THE REGION 14 (INDIANA except Southern Lake Michigan counties) REGIONAL PLAN FOR Public Safety's Allocation and Use of Radio Frequencies in the 764-776/794-806 MHz Bands

TABLE OF CONTENTS

1 REGIONAL CHAIRPERSONS 3
2 RPC MEMBERSHIP 3
2.1 Officers 3
2.2 Subcommittees 3
3 DESCRIPTION OF THE REGION 3
3.1 Definition of the Region and Its Boundaries 3
3.2 Description of existing interoperability contracts, compacts, mutual aid agreements, etc. 8
3.3 Description of the effect of the addition of 700 MHz channels and interoperability requirements will affect existing plans. 8
3.4 Overview of Public Safety Entities 8
4 NOTIFICATION PROCESS 8
4.1 Convening of the RPC 8
4.2 Meeting Announcements 9
4.3 Meeting Comments and Summaries 9
4.4 Native American Notification 9
5 REGIONAL PLAN SUMMARY 9
5.1 Guidelines and Procedures for RPC Operation 9
5.2 Procedures for Requesting Channels 10
5.3 Procedures for Frequency Coordination 10
6 GUIDELINES AND PROCEDURES FOR PROTECTION OF INCUMBENT TV/DTV STATIONS WITHIN THE REGION OR NEAR THE REGION'S BORDER DURING THE DTV TRANSITION PERIOD 10
6.1 FCC Part 90.309 40 dB D/U Tables 11
6.2 Engineering Analysis 13
6.3 TV/DTV Short-spacing 14
6.4 TV/DTV Height Adjustment Factor 14
7 DESCRIPTIONS OF THE REGION'S APPLICABLE INTEROPERABILITY PLANS AND INTEROPERABILITY REQUIREMENTS 14
7.1 Spectrum Utilization agreements with other regions 14
7.2 Description of the pre-coordination allocation method used at the region's borders. 14
7.3 An overview of the "700 MHz Public Safety Frequency Coordination Database and application flowchart 15
7.4 Low Power Channels 17
7.5 Use of fomer Reserve Channels 21

8 700MHz PRE-ASSIGNMENT RULES 21
8.1 Introduction 21
8.2 Overview 21
8.3 Discussion 22
8.4 Portable In-building Coverage 24
8.5 Service Contour Extension Recommendation 31
8.6 Interfering Contour 31
8.7 Co-channel Interfering Contour Recommendation 31
8.8 Adjacent and Alternate Channel Considerations 32
8.9 Adjacent Channel Interfering Contour Recommendation 36
8.10 Final Detailed Coordination 37
9 UTILIZATION OF NATIONAL INTEROPERABILITY CHANNELS 46
9.1 Calling Channels 46
9.2 Tactical Channels 46
9.3 Encryption 48
9.4 Air to Ground Channels 47
9.5 Deployable Systems 48
9.6 Trunking on the Interoperability Channels 48
9.7 Standardized Nomenclature 49
9.8 Data Only Use of the INTEROPERABILITY Channels 49
9.9 Minimum Channel Quantity 49
9.10 Direct (Simplex) Mode 50
9.11 Common Channel Access Parameters 50
10 UTILIZATION OF INTEROPERABILITY CHANNELS 51
10.1 Calling Channels 51
10.2 Tactical Channels 52
10.3 Encryption 52
10.4 Deployable Systems 52
10.5 Trunking on the Interoperability Channels 52
10.6 Standard Operating Procedures on the Trunked I/O Channels For I/O Situations Above Priority Level 4 53
10.7 Standardized Nomenclature 53
10.8 Data Only Use of the I/O Channels 53
10.9 State Interoperability Executive Committee 50
10.10 Minimum Channel Quantity 55
10.11 Direct (Simplex) Mode 51
10.12 Common Channel Access Parameters 56
10.13 Additional Spectrum Set Aside for Interoperability Within the Region 56

11 ALLOCATION OF GENERAL USE SPECTRUM 57
12 AN EXPLANATION OF HOW NEEDS WERE ASSIGNED PRIORITIES IN AREAS WHERE NOT ALL ELIGIBLES COULD RECEIVE LICENSES..... 59
13 AN EXPLANATION OF HOW ALL THE REGION ELIGIBLES' NEEDS WERE CONSIDERED, AND TO THE EXTENT POSSIBLE, MET..... 64
14 ADJACENT REGION COORDINATION 66
15 A DETAILED DESCRIPTION OF HOW THE PLAN PUT SPECTRUM TO THE BEST POSSIBLE USE 66
16 A DETAILED DESCRIPTION OF THE FUTURE PLANNING PROCEDURES.... 67
17 A CERTIFICATION BY THE REGIONAL PLANNING CHAIRPERSON THAT ALL PLANNING COMMITTEE MEETINGS, INCLUDING SUBCOMMITTEE OR EXECUTIVE COMMITTEE MEETINGS WERE OPEN TO THE PUBLIC 67
18 APPENDIX A - THE BYLAWS OF REGION 14 68
19 APPENDIX B - REGION 14 MEMBERSHIP..... 75
20 APPENDIX C - MEETING ANNOUNCEMENTS..... 76
21 APPENDIX D - MEETING SUMMARIES,COMMENTS, AND SIGN-IN SHEETS.89
22 APPENDIX E - TABLE OF INTEROPERABILITY CHANNELS..... 119
23 APPENDIX F - INCIDENT COMMAND SYSTEM..... 159
24 APPENDIX G - MEMORANDUM OF UNDERSTANDINGError! Bookmark not defined.
25 APPENDIX H - DISPUTE RESOLUTION PROCESS..... 163
26 APPENDIX I SAMPLE NOTIFICATIONS BY RPC TO SECONDARY TV STATIONS 166
27 APPENDIX J SAMPLE COVER LETTER TO ADJACENT REGIONAL CHAIRS ..... Error! Bookmark not defined.
28 APPENDIX K SAMPLE ADJACENT REGION CONCURRENCE LETTER..... 178
29 APPENDIX L FREQUENCY PLANNING AREAS FOR RCRC MEMBERSHIP 171

THE REGION 14 (INDIANA except Southern Lake Michigan counties) REGIONAL PLAN FOR Public Safety's Allocation and Use of Radio Frequencies in the 764-776/794-806 MHz Bands

This document is the Regional Plan for Region 14 (Indiana)

Executive Summary

The Region 14 700 MHz Regional Planning Committee was formed on Wednesday, November 14, 2001. That first meeting was held at the Indiana State Police Post District 52 Training Room in Indianapolis, Indiana. H. Anthony Stantz, an engineer for the Indiana State Police's Communications Division and APCO Frequency Advisor for the State of Indiana, was elected Chairman.

Due to the fact that there were no areas in Indiana that were not covered by TV stations in Channels 63-64 and 68-69, there was no 700 MHz public safety frequency availability in the State. No further meetings of the RPC were held until 2006 because of this reason. When President Bush signed the DTV Transition Bill in 2006, and established a firm date when the 700 MHz public safety frequencies would become available for use, interest was rekindled in the 700 MHz RPC.

The second meeting of the Region 14 700 MHz RPC was held on Wednesday, November 8, 2006, in the conference room of the new Indiana State Police Post District 52 in Indianapolis, Indiana. At that meeting, the Chairmanship of H. Anthony Stantz was confirmed, and Alex R. Whitaker, an engineer for the Indiana State Police's Communications Division and current APCO Frequency Advisor, was elected Vice-Chairman. Kelly Dignin, also of the Indiana State Police Communications Division, was elected Secretary.

It was decided at the second meeting that, once the RPC was established and committees assigned to work on the Region Plan, that future RPC meetings would be held at different locations throughout the State of Indiana, so as to reach the largest number of possible future users. Meetings were held northwest in Lafayette, southwest in Evansville, northeast in Fort Wayne, and southeast in Greensburg. Several meetings were also held in the Indiana State Police Communications Division Headquarters on the East Side of Indianapolis, as well as 2 meetings held at the Indiana State Police Post 52, also in Indianapolis.

Once the RPC was organized, each meeting typically consisted of working on different sections of the Plan. General discussion of issues surrounding 700 MHz Regional Planning were also presented. There were also educational presentations from experts on the Regional Planning process.

No recognized Indiana Tribes exist in Indiana, so notification focus for the meetings of the RPC was solely on eligible users. The following public safety associations, groups, and magazines were given notice of each meeting so as to make sure that all eligible users were notified: The Association of Indiana Counties, The Indiana Association of Cities and Towns, The Indiana Association of Fire Chiefs, The Indiana Volunteer Firefighter's Association, The Indiana Sheriff's Association, The Indiana Association of Chiefs of Police, The Association of Public-Safety Communications Officials-International (APCO) – both APCO's "E-Bulletin" and their printed "Bulletin," and Radio Resource Magazine's "Mission Critical Communications." Notifications were also e-mailed to the Indiana Data and Communications System, who put the meeting announcements on their electronic bulletin board, which can be seen by every public safety entity in the State of Indiana. The RPC also disseminated information about its meetings and the Region Plan via its Yahoo! Group "R14_700MHz_RPC," and through its web page, found at http://region14rpc.googlepages.com.

Region 14 consists of 82 of the 92 counties in Indiana. The Region 14 RPC developed its Plan over a 2 and ½ year period, beginning in 2006. Several of the 82 counties in the Region participated at one time or another in the planning process. Participation was had from fire, police, emergency medical, emergency management, as well as from non-voting radio equipment vendors and consultants.

Indiana has elected to administer the 700 MHz interoperability channels and has formed a State Interoperability Executive Committee. Region 14 participates in Indiana's SIEC and has established minimum interoperability channel requirements for all radios within the Region.

Region 14 will review applications for 700 MHz general use channels on a first-come, first-served basis. If more requests are received than there are frequencies available, the Region will use the applications prioritization matrix explained in Section 9. Once the application has been reviewed and approved by the RPC, it will be forwarded to the frequency coordinator designated by the applicant.

The CAPRAD database will be used for frequency selection and coordination. The RPC will update the CAPRAD as applications are processed, coordinated, and granted. Region 14's 700 MHz Plan will modified as necessary as systems are built out.

Concurrences from all adjoining Regions are attached to the Plan in Appendix K. Also attached are Intra / Inter Regional Dispute Resolution Agreements in Appendix H.

1 REGIONAL CHAIRPERSONS

The Regional Chairman and Vice Chairman are, respectively: H. Anthony Stantz, Telecommunications Engineer, Microwave Communications and Alex R. Whitaker, Telecommunications Engineer, Technical Services, Integrated Public Safety Commission, 8500 East 21st Steet, Indianapolis, IN 46219. Mr. Stantz' phone number is: (317) 899-8524, and his e-mail address is: astantz@isp.in.gov. Mr. Whitaker's phone number is (317) 234-6513 and his e-mail address is: awhitaker@isp.in.gov
.

2 RPC MEMBERSHIP

The members of the Region 14 planning committee can be found in Appendix B. This listing includes each member's agency affiliation, mailing address, phone number and e-mail address. The officers of the RPC are noted as: Chair, Vice Chair, and Secretary. The Region 14 committee membership represents a cross-section of public safety and public service users in the region.

