	1717-1720	803.73750
	877-880	774.48750	25	1837-1840	804.48750
	917-920	774.73750	25	1877-1880	804.73750
Prince George's County	45-46	769.28125	12.5	1005-1006	799.28125
	93-94	769.58125	12.5	1053-1054	799.58125
	121-122	769.75625	12.5	1081-1082	799.75625
	169-170	770.05625	12.5	1129-1130	800.05625
	201-202	770.25625	12.5	1161-1162	800.25625
	217-218	770.35625	12.5	1177-1178	800.35625
	259-260	770.61875	12.5	1219-1220	800.61875
	329-330	771.05625	12.5	1289-1290	801.05625
	349-350	771.18125	12.5	1309-1310	801.18125
	377-378	771.35625	12.5	1337-1338	801.35625
	437-438	771.73125	12.5	1397-1398	801.73125
	441-442	771.75625	12.5	1401-1402	801.75625
	447-448	771.79375	12.5	1407-1408	801.79375
	489-490	772.05625	12.5	1449-1450	802.05625
	495-496	772.09375	12.5	1455-1456	802.09375
	557-558	772.48125	12.5	1517-1518	802.48125
	621-622	772.88125	12.5	1581-1582	802.88125
	627-628	772.91875	12.5	1587-1588	802.91875
	661-662	773.13125	12.5	1621-1622	803.13125
	677-678	773.23125	12.5	1637-1638	803.23125
	741-742	773.63125	12.5	1701-1702	803.63125
	781-782	773.88125	12.5	1741-1742	803.88125
	825-826	774.15625	12.5	1785-1786	804.15625
	833-834	774.20625	12.5	1793-1794	804.20625
	909-910	774.68125	12.5	1869-1870	804.68125

Queen Anne County	41-44	769.26250	25	1001-1004	799.26250
	369-372	771.31250	25	1329-1332	801.31250
	433-436	771.71250	25	1393-1396	801.71250
	533-536	772.33750	25	1493-1496	802.33750
	605-608	772.78750	25	1565-1568	802.78750
Somerset County	53-56	769.33750	25	1013-1016	799.33750
	97-100	769.61250	25	1057-1060	799.61250
	205-208	770.28750	25	1165-1168	800.28750
	369-372	771.31250	25	1329-1332	801.31250
	421-424	771.63750	25	1381-1384	801.63750
	469-472	771.93750	25	1429-1432	801.93750
	513-516	772.21250	25	1473-1476	802.21250
	605-608	772.78750	25	1565-1568	802.78750
	717-720	773.48750	25	1677-1680	803.48750
	757-760	773.73750	25	1717-1720	803.73750
	905-908	774.66250	25	1865-1868	804.66250
St. Mary's County	133-136	769.83750	25	1093-1096	799.83750
	245-248	770.53750	25	1205-1208	800.53750
	325-328	771.03750	25	1285-1288	801.03750
	425-428	771.66250	25	1385-1388	801.66250
	601-604	772.76250	25	1561-1564	802.76250
	701-704	773.38750	25	1661-1664	803.38750
	753-756	773.71250	25	1713-1716	803.71250
Talbot County	85-88	769.53750	25	1045-1048	799.53750
	285-288	770.78750	25	1245-1248	800.78750
	345-348	771.16250	25	1305-1308	801.16250
	461-464	771.88750	25	1421-1424	801.88750
	517-520	772.23750	25	1477-1478	802.23750
	617-620	772.86250	25	1577-1580	802.86250
	749-752	773.68750	25	1709-1712	803.68750
	873-876	774.46250	25	1833-1836	804.46250

Washington County	133-136	769.83750	25	1093-1096	799.83750
	361-364	771.26250	25	1321-1324	801.26250
	409-412	771.56250	25	1369-1372	801.56250
	637-640	772.98750	25	1597-1600	802.98750
	717-720	773.48750	25	1677-1680	803.48750
Wicomico County	17-20	769.11250	25	977-980	799.11250
	89-92	769.56250	25	1049-1052	799.56250
	129-132	769.81250	25	1089-1092	799.81250
	177-180	770.11250	25	1137-1140	800.11250
	217-220	770.36250	25	1177-1180	800.36250
	281-284	770.76250	25	1241-1244	800.76250
	329-332	771.06250	25	1289-1292	801.06250
	393-396	771.46250	25	1353-1356	801.46250
	437-440	771.73750	25	1397-1400	801.73750
	529-532	772.31250	25	1489-1492	802.31250
	569-572	772.56250	25	1529-1532	802.56250
	613-616	772.83750	25	1573-1576	802.83750
	673-676	773.21250	25	1633-1636	803.21250
	741-744	773.63750	25	1701-1704	803.63750
	785-788	773.91250	25	1745-1748	803.91250
	837-840	774.23750	25	1797-1800	804.23750
	913-916	774.71250	25	1873-1876	804.71250
Worcester County	41-44	769.26250	25	1001-1004	799.26250
	81-84	769.51250	25	1041-1044	799.51250
	169-172	770.06250	25	1129-1132	800.06250
	253-256	770.58750	25	1213-1216	800.58750
	297-300	770.86250	25	1257-1260	800.86250
	357-360	771.23750	25	1317-1320	801.23750
	405-408	771.53750	25	1365-1368	801.53750
	457-460	771.86250	25	1417-1420	801.86250
	497-500	772.11250	25	1457-1460	802.11250
	549-552	772.43750	25	1509-1512	802.43750
	593-596	772.71250	25	1553-1556	802.71250
	825-828	774.16250	25	1785-1788	804.16250
	869-872	774.43750	25	1829-1832	804.43750

Commonwealth of Virginia					
City of Alexandria	161-164	770.01250	25	1121-1124	800.01250
	251-252	770.56875	12.5	1211-1212	800.56875
	321-324	771.01250	25	1281-1284	801.01250
	417-420	771.61250	25	1377-1380	801.61250
	471-472	771.94375	12.5	1431-1432	801. 94375
	497-500	772.11250	25	1457-1460	802.11250
	537-540	772.36250	25	1497-1500	802.36250
Arlington County	85-88	769.53750	25	1045-1048	799.53750
	337-340	771.11250	25	1297-1300	801.11250
	405-408	771.53750	25	1365-1368	801.53750
	421-424	771.63750	25	1381-1384	801.63750
	465-466	771.90625	12.5	1425-1426	801. 90625
	481-484	772.01250	25	1441-1444	802.01250
	525-528	772.28750	25	1485-1488	802.28750
	609-612	772.81250	25	1569-1572	802.81250
Fairfax County	129-132	769.81250	25	1089-1092	799.81250
	171-172	770.06875	12.5	1131-1132	800.06875
	285-288	770.78750	25	1245-1248	800.78750
	331-332	771.06875	12.5	1291-1292	801.06875
	357-360	771.23750	25	1317-1320	801.23750
	397-400	771.48750	25	1357-1360	801.48750
	439-440	771.74375	12.5	1399-1400	801.74375
	505-508	772.16250	25	1465-1468	802.16250
	545-548	772.41250	25	1505-1508	802.41250
	589-592	772.68750	25	1549-1552	802.68750
	633-636	772.96250	25	1593-1596	802.96250
	705-708	773.41250	25	1665-1668	803.41250
	749-752	773.68750	25	1709-1712	803.68750
	797-800	773.98750	25	1757-1760	803.98750
	827-828	774.16875	12.5	1787-1788	804.16875
	861-864	774.38750	25	1821-1824	804.38750
	901-904	774.63750	25	1861-1864	804.63750
	945-948	774.91250	25	1005-1908	804.91250