2.1 Officers

Article III of the Bylaws defines the officers of the Regional Committee. In brief they are: a) Chairman (H. Anthony Stantz, Indiana State Police Communications Division); b) Co-Chairman (Alex R. Whitaker, Indiana State Police Communications Division); c) Secretary (Jason Schneidt, Purdue University).

2.2 Subcommittees

Article IV of the Bylaws establishes six subcommittees of the RPC to develop and implement this plan. They are: 1) Rules, 2) Interoperability, 3) Membership, 4) Technical, 5) Implementation, and 6) Regional Conformance Review Committee.

3 DESCRIPTION OF THE REGION

3.1 Definition of the Region and Its Boundaries

Region 14, the Indiana Region, is comprised of eighty-two (82) of the ninety two (92) counties that make up the State of Indiana. Ten (10) northwest Indiana counties not included in Region 14 are part of the thirty three (33) counties making up the Southern

Lake Michigan Region 54 700 MHz Planning Region. Region 14 is made up of a mix of rural and urban areas, with many of Indiana's largest cities being within its boundaries.

This Region is the same geographic area with the same political jurisdictions as the NPSPAC (800 MHz) Region 14.
It has a population of 4,763,619 (2000 Census) and a land area of 31,246 square miles. The Region contains one (Marion County) of the "Top 100 Counties in Terms of Capacity Needs" as reported in the *Generation of the National 700-MHz Public Safety Pool Allotments* submitted to the NLECTC and NPSTC on January 31, 2003:

Table 1 lists each county with their associated statistics. Figure 1 shows a map of the county and regional boundaries.

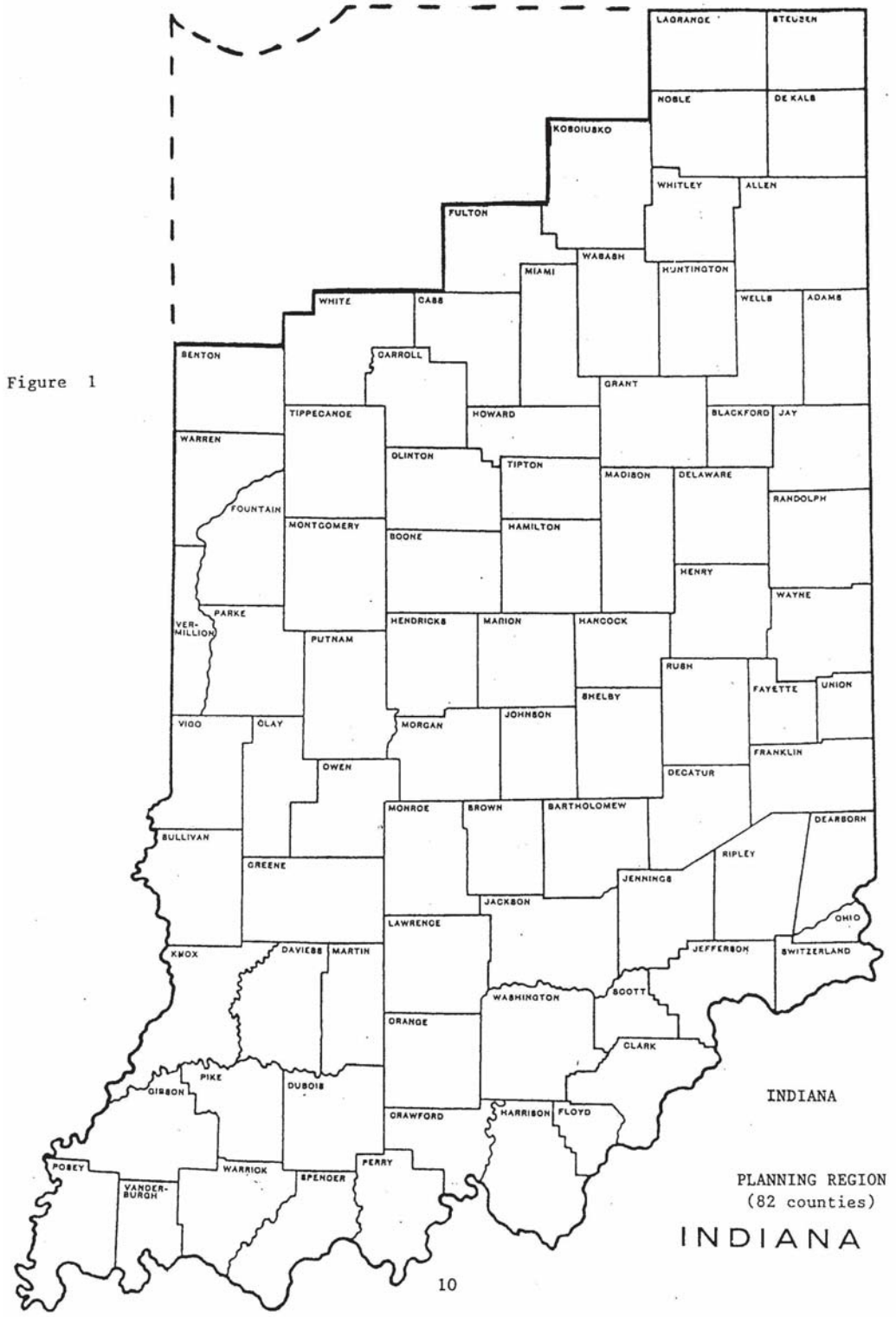
Table 1 - REGION 14 COUNTY DEMOGRAPHICS

Name	Population (2000 Census)	Land Area (mi^2)	Population Density ($1/ mi^2$)
Adams County	33625	339	99.2
Allen County	331,849	657	505.1
Bartholomew County	71,435	406	175.5
Benton County	9,421	406	23.2
Blackford County	14,048	165	85.1
Boone County	46,107	422	109
Brown County	14,957	312	47.9
Carroll County	20,165	372	54.2
Cass County	40,930	412	99.1
Clark County	96,472	375	257.3
Clay County	26,556	357	74.2
Clinton County	33,866	405	83.6
Crawford County	10,743	305	35.1
Daviess County	29,820	430	69.2
Dearborn County	46,109	305	151.2
Decatur County	24,555	372	65.8
De Kalb County	40,285	362	111
Delaware County	118.769	393	302.2
Dubois County	39,674	430	92.3
Fayette County	25,588	214	119
Floyd County	70,823	148	478.5
Fountain County	17,954	395	45.3
Franklin County	22,151	386	57.4
Fulton County	20,511	368	55.6
Gibson County	32,500	488	66.5

Grant County	73,403	414	177.3
Greene County	33,157	541	61.2
Hamilton County	182,740	397	459.1
Hancock County	55,391	306	181
Harrison County	34,325	485	70.8
Hendricks County	104,093	408	255.1
Henry County	48,508	392	123.4
Howard County	84,964	293	290
Huntington County	38,075	382	99.4
Jackson County	41,335	509	81.2
Jay County	21,806	383	56.8
Name	**Population (2000 Census)**	**Land Area (mi^2)**	**Population Density (1/ mi^2)**
Jefferson County	31,705	361	87.8
Jennings County	27,554	377	73.1
Johnson County	115,209	320	360
Knox County	39,256	515	76.1
Kosciusko County	74,057	537	137.7
Lagrange County	34,909	379	91.9
Lawrence County	45,922	448	102.3
Madison County	133,358	452	295
Marion County	860,454	396	2172.9
Martin County	10,369	336	30.9
Miami County	36,082	375	96
Monroe County	120,563	394	306
Montgomery County	37,629	504	74.5
Morgan County	66,689	406	164.3
Noble County	46,275	411	112.6
Ohio County	5,623	86	64.6
Orange County	19,306	399	48.3
Owen County	21,786	385	56.6
Parke County	17,241	444	38.7
Perry County	18,899	381	49.6
Pike County	12,837	336	38.2
Posey County	27,061	408	66.2
Putnam County	36,019	480	75
Randolph County	27,401	452	60.5
Ripley County	26,523	446	59.5
Rush County	18,261	408	44,8
Scott County	22,960	190	120.8
Shelby County	43,445	412	105.2

Spencer County	20,391	398	51.1
Steuben County	33,214	308	107.5
Sullivan County	21,751	447	48.7
Switzerland County	9,065	221	41
Tippecanoe County	148.955	499	297.9
Tipton County	16,577	260	63.8
Union County	7,349	161	45.4
Vanderburgh County	171,922	234	731.6
Vermillion County	16,788	256	65.3
Vigo County	105,848	403	262.7
Name	**Population (2000 Census)**	**Land Area (mi^2)**	**Population Density (1/ mi^2)**
Wabash County	34,960	413	84.6
Warren County	8,419	364	23.1
Warrick County	52,383	384	53
Washington County	27,223	514	53
Wayne County	71,097	403	176
Wells County	27,600	369	74.6
White County	25,267	505	50
Whitley County	30,707	335	91.4

Figure 1


LAGRANGE
STEUBEN
NOBLE
DE KALB
KOSCIUSKO
WHITLEY
ALLEN
FULTON
WABASH
MIAMI
HUNTINGTON
WHITE
CASS
WELLS
ADAMS
BENTON
CARROLL
GRANT
TIPPECANOE
HOWARD
BLACKFORD
JAY
WARREN
CLINTON
TIPTON
MADISON
DELAWARE
RANDOLPH
FOUNTAIN
MONTGOMERY
BOONE
HAMILTON
HENRY
WAYNE
PARKE
VER-MILLION
HENDRICKS
MARION
HANCOCK
PUTNAM
RUSH
FAYETTE
UNION
SHELBY
VIGO
CLAY
MORGAN
JOHNSON
FRANKLIN
OWEN
DECATUR
MONROE
BROWN
BARTHOLOMEW
DEARBORN
BULLIVAN
RIPLEY
GREENE
JENNINGS
JACKSON
OHIO
LAWRENCE
KNOX
DAVIESS
MARTIN
JEFFERSON
SWITZERLAND
SCOTT
WASHINGTON
ORANGE
CLARK
PIKE
GIBSON
DUBOIS
INDIANA
CRAWFORD
HARRISON
FLOYD
POSEY
WARRICK
PERRY
SPENCER
VANDER-BURGH
PLANNING REGION
(82 counties)
INDIANA
10

3.2 Description of existing interoperability contracts, compacts, mutual aid agreements, etc.

There are many agreements among the agencies within the county areas regarding mutual aid. For most cases, the agreements that exist consist of an order of who will be requested for assistance and in what order the requests will be made. Again, in most cases, the agreements state that the emergency communication centers will designate the radio channel, which will be used to communicate between agencies during the incident.

3.3 Description of the effect of the addition of 700 MHz channels and interoperability requirements will affect existing plans.

The State government of Indiana is administering the Interoperability channels. To assist with this task the State of Indiana has formed an SIEC (Statewide Interoperability Executive Committee). Region 14 has established minimum interoperability channels requirements for all radios within the Region Section (6.11).