Fauquier County	49-52	769.31250	25	1009-1012	799.31250
	125-128	769.78750	25	1085-1088	799.78750
	393-396	771.46250	25	1353-1356	801.46250
	573-576	772.58750	25	1533-1536	802.58750
	629-632	772.93750	25	1589-1592	802.93750
	793-796	773.96250	25	1753-1756	803.96250
	837-840	774.23750	25	1797-1800	804.23750
Loudoun County	165-168	770.03750	25	1125-1128	800.03750
	219-220	770.36875	12.5	1179-1180	800.36875
	325-328	771.03750	25	1285-1288	801.03750
	351-352	771.19375	12.5	1311-1312	801.19375
	381-384	771.38750	25	1341-1344	801.38750
	425-428	771.66250	25	1385-1388	801.66250
	447-448	771.79375	12.5	1407-1408	801.79375
	493-494	772.08125	12.5	1453-1454	802.08125
	565-568	772.53750	25	1525-1528	802.53750
	627-628	772.91875	12.5	1587-1588	802.91875
	663-664	773.14375	12.5	1623-1624	803.14375
	673-676	773.21250	25	1633-1636	803.21250
Prince William County	17-20	769.11250	25	977-980	799.11250
	57-60	769.36250	25	1017-1020	799.36250
	369-372	771.31250	25	1329-1332	801.31250
	457-460	771.86250	25	1417-1420	801.86250
	513-516	772.21250	25	1473-1476	802.21250
	553-556	772.46250	25	1513-1516	802.46250
	597-600	772.73750	25	1557-1560	802.73750
	873-876	774.46250	25	1833-1836	804.46250
	913-916	774.71250	25	1873-1876	804.71250

Stafford County	41-44	769.26250	25	1001-1004	799.26250
	89-92	769.56250	25	1049-1052	799.56250
	173-174	770.08125	12.5	1133-1134	800.08125
	249-250	770.55625	12.5	1209-1210	800.55625
	333-334	771.08125	12.5	1293-1294	801.08125
	379-380	771.36875	12.5	1339-1340	801.36875
	429-430	771.68125	12.5	1389-1390	801.68125
	431-432	771.69375	12.5	1391-1392	801.69375
	479-480	771.99375	12.5	1439-1440	801.99375
	529-530	772.30625	12.5	1489-1490	802.30625
	531-532	772.31875	12.5	1491-1492	802.31875
	617-618	772.85625	12.5	1577-1578	802.85625
	619-620	772.86875	12.5	1579-1580	802.86875
	785-786	773.90625	12.5	1745-1746	803.90625
	829-830	774.18125	12.5	1789-1790	804.18125
	831-832	774.19375	12.5	1791-1792	804.19375

Appendix H - SAMPLE NOTIFICATIONS BY RPC TO SECONDARY TV STATIONS

NOTIFICATION OF COMMENCEMENT OF PLANNING PROCESS

WZDC-TV
Onida Capital, Inc.
2000 N. 14th Street Suite 400
Arlington, VA 22201

To Whom It May Concern:

This letter serves as formal notification of the commencement of the 700 MHz Regional Planning process for the District of Columbia, State of Maryland, and Northern Virginia. By this letter, WZDC-TV, channel 64, is put on notice that its operations are secondary to future, primary public safety land mobile operations. Low power TV stations and TV translators may not cause interference to public safety operations and must accept any interference they might receive from those operations.[14] You will be notified when Region 20's 700 MHz Plan has been approved by the FCC and again as public safety systems begin to be implemented in the band.

Sincerely,

G. Edward Ryan, II, Chairperson of Region 20
Department of Natural Resources
580 Taylor Avenue, E-3
Annapolis, MD 21401
P: 410-260-8734
F: 410-260-8377
E: gryan@dnr.state.md.us

[14] The Report and Order on ET Docket No. 97-157 (FCC 97-421) for the "Reallocation of Television Channels 60-69, the 746-806 MHz Band," clearly defined Land Mobile operations as a "primary service" and that Low power TV and TV translator operations are secondary to all primary services in this band (see paragraghs 14 and 25-31).

List of Television Stations Affected by Region 20 700 MHz Plan

Low-power stations and others that must operate on a secondary non-interfering basis to public safety are printed in red.

State	County	Channel	Call Sign	Location	Latitude NAD83	Longitude NAD83
DC	District of Columbia	64	WZDC-LP	Washington	38°57'44"N	77°1'36"W
MD	Anne Arundel County	63	WWTD-LP	Annapolis	38°59'13"N	76°33'12"W
	Baltimore County	63	W28BY	Baltimore	39°17'21"N	76°36'52"W
		67	WMPB	Baltimore	39°26'53"N	76°46'51"W
		69	WQAW-LP	Salisbury	39°15'18.3~	76°40'32"W
	Dorchester County	69	WQAW-LP	Salisbury	38°37'27.5~	75°53'20.2"W
	Frederick County	62	WFPT	Frederick	39°15'37.62	77°18'44.65"
	Queen Anne's County	69	WQAW-LP	Salisbury	38°37'27.5"	75°53'20.2"W
	Washington County	68	WJAL	Hagerstown	39°53'31"N	77°58'2"W
	Wicomico County	67	W67EA	Salisbury	38°23'9"N	75°35'32"W
		69	WQAW-LP	Salisbury	38°23'49"N	75°38'49"W
	Worcester County	63	W63DC	Ocean City	38°18'15"N	75°12'15"W
		65	W65EF	Ocean City	38°18'15"N	75°12'15"W
		69	NEW	Ocean City	38°22'58"N	75°10'34"W
		69	WQAW-LP	Salisbury	38°23'49"N	75°38'49"W
VA	Stafford County	69	960920IL	Fredericksburg	38°17'4"N	77°35'41"W

Appendix I – DTV Transition Procedures

DIGITAL TELEVISION (DTV) 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."[1] By Congressional direction in the Balanced Budget Act of 1997, the FCC reallocated 24 MHz of spectrum to Public Safety services in the ***763-775 MHz and 793-805***[15] 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" [2].

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 until other NTSC stations have ceased operations and returned a channel below 60 to the FCC.

[15] Amended pursuant to 2nd Report and Order, Docket WT 96-86

[1]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*).
[2] 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.

2) their license does not expire until after 2006 (most are licensed into 2007 or 2008).

Protection of Public Safety From Future TV/DTV Stations

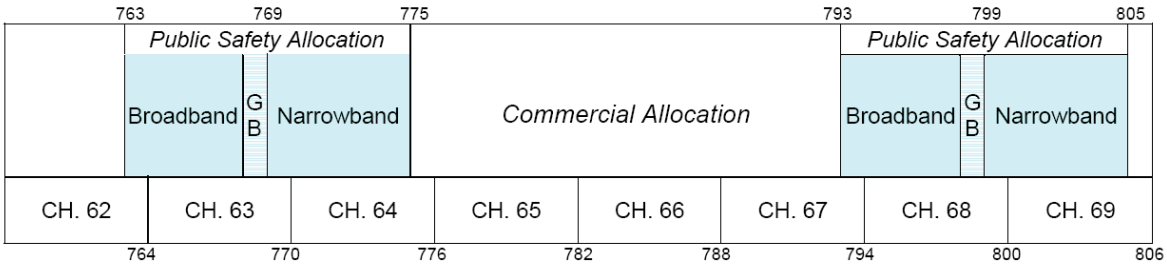
Public safety base and mobile operations must have a safe distance between the co-channel or adjacent TV and DTV systems. This typically means that a co-channel and adjacent channel base and mobile system cannot operate in areas where TV stations already exist. The public safety systems that will operate in the 700 MHz band for some locations in the U.S. and its possessions must wait until the transition period is over and the TV/DTV stations have moved to other channels before beginning operations. In other areas, channels will be available for public safety operations. During the transition period, public safety stations must be acutely aware of the TV allocations for both TV and DTV stations. The FCC wants the number of situations where the public safety licensee has to coordinate its station with the existing TV stations kept to a minimum. The Commission's decisions in the reallocation of spectrum to DTV implemented two requirements which will help public safety systems to protect TV/DTV stations and reduce the number of coordinations. The first requirement is that full power UHF-TV stations can no longer apply for channels 60-69 or modifications in channels 60-69 that would increase the stations' service areas, which creates a known environment for public safety licensees.[3] The second requirement is that since only existing TV station licensees can apply for DTV channels, the applicants and their proposed locations are already known.[4]

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
Puerto Rico	Aguadilla	12	69	691.8	665

[3] *See Reallocation Report and Order*, 12 FCC Rcd 22,969-22,970. Stations with existing channel 60-69 TV construction permits must complete their stations and file for a license by January 2, 2001.
[4] *See DTV Sixth Report and Order*, 12 FCC Rcd 14,739-14,754; *See also* In the Matter of Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service, *Memorandum Opinion and Order on Reconsideration of the Sixth Report and Order* in MM Docket No. 87-268, 13 FCC Rcd 7418 (1998).