3.4 Overview of Public Safety Entities

The public safety entities that have jurisdiction within Region 14 span the gamut of State, County and Local police, fire, emergency medical and other agencies as defined by the FCC's public safety eligibles list in Section 90.20(a). Insofar as planning for the allocation and use of the 700 MHz frequencies is concerned, the lead agencies have been the Indiana State Police, Purdue University, and the Indiana Department of Homeland Security, plus many local governmental agencies.

4 NOTIFICATION PROCESS

4.1 Convening of the RPC

The initial meeting of the Regional Planning Committee was convened by Mr. H. Anthony Stantz, former Frequency Advisor to the Region 14 800 MHz RCRC. The meetings were announced at least thirty (30) days prior in a variety of media including the FCC's web site and Public Notices, the Regional Planning Committee's master email distribution list, APCO websites, and inter-agency notices. **Appendix C** contains copies of the announcements of the convening meeting held at the Indiana State Police Post 52 in February, 2001

4.2 Meeting Announcements

Since then meeting announcements have been published in a variety of media including: the FCC's web site and Public notices, the Regional Committee's list server, APCO magazine, and inter-agency notices. Appendix C contains copies of the meeting announcements.

4.3 Meeting Comments and Summaries

As work progressed, members exchanged comments among subcommittees primarily through direct e-mails. When ready for review by a broader portion of the membership, drafts of documents were posted on a list server at:

http://groups.yahoo.com/group/R14_700MHz_RPC/

In July, 2007, a website exclusively for the RPC was created. Its address is:

www.region14rpc.googlepages.com

Appendix D contains the summaries and comments of each general membership meeting.

4.4 Native American Notification

To address the notification of Native American tribes, the Membership Subcommittee searched federal and state agency databases for appropriate contact information. While there are several Native American tribes in the state, none are located within the boundaries of Region 14. We confirmed this fact with the U.S. Department of the Interior's List of Federally Recognized American Indian Tribes and Alaska Natives. Thus, Region 14's meeting notifications were not sent to any Native American organizations.

5 REGIONAL PLAN SUMMARY

5.1 Guidelines and Procedures for RPC Operation

A copy of the Committee's Bylaws establishing the guidelines and procedures for operation of the RPC is contained in Appendix A.

5.2 Procedures for Requesting Channels

The Regional Planning Committee must approve all finalized applications including applications for Special Temporary Authority or any interoperability channels. No application may be changed or revised in any way by any person prior to final submittal to the FCC.

5.3 Procedures for Frequency Coordination

The Region Planning Committee is a pre-coordination body, utilizing the Computer Aided Pre-coordination Resource and Database (CAPRAD) tool. Upon approval by the Region Committee the application, along with an approval letter from the Region 14 IRCRC, is forwarded to the FCC certified coordinator that has been selected by the Applicant.

6 GUIDELINES AND PROCEDURES FOR PROTECTION OF INCUMBENT TV/DTV STATIONS WITHIN THE REGION OR NEAR THE REGION'S BORDER DURING THE DTV TRANSITION PERIOD

Table 2 lists the known TV stations currently operating on channels 62, 63, 64, 65, 66, 67, 68, and 69 within Region 14. Most of these are of low power, secondary status. Thus, they must cease operations if they cause harmful interference when a primary service (i.e., public safety land mobile) comes into operation. The Region will notify those stations when, and if, necessary, prior to requiring them to cease operation.

The Region will employ the methodology described immediately following Table 2 to protect the eligible stations during the DTV transition period.

Table 2 - Region 14 - Indiana TV Stations Within the Region

County	Channel	Call Sign	Location	Latitude NAD83	Longitude NAD83
DeKalb County	63	WINM	Angola	41°27'15"N	84°48'10"W
Johnson County	63	WIPX	Bloomington	39°24'16"N	86°8'37"W
Marion County	65	WNDI-LP	Indianapolis	39°49'29"N	86°9'23"W
	69	WTDI	Indianapolis	39°50'25"N	86°10'34"W
Posey County	66	W66CT	Mount Vernon	37°57'10"N	87°45'45"W
Vanderburgh County	63	WTSN-LP	Evansville	37°53'17"N	87°32'37"W
White County	65	NEW	West Lafayette	40°44'6"N	87°0'42"W
	65	W65EH	West Lafayette	40°44'6"N	87°0'42"W

During the DTV Transition period, the Region 14 RPC will consider all co-channel and adjacent channel TV and DTV stations within a 160-mile radius of an application. 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 station 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.

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).

6.1 FCC Part 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. 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 between the desired TV signal and undesired co-channel land mobile signal (D/U signal ratio) at a hypothetical 88.5 km (55 mi.) Grade B service contour and an adjacent channel D/U signal ratio of 0 dB at the same hypothetical Grade B service contour. These separation distances also protected the land mobile systems from interference from the TV stations. In 1985, recognizing that 50 dB D/U was too conservative, the FCC proposed to expand land mobile/TV sharing to other TV channels and proposed that the geographic separation

requirements for co-channel operations be based on a D/U signal ratio of 40 dB rather than 50 dB. 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). The FCC adopted a 0 dB D/U signal ratio for adjacent channel operation*s.* 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 safeguard TV receivers from land mobile interference.

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.

6.2 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 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 the 200 ft AGL limitation 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.

6.3 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 not affecting 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.

6.4 TV/DTV Height Adjustment Factor

In order to protect certain TV/DTV stations which have extremely large contours due to unusual height situations, 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).

7 DESCRIPTIONS OF THE REGION'S APPLICABLE INTEROPERABILITY PLANS AND INTEROPERABILITY REQUIREMENTS

The I/O channels will be used in accordance with the NCC's recommendations, with the exception that Region 14 will not allow encryption on <u>any</u> I/O channels.

7.1 Spectrum Utilization agreements with other regions

The Region 14 RPC is working with its adjoining regions: 13, 14, 54 and 21 regarding the shared utilization of spectrum.

7.2 Description of the pre-coordination allocation method used at the region's borders.

The Region 14 RPC has coordinated with its adjoining regions: 13, 33, 54, 25, and 21 regarding the pre-coordination allocation of channels along the mutual borders.

See section 14 for further description.

7.3 An overview of the "700 MHz Public Safety Frequency Coordination Database" and application flowchart

Table 3 provides a summary of the Region 14 database upon which subsequent frequency coordination will be founded. Figure 2 depicts, in graphical form, how the coordination process will flow.

Region 14 – Indiana Planning Summary

Total Regional Population:	4,763,619
Areas with at least one channel allotted:	82
Areas with no channels allotted:	0
Areas affected by Border Zone:	None

Spectrum Allotment Summary

Type	Width (kHz)	Channels Allotted	Co-Channel Usage	Channels Remaining
General Use	Voice 25	154	223	0
	Voice 12.5	0	0	0
	Voice 6.25	0	0	0
Interoperability	Voice 12.5	0	0	28
	Voice 6.25	0	0	56
Secondary Trunking	Voice 12.5	0	0	8
	Voice 6.25	0	0	16
I/O Nationwide Call	Voice 12.5	0	0	2
	Voice 6.25	0	0	4
I/O Low Speed Data	Voice 12.5	0	0	2
	Voice 6.25	0	0	4
Low Power	Voice 25	0	0	6
	Voice 12.5	0	0	12
	Voice 6.25	0	0	24

Table 3.

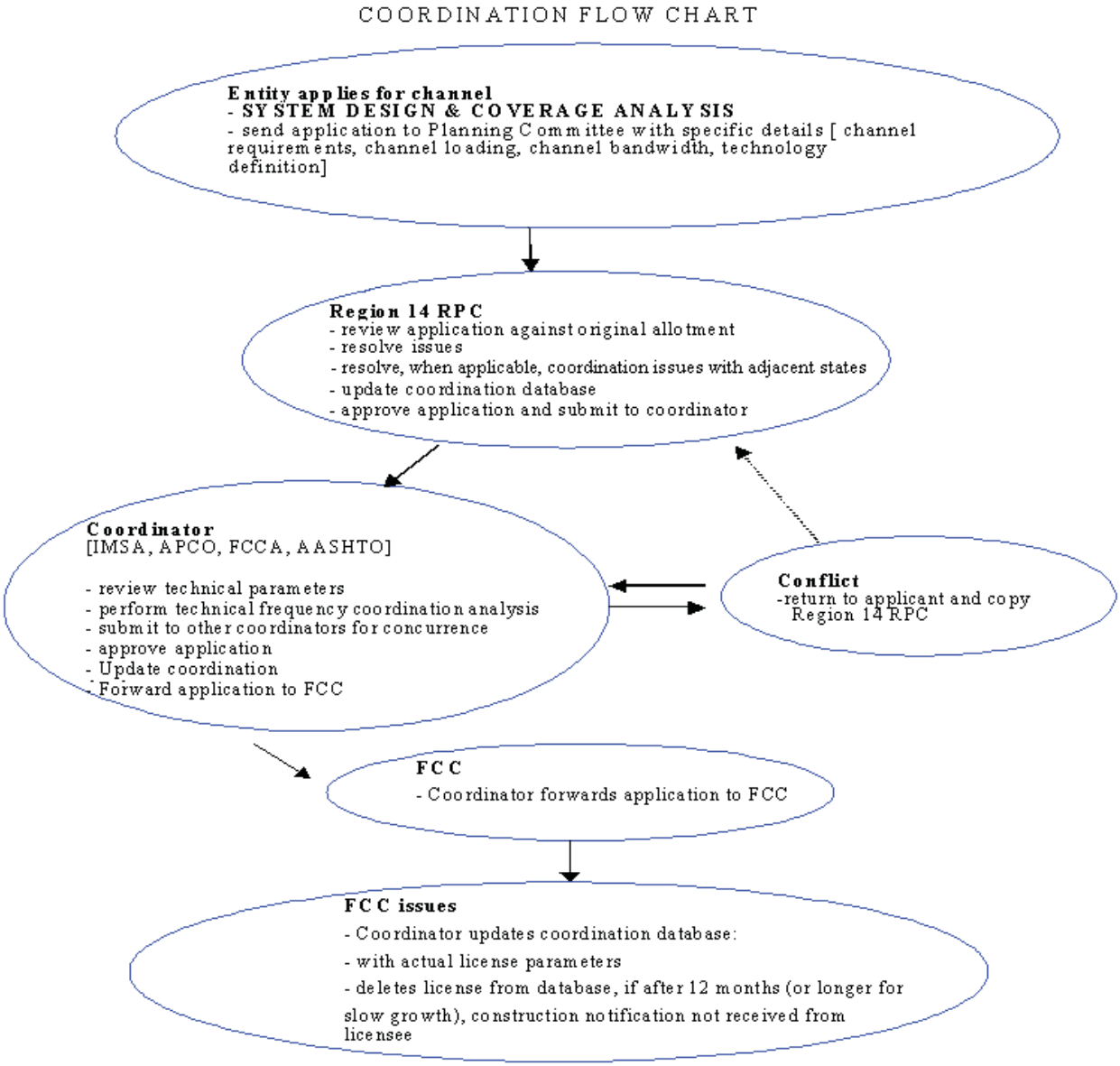

COORDINATION FLOW CHART
Entity applies for channel
- SYSTEM DESIGN & COVERAGE ANALYSIS
- send application to Planning Committee with specific details [channel requirements, channel loading, channel bandwidth, technology definition]
Region 14 RPC
- review application against original allotment
- resolve issues
- resolve, when applicable, coordination issues with adjacent states
- update coordination database
- approve application and submit to coordinator
Coordinator
[IMSA, APCO, FCCA, AASHTO]
- review technical parameters
- perform technical frequency coordination analysis
- submit to other coordinators for concurrence
- approve application
- Update coordination
- Forward application to FCC
Conflict
-return to applicant and copy Region 14 RPC
FCC
- Coordinator forwards application to FCC
FCC issues
- Coordinator updates coordination database:
- with actual license parameters
- deletes license from database, if after 12 months (or longer for slow growth), construction notification not received from licensee

Figure 2.