Also, the low power TV stations and translators already on channels 60-69 are secondary and must cease operations if they cause harmful interference when a primary service, like land mobile, comes into operation. The secondary Low Power TV stations already on channels 60-69 cannot apply for the new Class A protection status.

Revised 700 MHz Band Plan for Public Safety Services



The FCC designated ***769-775*** MHz (TV Channels 63 and 64) for base-to-mobile transmissions and ***799-805*** MHz (TV Channels 68 and 69) for mobile-to-base communications. In addition, base transmit channels in TV Channel 63 are paired with mobile channels in TV Channel 68 and likewise that base channels in TV Channel 64 are paired with mobile channels in TV Channel 69. This provides 30 MHz separation between base and mobile transmit channel center frequencies. This band plan was suggested because of the close proximity of TV Channels 68 and 69 to the 806-824 MHz band, which already contains the transmit channels for mobile and portable radios (base receive).

Mobile transmissions are allowed on any part of the 700 MHz band, not just the upper 12 MHz. This will facilitate direct mobile-to-mobile communications (*i.e.*, not through a repeater) that are often employed at the site of an incident, where wide area communications facilities are not available or desired. Allowing mobile transmissions on both halves of a paired channel is generally consistent with FCC rules governing use of other public safety bands.

Non-uniform TV Channel Pairing

There are currently geographical areas where, either licensed or otherwise protected full-service analog or new digital, television stations are currently authorized to operate on TV Channels 62, 63, 64, 65, 67, 68, and 69.[5] During the DTV transition period, an incumbent TV station occupying one or more of the four Public Safety channels (63, 64, 68, 69) or the three adjacent channels (62, 65, 67) may preclude pairing of the channels in accordance with the band plan defined above. Therefore, to provide for cases where standard pairing is not practicable during the DTV transition period, the FCC will allow the RPCs to consider pairing base-to-mobile channels in TV Channel 63 with mobile-to-base channels in TV Channel 69 and/or base-to-mobile channels in TV Channel 64 with mobile-to-base channels in TV Channel 68. Because such non-standard channel pairing may cause problems when the band becomes more fully occupied, the FCC expects the RPCs to permit such non-standard channel pairing only when absolutely necessary, and the FCC may require stations to return to standard channel pairing after the DTV transition period is over. However, the FCC will not permit non-standard channel pairing on the nationwide interoperability channels in the 700 MHz band because of the need for nationwide uniformity of these channels.

At least three issues must be considered before deciding upon non-uniform channel pairing:

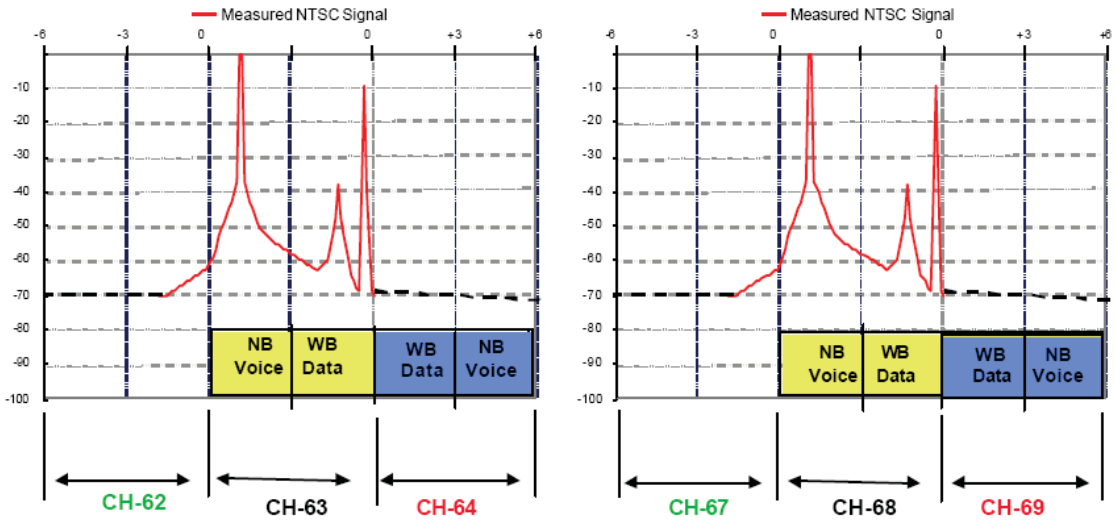
1) Preliminary analysis, looking at current incumbent TV stations, shows few geographic areas where non-uniform pairing allows early implementation of 700 MHz systems. As DTV Transition progresses and TV stations vacate the band, this situation might change.

2) If interoperability channels must be uniform, operation on I/O channels will be blocked until all incumbent TV stations are cleared, even though General Use channels may be implemented earlier.

TV/DTV Protection

During the DTV Transition period, 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.

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

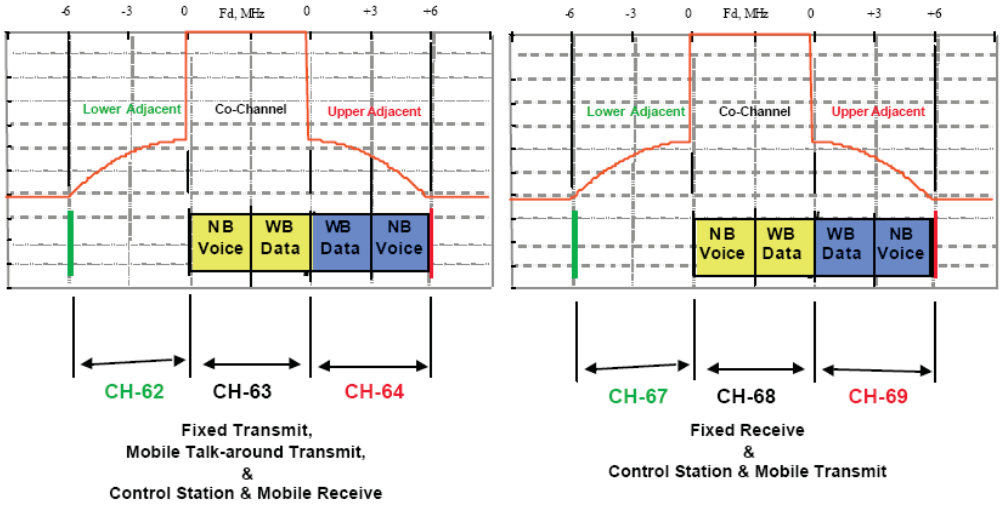


Fixed Transmit,
Mobile Talk-around Transmit,
&
Control Station & Mobile Receive

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

For public safety channel pair 64/69, public safety must consider five TV/DTV channels; co-channels 64 and 69, as well as, adjacent channels 63, 65, and 68. It may only take one TV/DTV station to block operations on one, the other, or both public safety channel pairs. For a public safety system at 500 watts ERP and 500 ft HAAT, co-channel TV stations can block a 120 mile radius and adjacent channel TV/DTV stations can block a 90 mile radius.

Since base stations transmitters are located only on channels 63 and 64, LMR mobile only TV/DTV protection spacing on channels 68 and 69 may be shorter than LMR base TV/DTV protection on channels 63 & 64.