7.4 Low power Channels

The FCC in the 700 MHz band plan set aside channels 1 - 8 paired with 961 – 968 and 949 – 958 paired with 1909 – 1918 for low power use for on-scene incident response purposes using mobiles and portables subject to Commission-approved Regional Planning Committee Regional Plans. Transmitter power must not exceed 2 watts (ERP). Channels 9 –12 paired with 969 – 972 and 959 – 960 paired with 1919 – 1920 are licensed nationwide for itinerant operation. Transmitter power must not exceed 2 watts (ERP).

These channels may operate using analog operation. To facilitate analog modulation, this plan will allow aggregation of two 6.25 KHz channels for 12.5 kHz bandwidth. On scene temporary base and mobile relay stations are allowed (to the extent FCC rules allow) antenna height limit of 6.1 meter (20 feet) AGL (Above Ground Level). However, users are encouraged to operate in simplex mode with the least practicable amount of power to reliably maintain communications whenever possible. This plan does not limit use to analog only operations and channels are intended for use in a wide variety of applications that may require digital modulation types as well. The use of EIA/ TIA-102, Project 25 Common Air Interface is required when using a digital mode of operation.

In its dialog leading up to CFR §90.531 allocating the twenty-four low power 6.25 kHz frequency pairs (of which eighteen fall under RPC jurisdiction), the Federal Communications Commission (FCC) suggested that there is a potential for multiple low power applications, and absent a compelling showing, a sharing approach be employed rather than making exclusive assignments for each specific application as low power operations can co-exist [in relatively close proximity] on the same frequencies with minimal potential for interference due to the 2 watt power restriction.

Whereas advantages exist in not making assignments, the reverse is also true. If, for example, firefighters operate on a specific frequency or set of frequencies in one area, there is some logic in replicating that template throughout the Region for firefighter equipment. If there are no assignments, such a replication is unlikely.

In seeking the middle ground with positive attributes showing up both for assignments and no assignments, we recommend the following regarding assignments associated with the eighteen (18) low power channels for which the Regional Planning Committee has responsibility:

- Generic - Channel #'s 1-4 and 949-952 are set aside as generic 2 watt channels for use by public safety agencies operating within Region 14, and the complementary mobile channels # 961-964 and 1909-1912 are set aside as 2 watt generic mobile channels also for use by public safety agencies likewise operating within Region 14.
- Fire/ EMS/ Consequence Management - Channel #'s 5-8 are designated as Fire Protection/Emergency Medical and Consequence Management 2 watt channels for licensing and exclusive use by the Fire/Emergency Medical disciplines, and the complementary mobile channel #'s 965-968 are set aside as Fire/Emergency Medical and Consequence Management 2 watt mobile channels also for licensing and exclusive use by the Fire/Emergency Medical disciplines.
- Law/ Crisis Management - Channel #'s 953-956 are set aside as Law Enforcement/Crisis Management 2 watt channels for licensing and exclusive use by the Law Enforcement discipline, and the complementary 2 watt mobile channel #'s 1913-1916 are set aside as Law Enforcement/Crisis Management mobile channels also for licensing and exclusive use by the Law Enforcement discipline.
- Multidisciplinary Joint Public Safety Operations - Channel #'s 957-958 are set aside as Multidisciplinary Joint Public Safety Operations 2 watt channels for licensing and the complementary 2 watt mobile channel #'s 1917-1918 are also set aside as Multidisciplinary Joint Public Safety Operations Channels for use by political subdivisions and public safety agencies operating under a unified command at a common incident for the express mission of safety of life, property or environment.

Simplex operations may occur on either the base or mobile channels. Users are cautioned to coordinate on scene use among all agencies involved, particularly when the use of repeaterized modes is possible at or in proximity to a common incident. Users should license multiple channels and be prepared to operate on alternate channels at any given operational area.

LIST OF 700 MHz NARROWBAND LOW POWER FREQUENCIES
Pursuant to 2nd Report & Order
(Released August 10, 2007/Effective October 23, 2007)

In the Third Report & Order in Docket 96-86, the FCC allocated twenty-four 6.25 kHz frequency pairs for low power, on-site operations such as fire-ground. Analog-primary operations are permitted on these frequencies. When allocating for analog use, 12.5 kHz bandwidth would be required. Operation on these frequencies is limited to 2 watts ERP and antenna height is limited to 20' above ground.

Six (three 12.5 kHz) of these frequency pairs are for nationwide, itinerant use, are not subject to Regional Planning. The remaining 18 (nine 12.5 kHz) low power frequency pairs are to be administered by the 700 MHz Regional Planning Committees. The chart shows frequency pairs, the base side on the left; the mobile side on the right. The middle column indicates whether the frequency is RPC-administered or nationwide, itinerant. The low power frequencies are listed in Table 4.

Table 4.

Channel #	Center Frequency (6.25 kHz)	Center Frequency (12.5 kHz)	Center Frequency (25 kHz)	Use	Channel #	Center Frequency (6.25 kHz)	Center Frequency (12.5 kHz)	Center Frequency (25 kHz)
1	769.003125			**RPC Admin**	961	799.003125		
2	769.009375	769.00625		**RPC Admin**	962	799.009375	799.00625	
3	769.015625		769.0125	**RPC Admin**	963	799.015625		799.0125
4	769.021875	769.01825		**RPC Admin**	964	799.021875	799.01825	
5	769.028125			**RPC Admin**	965	799.028125		
6	769.034375	769.01875		**RPC Admin**	966	799.034375	799.01875	
7	769.040625		769.0375	**RPC Admin**	967	799.040625		799.0375
8	769.046875	769.04375		**RPC Admin**	968	799.046875	799.04375	
9	769.053125			**Itinerant**	969	799.053125		
10	769.059375	769.05625		**Itinerant**	970	799.059375	799.05625	
11	769.065625		769.0625	**Itinerant**	971	799.065625		799.0625
12	769.071875	769.06875		**Itinerant**	972	799.071875	799.06875	
949	774.928125			**RPC Admin**	1909	804.928125		
950	774.934375	774.93125		**RPC Admin**	1910	804.934375	804.93125	
951	774.940625		774.9375	**RPC Admin**	1911	804.940625		804.9375
952	774.946875	774.94375		**RPC Admin**	1912	804.946875	804.94375	
953	774.953125			**RPC Admin**	1913	804.953125		
954	774.959375	774.95625		**RPC Admin**	1914	804.959375	804.95625	
955	774.955625		774.9625	**RPC Admin**	1915	804.955625		804.9625
956	774.971875	774.96875		**RPC Admin**	1916	804.971875	804.96875	
957	774.978125			**RPC Admin**	1917	804.978125		
958	774.984375	774.98125		**RPC Admin**	1918	804.984375	804.98125	
959	774.990625		774.9875	**Itinerant**	1919	804.990725		804.9875
960	774.996875	774.99375		**Itinerant**	1920	804.996875	804.99375	

7.5 RESERVE CHANNELS

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

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

DEPLOYABLE TRUNKED CHANNELS
On February 13, 2015, NPSTC and the NRPC recommended a set of six former reserve channels (12.5 kHz bandwidth) to be allocated nationwide for 700 MHz deployable systems. In Public Notice DA 15-483 of April 23, 2015, the FCC approved the NPSTC/NRPC recommendation. Channels available for deployable use in Region 14 are listed below:

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

MOBILE REPEATER CHANNELS

Region 14 adds former reserve channels (12.5 KHz bandwidth) 77-78 and 157-158 to be utilized as 2 watt vehicular repeater frequencies (MO3), to be coordinated for and specifically for use with 800 MHz systems in the region due to the needed separation between these frequencies and those utilized by public safety in the 800 MHz band.

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

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

“FLOATING” GENERAL USE CHANNELS

We modify the Region 14 700 MHz plan to utilize the remaining former 12.5 KHz reserve channels as “floating allotments” to supplement the existing General Use allotments in each region: 197-198, 221-222, 237-238, 277-278, 301-302, 317-318, 643-644, 683-684, 699-700, 723-724, 763-764, 779-780, 803-804, 843-844. Allowing these remaining channels to supplement the existing General Use allotments utilized within the region will promote maximum flexibility of the use of these channels in each region.

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

These channels are available to all existing allotments where the channel use can be most optimum. Region 14 will utilize the same intra-region and inter-region coordination practices with these new, flexible General Use allotments as in use in our current plan.

8 700MHz Pre-Assignment Rules

8.1 Introduction

This section describes a process for coordinating the initial block assignments of 700 MHz channels before details of actual system deployments are available. In this initial phase, there is little actual knowledge of the specific equipment to be deployed and the exact antenna site 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.

8.2 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 geopolitical 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 geopolitical 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 F(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 F(50,50).

8.3 Discussion

Based upon the ERP/HAAT (effective radiated power/height above average terrain) limitations referenced in 47CFR Section 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. 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 so 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 (Commercial Mobile Radio Service) 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 3 shows 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 reduction1 in the available margin. This lowers the reliability and/or the channel performance of Public Safety systems. The left side of Figure 3 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.

.

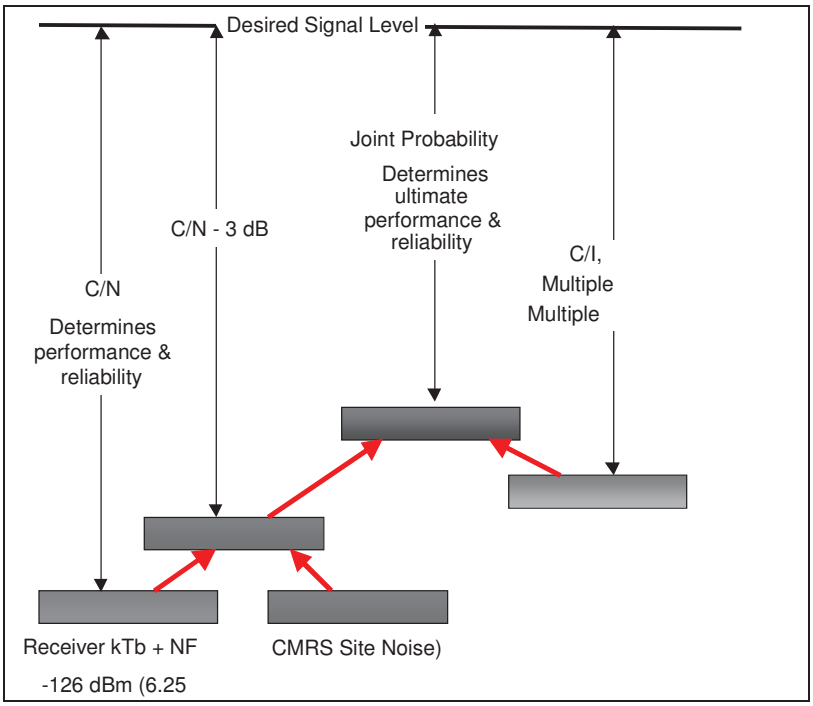


Figure 3 - Interfering Sources Create A "Noise" Level Influencing Reliability

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 3. 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 <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.

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 3 shows that the joint probability that both performance criteria and interference criteria are met must be determined.

Table 5 shows estimated performance considering the 3 dB rise in the noise floor at the 40 dBµ 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 5 - 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.

8.4 Portable In-Building Coverage

Most Public Safety communications systems today are designed for portable in-building 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 6 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%

Table 6 - Estimated Performance From Site(s) 2.5 Miles From Typical Urban Buildings.

Table 6 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 6 also shows that the difference in performance margin requirements for wider bandwidth channels requires more sites and closer site-to-site separation.

Figures 4 and 5 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)

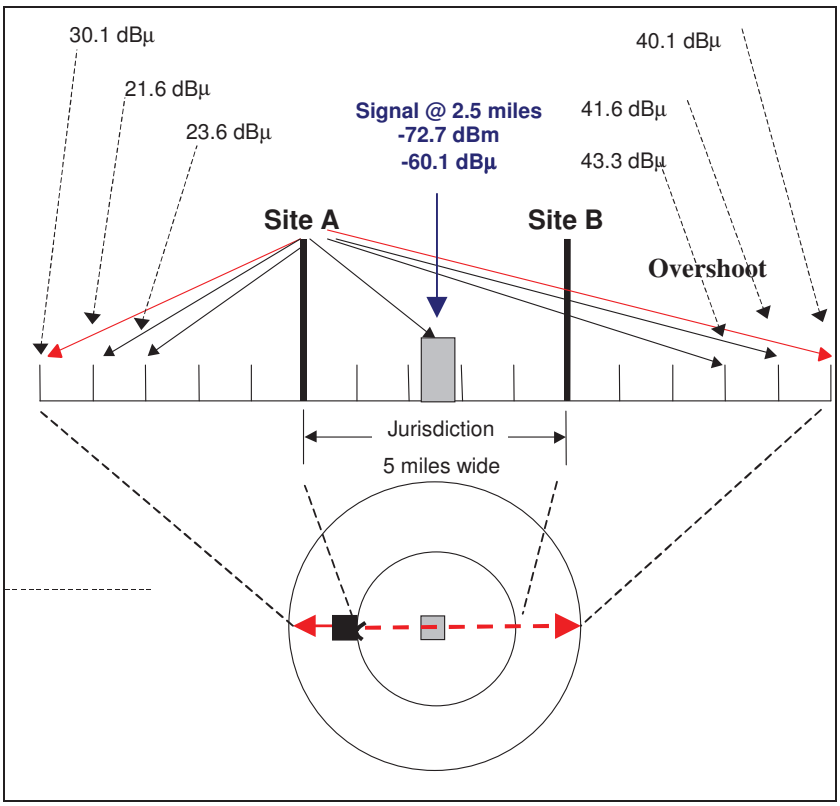


Figure 4 - Field Strength From Left Most Site.

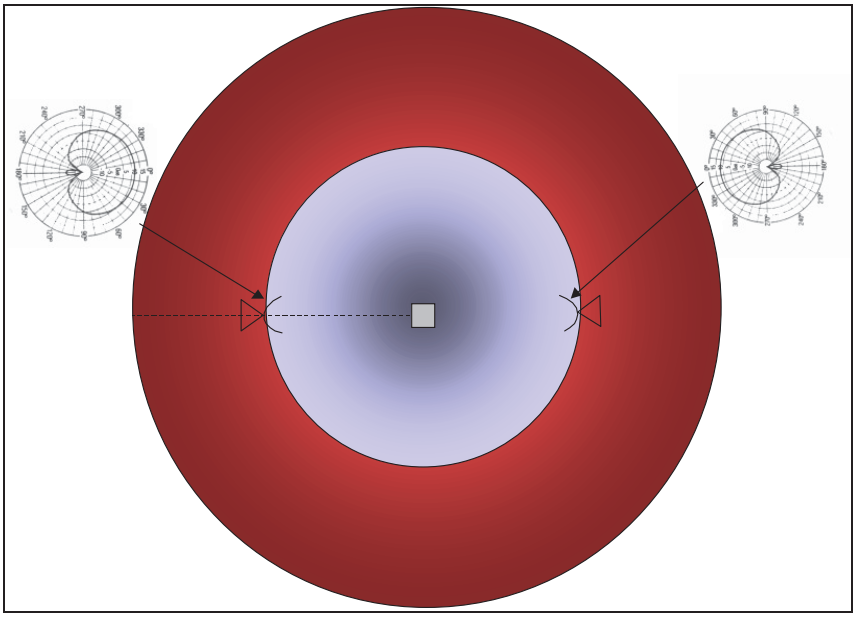


Figure 5 - Antenna Configuration Required To Limit Field Strength Off "Backside"

Figure 4 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 5). 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 5. This performance may be optimistic 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[2]. 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 toward the horizon. It would not be possible to achieve necessary signal strength at the service area boundary and have the 40 dBµ service contour be less than 5 miles away.

Tables 7 and 8 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 10.

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 7 - 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 8 - 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 9 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 9 - 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 the service contour given the distance from one of the sites.

Scenario 1: Refer to Figure 6. Site B is just inside the service area boundary and the service contour must be <5 Miles outside the service area boundary. The signal level at the service contour from Site B is 30.1 dBµ. The 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 6, above, for 20 dB building loss typical of urban areas.

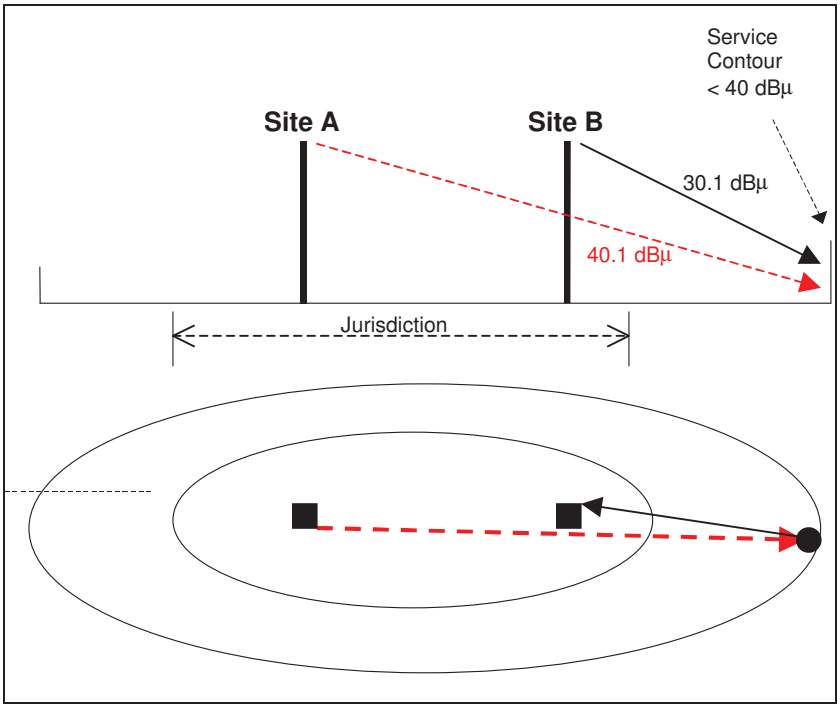


Figure 6 - Scenario 1 on of Use of Table 9

Scenario 2: Refer to bold data in Table 9. Site B is just inside the service area boundary and the service contour must be <4 miles outside the service area boundary. The signal level at the service contour from Site B is 33.5 dBµ. The signal level for Site A can be up to 38.4 dBµ. 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 performance for this example is shown in Table 7, 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 . 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 8, above, for 10 dB building loss typical of rural areas.

8.5 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 10 - Recommended Extension Distance Of 40 dB 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.

8.6 Interfering Contour

Table 5 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.

8.7 Co-Channel Interfering Contour Recommendation

Allow the constructed 40 dBµ F(50,50) service contour to extend beyond the edge of the defined service area by the distance indicated in Table 10. Allow the 5 dBµ F(50,50) interfering contour to intercept but not overlap the 40 dBµ service contour.

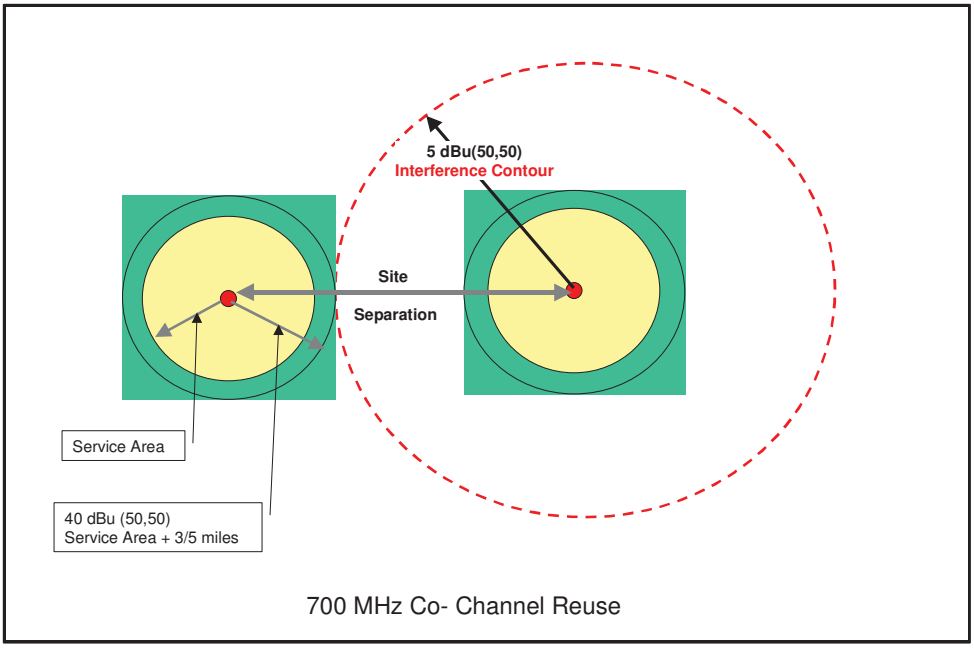


Figure 7 - Co-Channel Reuse Criterion

8.8 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 11 - Estimated Receiver Parameters