TV/DTV Protection Criteria

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.[6] 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. 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[7] 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

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

[7] 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

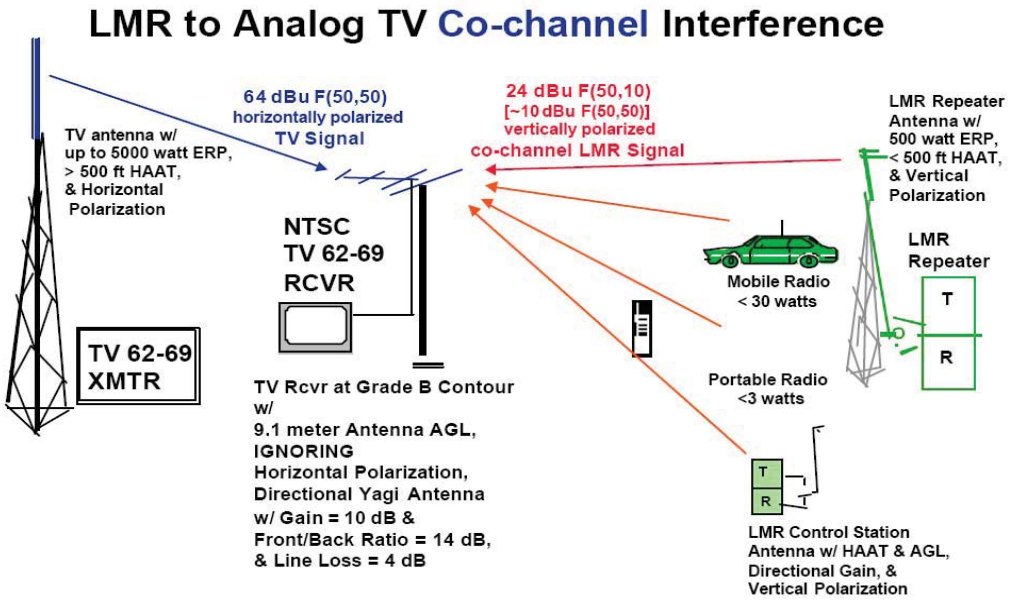
than the amplitude of the undesired signal at the Grade B service contour. A 40 dB protection ratio means the desired TV signal is 100 times greater.

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.[8] 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.

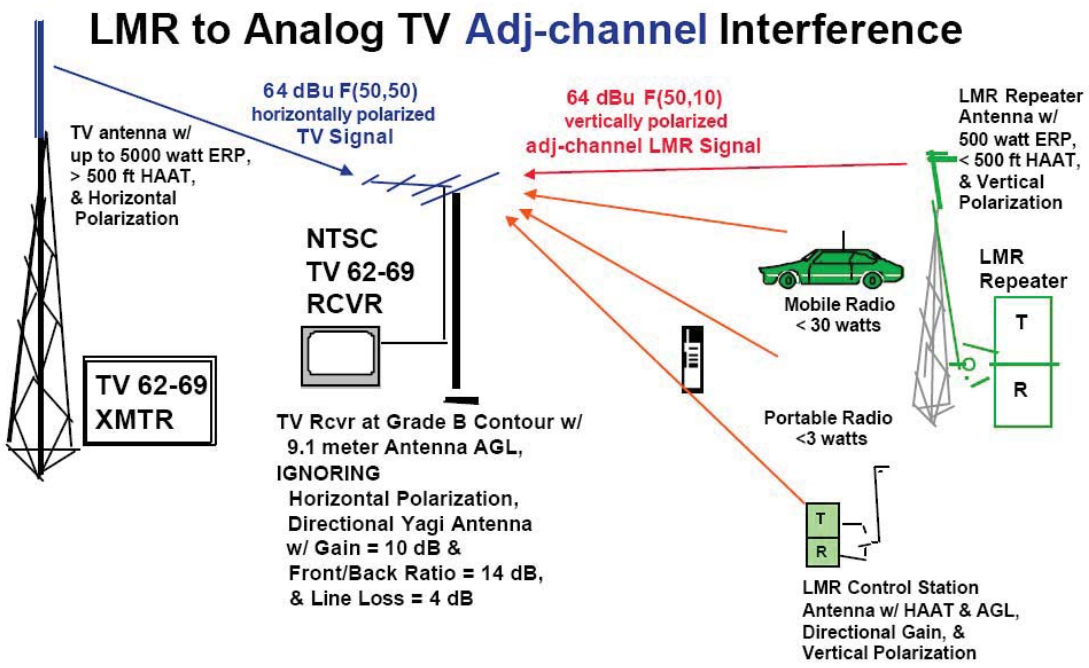
Co-channel land mobile base station transmitters are limited to a maximum signal strength at the hypothetical TV Grade B contour 40 dB D/U below desired 64 dBu F(50,50) analog TV signal level, or 24 dBu F(50,10).[9] The FCC adopted a 0 dB D/U signal ratio for adjacent channel operations.

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.



[8] *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*).

[9] 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.

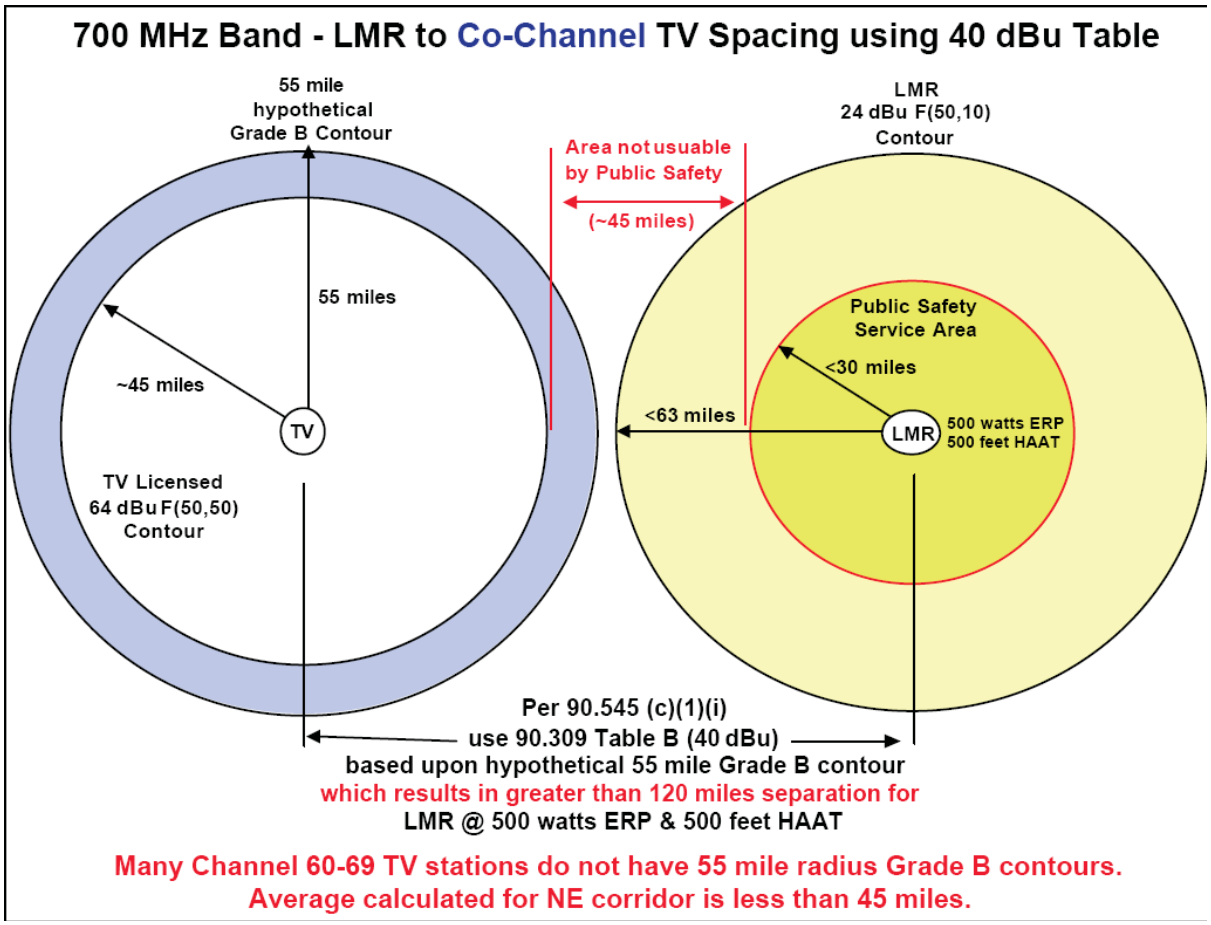
Control and mobile stations (including portables) are limited in height (200 ft for control stations, 20 ft for mobiles/portables) and power (200 watts ERP for control stations, 30 watts for mobiles, 3 watts for portables). Mobiles and control stations shall afford protection to co-channel and adjacent 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.