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

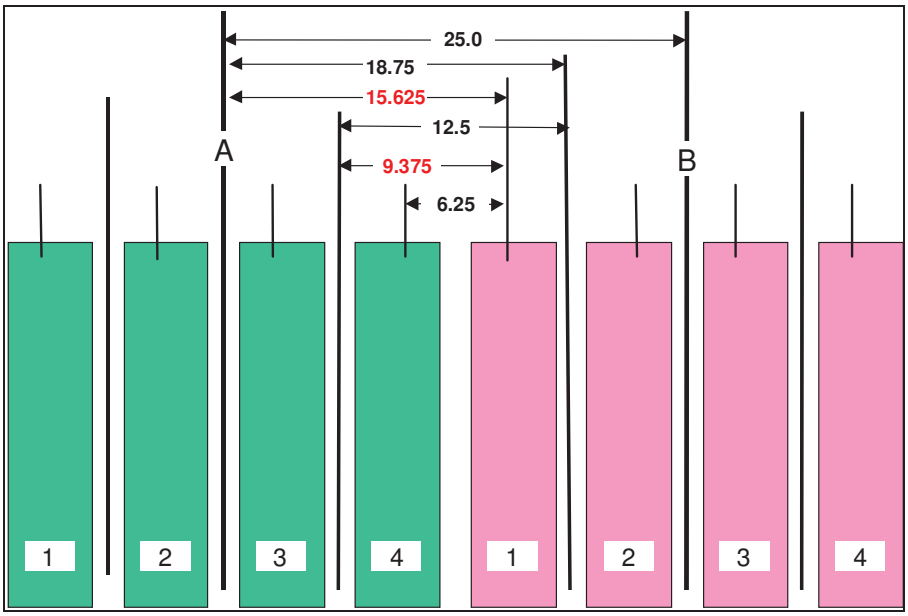


Figure 8 - Potential Frequency Separations

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 12 - 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.

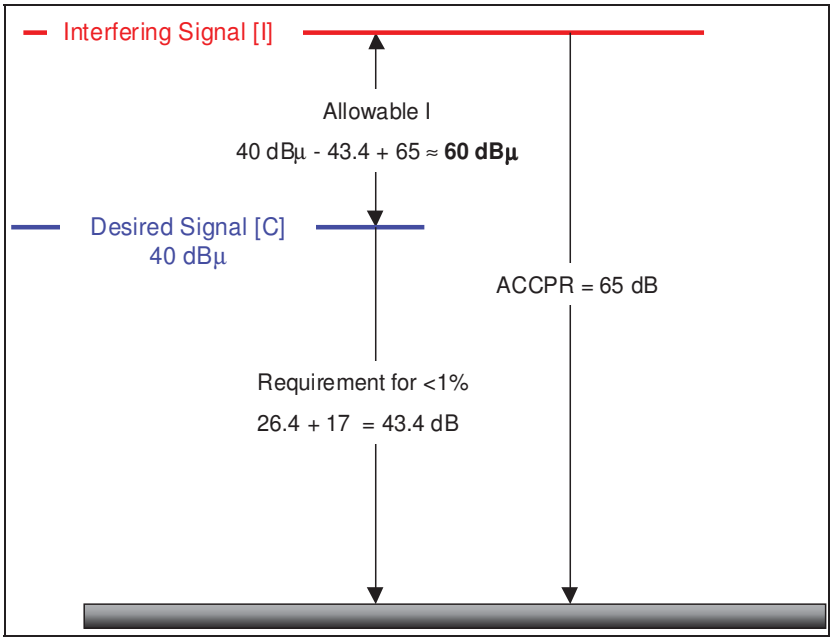


Figure 9 - Adjusted Adjacent 25 KHz Channel Interfering Contour Value

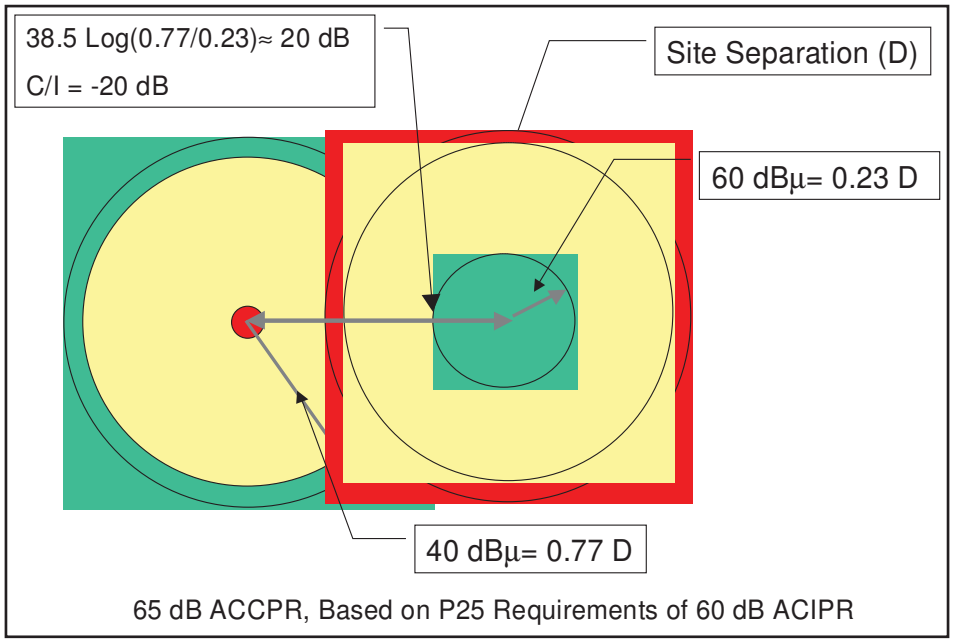


Figure 10 - Example Of Adjacent/Alternate Overlap Criterion

8.9 Adjacent Channel Interfering Contour Recommendation

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

8.10 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 of 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.

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.

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

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.

$$\textbf{2.} \qquad \frac{C}{I}\% = Z \cdot \sqrt{2} \cdot \sigma$$

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

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

Table 13 - Probability Of Not Achieving C/I For Various Location Lognormal Standard Deviations

These various relationships are shown in Figure 11, a continuous plot of equation(s) 1 and 2.

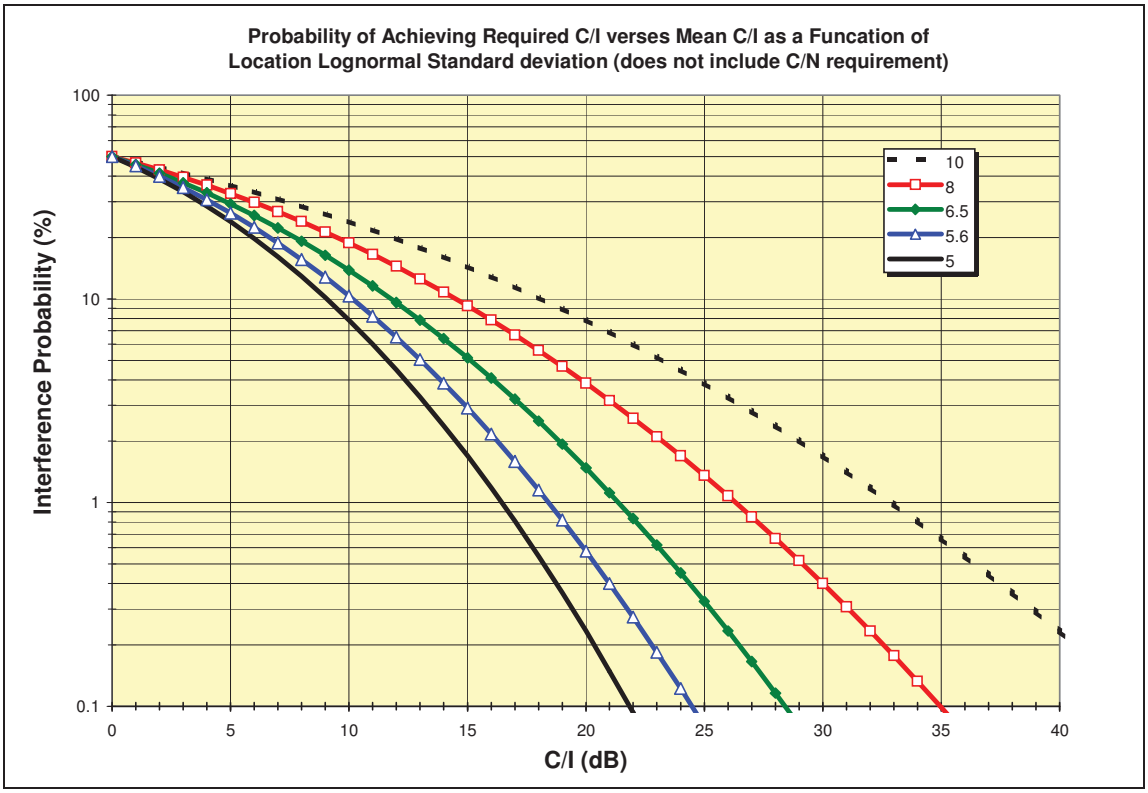


Figure 11 - Probability Of Achieving Required C/I As A Function Of Location Standard Deviation

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 11 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 12 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 with the noise criterion not being met, resulting in less degradation of the 90%.