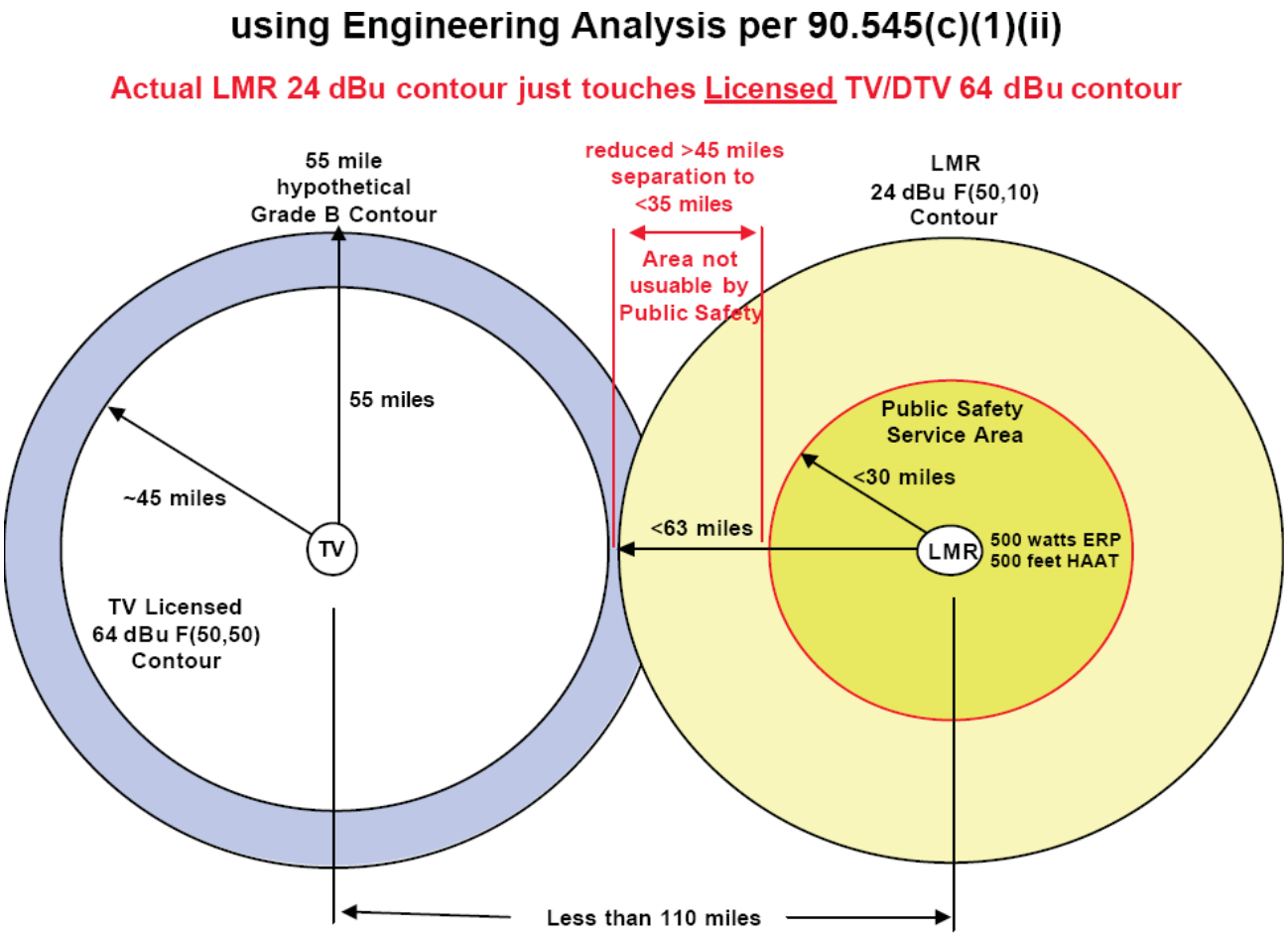
Engineering Analysis

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

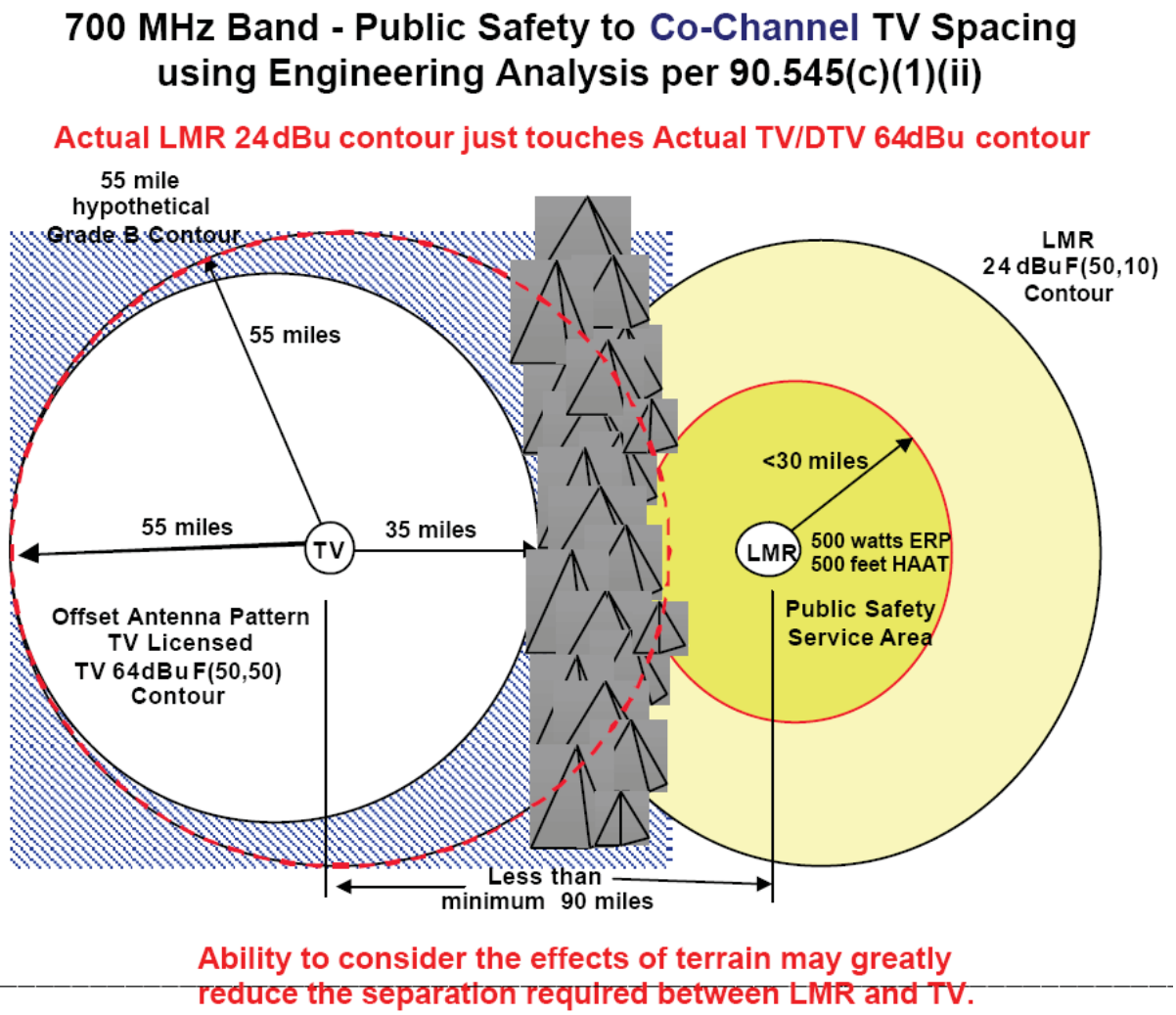
the TV Grade B contour (or DTV equivalent), then engineering analysis may be submitted to the FCC with the application.