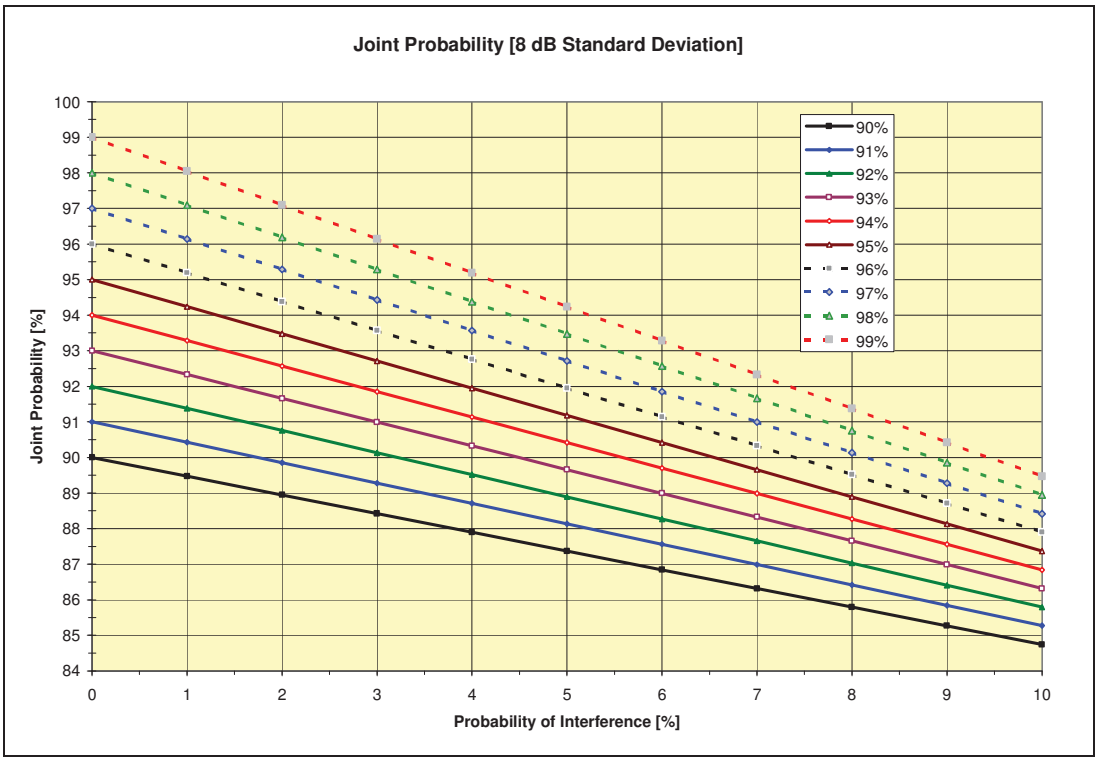
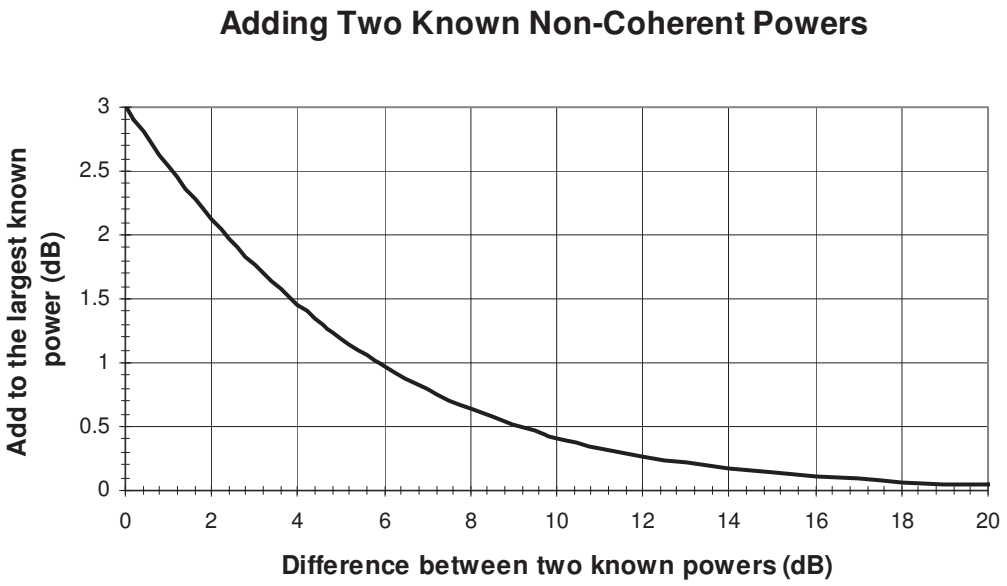


Figure 12 - Effect Of Joint Probability On The Composite Probability

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.



In order to sum the power of two or more signals expressed in dBm or dBµ, the 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 a 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. The 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 A is –96.3 dBm. Signal B is –95.2 dBm. The 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.

9 UTILIZATION OF NATIONAL INTEROPERABILITY CHANNELS

The narrowband voice & data interoperability channels as listed in Appendix E are defined on a nationwide basis. Appendix E shows the designation of these channels. Since they are nationwide channels, each channel must have the same usage within each region and across regional borders. They have been sub-divided into different service categories.

The ANSI/TIA 102 Series standards (Project 25) are the Digital Interoperability Standard for the conventional-only mode of operations on narrowband voice and data interoperability channels.

9.1 Calling Channels

Because the 700 MHz band will be initially encumbered by broadcast television, two of the interoperability channels sets are reserved as "Calling Channels". The States will define when and where the two calling channels are to be used. These calling channels, which appear in the Table of Interoperability Channels (Appendix E) as “7CAL59” and “7CAL75” must be monitored, as appropriate, by licensees who employ interoperability infrastructure in the associated channel group. When calling channels are integrated into infrastructure, their coverage must at least match the coverage of the other interoperability channels in the system. In addition to the usual calling channel functions, the calling channels may be used to notify users when a priority is declared on one or more of the tactical interoperability channels.

9.2 Tactical Channels

All Interoperability channels are listed in Appendix E. Appendix E also indicates those interoperability channels designated for conventional use and those designated for non-conventional use. Normally, users will 'call' a dispatch center on one of the "Calling Channels" and be assigned an available tactical channel. Deployable narrowband operations (voice, data, or trunking) shall be afforded access to the same pool of channels used for similar fixed infrastructure operations. In the event of conflict between multiple activities, prioritized use shall occur.

9.3 Air to Ground (previously known as secondary trunked channels)

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

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

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

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

Region 14 will collaborate with the Indiana SIEC and Region 54 to administer and manage the Air to Ground Channels (secondary trunk channels).

9.4 Encryption

While NIMS recommends plain language in incident command, the use of encryption may be appropriate in certain instances, such as interagency transmission of patient health information, interagency law enforcement communications, interagency communication of national security information, or other uses as defined by the RPC where transmission of unencrypted communication may put individuals or property at risk or may violate privacy laws.

Use of encryption is prohibited on all Calling channels.

Encryption may be used on specified interoperable channels listed in Appendix E only by agencies that specifically request permission and are granted permission to use encryption by the RPC as part of the frequency coordination process. Encrypted communications may take place only between two or more agencies, both of which are authorized to use encryption on interoperable channels. It is incumbent upon the licensees to monitor internal traffic and insure that encrypted communications taking place by member of their agency are necessary to avoid unnecessary risk or comply with legal privacy requirements.

A Standardized encryption algorithm for use on the interoperability channels must be TIA/EIA IS AAAA-A Project 25 Block encryption protocol.

9.5 Deployable Systems

The RPC has identified a number of deployable conventional and trunked channels, listed in Appendix E, which are to be utilized only during disasters and other emergency events that place a heavy, unplanned burden upon in-place radio systems. These channels are intended to be used by temporary equipment such as portable/mobile repeaters or mobile trunked auxiliary equipment or other temporary communications support equipment.
These channels are for the use of all 700 MHz licensees within the State of Indiana.

9.6 Trunking on the Interoperability Channels

While shared trunking on a secondary basis may be a possibility in the future, the Indiana Region 14 Planning Committee has chosen not to implement such a plan at this time. This does not preclude the RPC from taking such action in the future.

9.7 Standardized Nomenclature

Standardized nomenclature is recommended nationwide such that that all 700 MHz public safety subscriber equipment using an alphanumeric display only be permitted to show the recommended label from the Table in Appendix E when the radio is programmed to operate on the associated 700 MHz channel set. The Table shows the recommended label for equipment operating in the mobile relay (repeater) mode. When operating in direct (simplex) mode, the letter “D” shall be appended to the end of the label.

9.8 Data Only Use of the INTEROPERABILITY Channels

Narrowband data-only interoperability operation on the Interoperability channels on a secondary basis shall be limited to two specific 12.5 kHz channel sets

9.9 Minimum Channel Quantity

The minimum channel quantity for Calling and tactical channel sets requires 8 interoperability channel slots in each subscriber unit. Including direct (simplex) mode on these channel sets, up to 16 slots in each radio will be programmed for interoperability purposes. Subscriber units, which routinely roam through more than one jurisdiction up to nationwide travel will require more than the minimum channel quantity.

The CALLing channel sets listed in Appendix E shall be implemented in all voice subscriber units in repeat-mode and direct (simplex) mode. Direct mode is permitted in the absence of repeat operation or upon prior dispatch center coordination.

A minimum set of “TACtical” channels shall be implemented in every voice subscriber unit in the direct (simplex) mode. Specific channel sets are shown Appendix E.

NOTE: Selection of the above TAC channels are based on the revised Table of Interoperability Channels. Channel labels are selected from the National Public Safety Telecommunications Council (NPSTC) interoperability channel naming nomenclature.

Voice subscriber units subject to multi-jurisdictional or nationwide roaming should have all interoperability voice channels, including direct (simplex) mode, programmed for use.

9.10 Direct (Simplex) Mode

In direct (simplex) mode, transmitting and receiving on the output (transmit) side of the repeater pair for subscriber unit-to-subscriber unit communications at the scene does not congest the repeater station with unnecessary traffic. However, should someone need the repeater to communicate with the party who is in direct mode, the party would hear the repeated message, switch back to the repeater channel, and join the communications. Therefore, operating in direct (simplex) mode shall only be permitted on the repeater output side of the voice interoperability channels sets.

9.11 Common Channel Access Parameters

Common channel access parameters will provide uniform interoperability communications regardless of jurisdiction, system, manufacturer, etc. Thus, the Calling and TAC channels (all of them) should include a common Network Access Code (NAC) as the national standard. The secondary, trunked interoperability channels would be excluded in the trunked mode. However, when reverted to conventional interoperability, the common NAC would then apply. This national requirement applies to base stations and subscriber units. It also applies to fixed or temporary operations; and to tactical, or other mutual aid conventional interoperability use.

Common channel access parameters for all voice interoperability shall utilize the default values (ANSI/TIA/EIA-102, BAAC-200, approved April 25, 2000) provided in every radio regardless of manufacturer. Any common channel access parameters not provided shall be programmed accordingly. These parameters include the following:

P25 Network Access Code - $293 (default value)
P25 Manufacturers ID - $00 (default value)
P25 Designation ID - $FFFFFF (designates everyone)
P25 Talkgroup ID - $0001 (default value)
P25 Message Indicator - $000000…0, out to 24 zeros (unencrypted)
P25 Key ID - $0000 (default value)
P25 Algorithm ID - $80 (unencrypted)

10 UTILIZATION OF INTEROPERABILITY CHANNELS

The narrowband voice & data interoperability channels (sixty-four at 6.25 kHz bandwidth) are defined on a nationwide basis. Appendix E shows the designation of these channels as defined by the 700 MHz National Coordination Committee (NCC). Since they are nationwide channels, each channel must have the same usage within each region and across regional borders. They have been sub-divided into different service categories.

The ANSI/TIA 102 Series standards (Project 25) are the Digital Interoperability Standard for the conventional-only mode of operations on narrowband voice and data interoperability channels.

There are 2 Calling channel sets and 30 Tactical channel sets. Channel sets are comprised of two 6.25 kHz channels each.

The Tactical channel sets are subdivided into the following categories:

Discipline or Use	Quantity
Emergency Medical Services	4
Fire Services	4
Law Enforcement Services	4
Mobile Repeater operation	2
Other Public Services	2
General Services	12
Data Services	1

Table 14.

10.1 Calling Channels

Because the 700 MHz band will be initially encumbered by broadcast television, two of the interoperability channels sets are reserved as "Calling Channels". The States will define when and where the two calling channels are to be used. These calling channels, which appear in the Table of Interoperability Channels (Appendix E) as “7CAL59” and “7CAL75” must be monitored, as appropriate, by licensees who employ interoperability infrastructure in the associated channel group. When calling channels are integrated into infrastructure, their coverage must at least match the coverage of the other interoperability channels in the system. In addition to the usual calling channel functions, the calling channels may be used to notify users when a priority is declared on one or more of the tactical interoperability channels.