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



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).

Appendix J – Dispute Resolution

INTRODUCTION

The Regional Committee is established under 47 CFR §90.527 of the FCC's rules and regulations which came into effect on June 22, 2001. It is an independent Committee apart from the Federal Communications Commission with authority to evaluate application for public safety uses of the spectrum allocated under FCC Docket 96-86. In addition, appeals from decisions made with respect to a variety of matters regulated by the Regional Committee will be heard. The formal requirements of the appeal process are set out below.

In order to ensure that the appeal process is open and understandable to the public, the Regional Committee has developed this procedure. Those involved in the appeal process can expect the Committee and its members to follow the procedures (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 fairly, effectively and completely on the appeal. In addition, the Committee may dispense with compliance with 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 Regional Plan and will be made available to the public.

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

Appeals Committee

Members

The Regional Chair may organize the Committee into Sub-Committees, each comprised of one or more members, the Appeals Sub-Committee is one of those Sub-Committees.

Where an appeal is scheduled to be heard by this Sub-Committee the chair is determined as follows:

(a) if the chair of the Committee is on the Sub-Committee, he/she will be the chair;

(b) if the chair of the Committee is not on the Sub-Committee but the vice-chair is, the vice-chair will be the chair; and

(c) if neither the chair nor the vice-chair is on the Sub-Committee, the Regional Committee will designate one of the members to be the chair.

Withdrawal or Disqualification of a Committee Member on the Grounds of Bias

Where the chair or a Committee member becomes aware of any facts that would lead an informed 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 conducting 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 Committee

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

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.

THE APPEAL PROCESS

Filing an Appeal

What can be appealed

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

Who can appeal

An official of the entity who filed the original application to the Regional Committee 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 Regional Committee. The notice of appeal may be "delivered" by mail, courier, or hand delivered to the office of the Chair and Members of the 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:

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

Time limit for filing the appeal

To appeal a determination or allocation the entity who 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 delivered within the time required, the right to an appeal is lost. However, the Committee is allowed to extend the deadline, either before or after its expiration based upon a majority plus one vote of the Committee.

Extension of time to appeal

The Committee 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 Committee, 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 Committee 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 Committee may reject a notice of appeal if:

(a) it is determined that the appellant does not have standing to appeal; or
(b) the Committee does not have jurisdiction over the subject matter or the remedy sought.

Before a notice of appeal is rejected, the 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 Committee has the discretion to add any other person who 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 Committee as early as possible. The written request should contain the following information:

a. The name, address, telephone and fax number, if any, of the person submitting the request;

b. A detailed description of how the person is "affected" by the notice of appeal and

c. The reasons why the person should be included in the appeal; and

d. The signature of the person submitting the request.

Intervener status

The Committee may also invite or permit someone 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.

Someone wanting to take part in an appeal as an intervener should send a written request to the Committee. The written request should contain the following information: (to be determined by RPC)

Prior to inviting or permitting a person to participate in a proceeding as an intervener, or deciding on the extent of that participation, the 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 Committee will determine the appropriate type of appeal after a complete notice of appeal has been received.

The Committee will normally conduct an oral hearing although it may order that a hearing proceed by way of written submissions in certain cases. Where a hearing by written submissions is being considered by the Committee, the Committee may request input from the parties.

Burden of proof

The general rule is that the burden or responsibility for proving a fact is on the person who asserts it.

Notification of expert evidence

The Committee requires any party that intends to present expert evidence at a hearing to provide the Committee, 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 Committee 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 Committee and all parties prior to the hearing, sufficient copies of the document must be brought to the hearing for the Committee and all other parties.

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.

Appendix K – Post Plan Adoption Regional Meetings and Minutes

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 07-3548
August 9, 2007

PUBLIC SAFETY AND HOMELAND SECURITY BUREAU ACTION

REGION 20 (DISTRICT OF COLUMBIA, MARYLAND AND NORTHERN VIRGINIA) PUBLIC SAFETY REGIONAL PLANNING COMMITTEE TO HOLD 700 MHz REGIONAL PUBLIC SAFETY PLANNING MEETING

The Region 20 (District of Columbia, Maryland and Northern Virginia)[1] Public Safety Regional Planning Committee will hold its next meeting on Wednesday, August 29, 2007, beginning at 10:00 a.m., in the lower level conference room at the Office of Traffic and Highway Maintenance, Maryland State Highway Administration, Hanover Complex, 7491 Connelley Drive, Hanover, Maryland.

The agenda for this meeting includes:

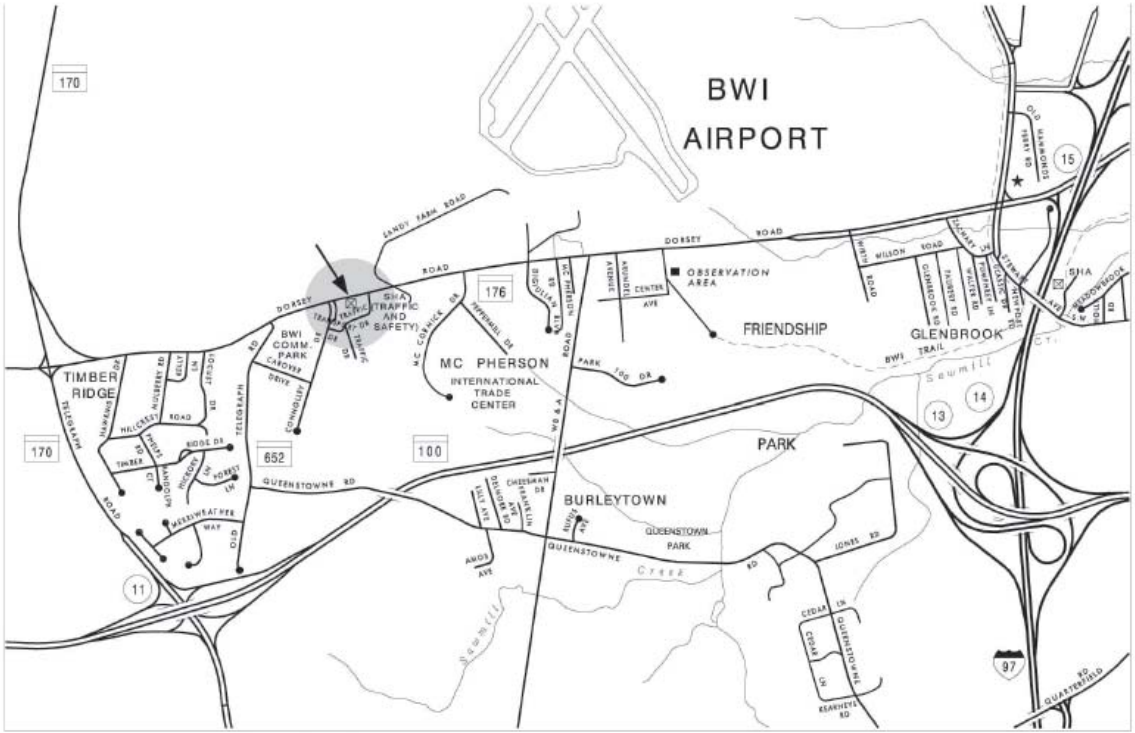
- 700 MHz Region 20 plan update
- Discussion of regulatory issues impacting 700 MHz
- Discussion of window one opening for 700 MHz applications
- Old and new business
- Adjourn

The Region 20 700 MHz Public Safety Regional 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 Region 20 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, 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.

[1] The Region 20 area includes the District of Columbia, Maryland and Northern Virginia (Arlington, Fairfax, Fauquier, Loudoun, Prince William and Stafford Counties, and the cities of Alexandria, Fairfax, Falls Church, Manassas and Manassas Park).

All interested parties wishing to participate in planning for the use of public safety spectrum in the 700 MHz band within Region 20 should plan to attend. For further information, please contact:

G. Edward Ryan II, Chairman
Region 20 700 MHz Public Safety Regional Planning Committee
Wireless Communications Division
Maryland Department of Natural Resources
580 Taylor Avenue, E-4
Annapolis, Maryland 21401
(410) 260-8734
Email: GRyan@dnr.state.md.us



Office of Maintenance, Office of Traffic & Safety, State Operations Center 7491 Connelley Drive, Hanover, MD 21076

Take 95 south to 295 south to 195 east (towards BWI). Take the first right exit 170 south. Follow 170 south and turn left onto176 - Dorsey Road. Continue on Dorsey Rd. approximately 1/2 mile and turn right onto Connelley Dr. The complex is on your left.

– FCC –

REGION 20 - 700 MHz MEETING
AUGUST 29, 2007

ATTENDEES: Michael E. Bennett (MD State Police), Henry D. Black (MEMA), Rick Bohn (Baltimore Co.), Charles Bryson (Prince George's Co. RCC), Bill Butler (Nat'l Capital Region), Bryan Casey (Nat'l Capital Region), Ernie Crist (Harford Co.), Gene Cummins (Montgomery Co.), Steven Day (Prince William, VA), Craig Fetzer (MD SHA), Steve Haller (Frederick PD), Paul Hoppes (Commonwealth of VA VITA), Sean Javins (MD DBM), Dale Johnson (City of Alexandria), Derek Kelly (MWAA), Phil Lazarus (SHA), Jack Markey (Frederick Co.), Wayne McBride (Prince George's Co.), Denis McElligott (MD DBM), Gary McKelvey (Loudoun Co., VA), Thomas Miller (MIEMSS), Maria-Elena Perez (MD DBM), David Eierman (Motorola), G. Edward Ryan (MD DNR), Dave Zylak (St. Mary's Co. MD Emer. Comm), Richard D. Berg (MIEMSS), David Selawski (TYCO)

The meeting was called to order at 10:17 a.m.

Ed Ryan asked for a Motion to accept the Minutes of the previous meeting of August 14, 2006. Motion accepted.

Ed stated that Charley Bryson had done a lot of work on the Regional Plan and will work us through this and the FCC's latest Order. Our Plan would need to be amended to meet the FCC's requirements.

Charley began by stating that many changes have taken place and he would run through these. The good news is that the FCC has acknowledged and accepted our Plan. A fair amount of the country has not submitted a Plan or has an approved Plan. He mentioned some of these, as Region 42 is making good progress and Region 28 is moving quickly; Region 36 has not convened. The most profound Order that has impacted Public s agencies was to combine 8 different dockets into one. Some relate to the commercial spectrum. It also established the single national broadband licensee for Public s. From the second report, paragraph 346 of the Order, there are certain requirements for us to make amendments to conform with the Order. September 23rd is when it will be published. Jim Hobson said that 60 days from Federal Register – October 23rd is the Plan submission date – 30 days after that is 11/23/2007. Charley said that we do have to make changes and they do have to be submitted; we knew this was coming down the pike. We had to change the frequencies so that they conform to the 769-775 and 799-805 MHz channels.

With respect to the Plan as it was submitted, we are now in compliance with the Plan today. The RPCs have authority over 12 MHz of spectrum; plus have authority over low power channels, i.e., the channels limited to 2 watts ERP. The RPCs have authority over secondary trunking channels. Charley explained the band Plan changes as they affect the Public s narrow band frequencies 769-775 base station, mobile and portable and-799-805 mobile. 1,920 channels remain for use in various bandwidths (960 pairs at 6.25 KHz). We are still responsible for the management of the orphan channels. The CAPRAD database assigns channels in 25 KHz blocks.

A management plan for use of orphaned channels for Prince George's County was reviewed with the technical committee who is happy with the strategy. At the NPSTC meeting, the final Order was discussed that the CAPRAD needs to be resorted and to include sorts for both 12.5 kHz and 25 kHz channel spacing. – Nothing has changed with respect to the protection of TV channels. Two TV stations in Philadelphia and one in Allentown, PA were granted temporary extensions to permit operations after February 18, 2009 permitting them to continue analog operations and not retune their digital transmitters until a later date.

With regard to the regional wireless broadband network, the Order directs that Region 20 needs to be consulted. The original Order the Commission issued back in January required as further conditions that the NCR must obtain concurrence from adjacent 700 MHz regional planning committees before submitting and as part of its license application. We further condition our grant of the waiver request upon NCR providing evidence of concurrence from all remaining adjacent regions.

Charley discussed NPSTC issues and concerns to the Commission about insufficient time for agencies to adequately inventory the equipment and that the Order does not provide sufficient filing time. There is concern that by re-designating the narrowband voice channels in contiguous frequencies that existing allocations may produce unintended interference. There are no provisions under the R & O for the payment of a new CAPRAD resort. There is insufficient time to identify a CAPRAD resort funding source. NPSTC made recommendations to extend the deadline to 3/31/2008. NPSTC also recommended that the Commission allow deployment of 700 MHz systems on current narrowband channels with the right to reimbursement for subsequent reprogramming until 12/30/2007 and extend the deadline for Planning Committees to amend their plans until 3/1/2008.

Charley said that the New Part 90, Subpart AA, establishes rules for coordination with D Block and PSBL. He said that this comes down to money – one nationwide license provides 10 MHz and reaches approximately 286,000,000 people. NSA network sharing agreement – they are required by statute to interact with Public safety. Charley stated some of the PSBL authority, which is to coordinate band use with narrowband stations, including use of the guard bands, oversight of reallocating existing 700 MHz licenses, authority to permit federal operations in the band and review waiver requests from Public s for wideband operations.

Jim Hobson suggested appointing an individual who would have the region's interest in mind to represent this region and focus on Public safety. Discussion took place as to whom this could be, i.e., Chief Porch and Richard Reynolds, as NPSTC people are "very dedicated".

There was a discussion about spectrum management and how it was very different here than in other areas. In particular, paragraph 14 in the NCR Waiver, which was read aloud. Discussion ensued regarding this region's need to develop a strategy for broadband and what do we want to do. Charley said there are some very limited ways in which wide band operations can be authorized. The Commission had said that anyone applying for this will have a "high hurdle", particularly when you look at some of the requirements the Commission has.

Charley went over the PSBL responsibilities and stated that this means a lot of in-building coverage and did not know if this is being addressed. Charley discussed the network coverage sharing agreement. He stated that if you want pre-emption access you will pay a different rate. The license is for a ten-year period. PSBL has exclusive use of spectrum (20 MHz). Charley said that the Region has to approve the Plan's amendment.

Ed Ryan asked if there were any questions or comments regarding the requirements that we have to meet and if everyone had an opportunity to look over the amendments to the Plan. A discussion took place regarding voting and having a quorum according to the By-Laws. Ed read out the names of the voting members to determine if there was a quorum.

A Motion was made to approve the Amendments. Motion carried unanimously.

Brian Casey, Program Manager for the Wireless Network, gave a brief status of the program and RPC's role with this Report and Order. RWBN was an initiative to build wireless broadband for Public s and want to work with this group to figure channel assignments. We want to be able to operate this network which previously was 12 MHz wideband spectrum. We are in the throes of acceptance and accepting sites by the end of this week. We have 12 sites that we will deploy in the district. The FCC has stated that the NCR has the ability to operate with a STA. We have an experiential license. We do not know when that time is; this is up to who wins the D Block. It could be 2-3 years before this happens. The broadband licensee needs to consult with the NCR. The district executives are still reviewing this and scheduling meetings with the FCC and determining if they are ready to deploy the network.

Brian stated that the Regional Technical Committee discussed drafting a letter to the FCC asking for clarification. Craig Fetzer stated that the RWBN showed 104 sites – 21 of the sites were in Prince George's County. That was space allocated for RWBN antennas and some microwave. If you merge with the regional Public s license out of D Block; that same permit does not follow through to this regional broadband provider. Ed said the NCR is a governmental entity. Once the license is transferred to the D Block licensee then it becomes commercial enterprise.

Brian said that there are no sites that have any payment leases. Charging a fee is a two-way street. You need to fight for what this means to you. It was a waiver that was developed and agreed upon by the NCR. The waiver was only basically everybody coming together and say "Yes, that is what we want to do". Ed said what was discussed was there would be a board of Public users that would look at operational costs and this would be charged back to the users, but could not charge back anything more than operating costs. This was the basis for concurrence of the districts. Everybody is going to have to negotiate a new agreement. Commercial rates can be used if the basis for determining what the user fees will be. Why would I not do this now with the commercial builder and lease service from them? We have to be involved in this service agreement. There are a lot of things that are undefined that need to be defined. Brian said that the NCR is the only region in the country that has the ability to operate a broadband network until this regional network shows up. Anyone who wants to build a network has to do so with the concurrence of the NCR.

Charley said that technically we have been hearing about the Public Safety Spectrum Trust; the Commission still has to appoint them and select a manager. The FCC said some additional people have to be appointed before this goes forward. Discussion ensued where it was stated that Verizon has the money and will probably be the one to licensee D Block. Verizon could choose to use a different technology. Four years does not start until 2/18/2009. Gary said that Verizon is the only one that has a generator program for backup power at sites. Bill said that basically we agree to trunks – the Regional Planning Committee has no role going forward in managing broadband spectrum. We should have someone go to the Commission on behalf of everyone and drafting a letter to Dana Schaefer, Homeland Security Bureau. A letter to the RPC Chair was shown – did not want to tie up the technical group for hours on this. This letter was written as a request from the Technical Committee to the Chair. It is our intention to move on or before 2/17/2009 to be out of the way. Narrowband re-banding is not to occur until that day. Move when 700 frequencies rebands into the new configuration beginning on the D-TV date. There is no place for us to move to. Prince George's will not be on the air until 2/17/2009. Discussion took place about how this would affect Prince George's County. Brian said the broadcasters have to be gone on that date.

Bill brought everyone's attention back to the letter stating that paragraph 1 states a single Public broadband licensee. Paragraph 2 states that we understand we may obtain a STA to operate the network. Paragraph 3 states that the technical committee understands that they no longer have a role in licensing of data networks. Dave made a suggestion to change this to "licensing of broadband network" instead of "data". Gene suggested that the Region 20 committee endorses the letter and request that the Commission understands that we are out of the business now.

Charley suggested that we state in paragraph 3 "our belief that the Regional Planning Committee no longer has a role". Discussion ensued as to letting the other regions know this; we should "cc" them as a courtesy. Wayne McBride made a Motion to the Technical Committee Chair that the Technical Committee recommends that we accept the letter as it is currently written and that will be accompanied by a letter from the RPC concurring with the request for clarification and support the idea that we do not have to deal with broadband and cc the region chairs as courtesy.

Discussion ensued regarding Window 1. Charley stated that it is premature to open Window 1 since the Plan is not officially approved. Our assumption so far is that the FCC likes the Plan. Prince George's needs to move ahead as homeland security issues; Stafford County is right behind us. We have been assuming that that would be a requirement. A discussion of the general use channels took place. The local jurisdictions do not have to apply for those channels, the State can do this. A lot of this depends on CAPRAD resort. Gary stated that the Commonwealth of Virginia is interested in meeting with Region 20 to discuss the distribution of channels. A lot of work for all of us to make this work. Charley said that DC is also eligible to use State channels as well. Wayne stated that we will sit with everyone equally to make sure that DC and Virginia are incorporated as fully as Maryland. Gary said that there is nothing wrong with the local jurisdictions going to the State and asking for channels. Charley said that everybody wants to be fully cooperative with Public safety. We will do whatever we can within our means or resources with first responders.

A discussion ensued regarding issuing out 700 MHz frequencies so as to get back some 800 MHz frequencies. We do get give-back points when the Region issues the channels there needs to be a plan to bring the system on the air. Charley asked if the Region supports the opening of Window 1 and is there a date for opening and closing it? Ed responded that the date is the approval of the Plan by the Commission and closes 3 years after that. We would need to open the window to accept applications prior to that. Gary said that we should expect a tremendous amount of work up front – a lot of people will be applying for Window 1. The sooner they get together and do this, the better off they will be. Craig stated that CAPRAD is a starting point and needs to get re-done until this CAPRAD is resorted. Charley said that he has not ever heard anybody say that they will pay to have CAPRAD resort. What should the criteria about the resort be?

Ali recommended going ahead and receive informal basis just in case there are two competing applications. Discussion ensued regarding first-come, first-served basis with the applications during Window 1; how would this be managed, the need for a resort, etc. Tom Miller asked why 3 years for the Window length? Charley responded that there was an assumption that most of the users in the counties in this region already have mature 800 MHz systems and there would not be a huge outcry for this. Additional discussion took place regarding the length of time of the open window, that certain requests for channels would have problems. Ed stated that during Window 1 we would use the CAPRAD resort for the channel allocations. Those states that wanted to utilize channels during the CAPRAD resort could apply at that time. Tom said he thought the Window would be closed around 2009. Ed said there is nothing to preclude this from being licensed or operating a system during Window 1.

Charley said that with respect to the issues that are still up in the air, you might want to consider amending the Plan right now and give the Technical Committee time to re-evaluate the date for opening and closing. Ed stated that we would have to give 30 days from the date it is printed in the Daily Digest. There is nothing to preclude us now from posting something in the Daily Digest if the Committee desires saying that we would accept applications immediately. Ed stated that channel assignments will be made in Window 1. You have to wait until the opening of Window 1 before you can submit an application, based upon the CAPRAD resort. We can open up and accept applications – we can not assign anything.

Ali said that you could run into issues of spectrum congestion areas. Further discussion ensued as to applications being received and when assignments would be made, conflicts on the first-come, first-served basis. Ed said it would be a geographic conflict. There is nothing prohibiting us from receiving an application. The start date of these applications is all equal. Gary said that nothing that we are doing conflicts with the Plan. Adjacent regions have to approve the Plan. Need to have a carefully submitted wording so that everyone understands when they submit their applications what they should expect from this preliminary submission.

A Motion was made that the Technical Committee can receive preliminary applications for pre-screening for completeness and accuracy for Region 20 Plan and allotment and licensing for commences on the opening of Window 1. Equal weight will be given to applicants upon approval of the Region Plan. Motion approved and seconded. Motion carried.

Charley said the Technical Committee met and approved Region 28's Plan last week. Essentially it is just like ours. Assignments were borrowed from Region 8. The Technical Committee met and approved this. Recommendation from the Technical Committee for region 20 to approve the Region 28 Plan. Wayne suggested a Motion that we concur with Region 28's Plan. Send a letter to the Chair of Region 28 concurring with the Plan and amend dispute the resolution. Motion accepted.

A Motion was made to adjourn the meeting. The Meeting adjourned at 2:48 p.m.