10.2 Tactical Channels

All Interoperability channels, except as described below, shall be used for conventional-only operation. Normally, users will 'call' a dispatch center on one of the "Calling Channels" and be assigned an available tactical channel. Deployable narrowband operations (voice, data, trunking) shall be afforded access to the same pool of channels used for similar fixed infrastructure operations. In the event of conflict between multiple activities, prioritized use shall occur.

10.3 Encryption

Use of encryption is prohibited on all Interoperability channels, both Calling and Tactical.

10.4 Deployable Systems

General Public Safety Services Channels labeled 7EMS60 through 7FIR65, 7TAC74 through 7TAC79, or both, shall be made available for "deployable" equipment used during disasters and other emergency events that place a heavy, unplanned burden upon in-place radio systems. States shall consider the need for both "deployable trunked" and "deployable conventional" systems and make those channels available to all entities in their State/region.

10.5 Trunking on the Interoperability Channels

Trunking the Interoperability channels on a secondary basis shall be limited to operation on eight specific 12.5 kHz channel sets, divided into two subsets of four 12.5 kHz channels. One subset is defined by 7EMS60 through 7TAC63 and the other by 7TAC74 through 7FIR80.

10.6 Standard Operating Procedures on the Trunked I/O Channels For I/O Situations Above Priority Level 4

The safety and security of life and property determines appropriate interoperable priorities of access and/or reverting from secondary trunked to conventional operation. Access priority for “mission critical” communications is defined as follows:

1. Disaster and extreme emergency operations for mutual aid and interagency communications;
2. Emergency or urgent operation involving imminent danger to life or property;
3. Special event control, generally of a preplanned nature (including Task Force operations);
4. Single agency secondary communications. [Priority 4 is the default priority when no higher priority has been declared.]

For those systems employing I/O channels in the trunked mode, the State must set up interoperability talk groups and priority levels for those talkgroups so that it is easy for dispatch to determine whether the trunked I/O conversation in progress has priority over the requested conventional I/O use. States must also determine whether a wide-area I/O conversation has priority over a local I/O conversation.

10.7 Standardized Nomenclature

Standardized nomenclature is recommended nationwide such that that all 700 MHz public safety subscriber equipment using an alphanumeric display only be permitted to show the recommended label from the Table in Appendix E when the radio is programmed to operate on the associated 700 MHz channel set. The Table shows the recommended label for equipment operating in the mobile relay (repeater) mode. When operating in direct (simplex) mode, the letter “D” shall be appended to the end of the label.

10.8 Data Only Use of the I/O Channels

Narrowband data-only interoperability operation on the Interoperability channels on a secondary basis shall be limited to two specific 12.5 kHz channel sets. One set is defined by 7DAT71 and the other by 7DAT87.

10.9 State Interoperability Executive Committee

The Indiana State Interoperability Executive Committee is being formed to administer a State Interoperability Plan in Indiana. This plan includes, but is not limited to, interoperability operations on the 700 MHz interoperability channels. This committee includes an equal number of representatives each providing regional representation from state, county, and local governments, with additional representation from special districts and federal agencies, as appropriate. The committee will represent all disciplines, in which case emergency medical, fire, forestry, general government, law enforcement, and transportation agencies from each level of government shall be represented equally.

Region 14 will use the Incident Command System (ICS) as a guideline in developing their regional interoperability plans. (See Appendix F) In the event that a State will not accept this responsibility, the RPC shall develop such plans.

Only the State of Indiana shall hold licenses on interoperability channels for all infrastructure and subscriber units within the State. In the event that the State declines to do so, it may delegate this responsibility to the RPC.

The State of Indiana will have oversight of the administration and technical parameters of the infrastructure for the interoperability channels, unless it relinquishes this right to the RPC.

Recommended templates for a Memorandum of Understanding for Operating the 700 MHz Interoperability Channels and a Sharing Agreement are attached in Appendix G. The MOU shall be typed on appropriate committee letterhead and the Sharing Agreement on agency letterhead.

10.10 Minimum Channel Quantity

The minimum channel quantity for Calling and tactical channel sets requires 8 I/O channel slots in each subscriber unit. Including direct (simplex) mode on these channel sets, up to 16 slots in each radio will be programmed for I/O purposes. Backbone issues are deferred to the SIECs. Subscriber units, which routinely roam through more than one jurisdiction up to nationwide travel will require more than the minimum channel quantity.

The CALLing channel sets (7CAL59 and & 7CAL75) shall be implemented in all voice subscriber units in repeat-mode and direct (simplex) mode. Direct mode is permitted in the absence of repeat operation or upon prior dispatch center coordination. If the local CALLing channel set is not known, 7CAL59 shall be attempted first, then 7CAL75. Attempts shall be made on the repeater mode first, then on the direct (simplex) mode.

A minimum set of “TACtical” channels shall be implemented in every voice subscriber unit in the direct (simplex) mode. Specific channel sets are shown below (SIECs will have the option to exceed this minimum requirement.)

7FIR64 &7TAC78 channel sets
7LAC70 &7LAW85 channel sets
7EMS76 &7TAC89 channel sets

NOTE: Selection of the above TAC channels are based on the revised Table of Interoperability Channels. Channel labels are a compromise between the 4th R&O and IO-0062D-20010118.

Voice subscriber units subject to multi-jurisdictional or nationwide roaming should have all I/O voice channels, including direct (simplex) mode, programmed for use.

10.11 Direct (Simplex) Mode

In direct (simplex) mode, transmitting and receiving on the output (transmit) side of the repeater pair for subscriber unit-to-subscriber unit communications at the scene does not congest the repeater station with unnecessary traffic. However, should someone need the repeater to communicate with the party who is in direct mode, the party would hear the repeated message, switch back to the repeater channel, and join the communications. Therefore, operating in direct (simplex) mode shall only be permitted on the repeater output side of the voice I/O channels sets.

10.12 Common Channel Access Parameters

Common channel access parameters will provide uniform I/O communications regardless of jurisdiction, system, manufacturer, etc. Thus, the Calling and TAC channels (all of them) should include a common Network Access Code (NAC) as the national standard. The secondary, trunked I/O channels would be excluded in the trunked mode. However, when reverted to conventional I/O, the common NAC would then apply. This national requirement applies to base stations and subscriber units. It also applies to fixed or temporary operations; and to tactical, vice, or other mutual aid conventional I/O use.

Common channel access parameters for all voice I/O shall utilize the default values (ANSI/TIA/EIA-102, BAAC-200, approved April 25, 2000) provided in every radio regardless of manufacturer. Any common channel access parameters not provided shall be programmed accordingly. These parameters include the following:

P25 Network Access Code - $293 (default value)
P25 Manufacturers ID - $00 (default value)
P25 Designation ID - $FFFFFF (designates everyone)
P25 Talkgroup ID - $0001 (default value)
P25 Message Indicator - $000000…0, out to 24 zeros (unencrypted)
P25 Key ID - $0000 (default value)
P25 Algorithm ID - $80 (unencrypted)

Any deviation from $293 will not be permitted unless the SIEC can demonstrate in a Plan amendment through the FCC-approved process that the intent of $293 will be preserved on ALL conventional voice I/O channels – transmit and receive.

10.13 ADDITIONAL SPECTRUM SET ASIDE FOR INTEROPERABILITY WITHIN THE REGION

Region 14 is not setting aside any additional spectrum for Interoperability other than what is listed in Table 3 and Appendix G. However, Region 14 RPC reserves the right to review and allocate spectrum if needed for the purpose of mutual aid / interoperability.

11 ALLOCATION OF GENERAL USE SPECTRUM

Frequencies are allotted to a county area. Region 14 will utilize **"county areas"** as guidelines for channel implementation. The definition of **"county area"** in this plan is the geographical/political boundaries of a given county, plus a distance of up to 10 miles outside of the county. If after five years, a frequency allotted to a county area has not been assigned, the RPC may reallocate those frequencies. Once a license has been applied for, if after five years of licensing, a system has not been built, the committee may reassign those frequencies. Although this may not be applicable, it will require case by case review.

Allotments will be made in 25 KHz groups to allow for various digital technologies to be implemented. These allotments have been pre-determined by the CAPRAD database. The use of 25 kHz building blocks allows for technology-neutral pre-planning. Agencies using Frequency Division Multiplexing (FDMA) will be expected to maintain 12.5 KHz equivalency when developing systems and will also be expected to attempt to utilize both 12.5 KHz portions of the 25 KHz block. In most cases, this will require the geographic separation of each 12.5 KHz adjacent channel. If a licensee chooses a technology that does not use their entire 25 kHz allotment, they shall return the unused bandwidth to the region's 'general use' pool or work with the RPC and/or frequency coordinators to trade for another equivalent allotment.

If agencies choose a technology that requires less than 25 kHz channel bandwidth for their system, there is the potential for residual, "orphaned channels" of 6.25 kHz or 12.5 kHz bandwidth immediately adjacent to the assigned channel within a given county area.

An orphan channel may be used at another location within the county area where it was originally approved, if it meets co- and adjacent channel interference criteria. Region 14 will utilize **"county areas"** as guidelines for channel implementation with the area of Region 14. If the channel, or a portion of a channel, is being moved into a "county area" that is within 30 miles of an adjacent region, Region 14 will receive concurrence from the affected Region. By extending the "county area" by a designated distance, it is anticipated this will increase the possibility that orphaned channel remainders will still be able to be utilized within the "county area", and reduce the potential for channel remainders to be forced to lay dormant and used with a county channel allotment. These movements will be documented on the National Public Safety Telecommunications Council CAPRAD database.

If the "orphaned channel" remainder does not meet co-channel and adjacent channel interference criteria by moving it within the "county 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 in the “county area” listed above, Region 14 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 14 Regional Planning Committee shall have the authority to move orphan channel allotments, and/or co-/adjacent-channel allotments affected by the movement of orphan channels, within its “county 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.

Applications within Region 14 will be handled on a first-come, first-served basis unless competing applications are received simultaneously. In such cases, or in instances where a shortage of 700 MHz spectrum develops, the application evaluation procedures described in Section 9 of this Plan will be employed.

If NPSPAC channels are still available in an area of the region, the 700 MHz RPC will work with the NPSPAC RCRC, where technically appropriate, to complete the NPSPAC allocation before allocating the 700 MHz spectrum.

12 AN EXPLANATION OF HOW NEEDS WERE ASSIGNED PRIORITIES IN AREAS WHERE NOT ALL ELIGIBLES COULD RECEIVE LICENSES.

A matrix will be used to evaluate competing applications within the Region. Points will be awarded more stringently in Primary Zone applications. The applications receiving the highest number of points will receive the channels. There are seven scoring categories:

Service (Maximum score 300 points)

Each of the eligible services and each use has a predetermined point value shown in Table 15. Total points for this block will be the sum of the point assignments for each service and use the system is to support.

SERVICE	POINTS
Federal	18
State	18
County	18
Police	18
Fire	18
EMS	18
Emergency Management	18
General Government	18
Forestry Conservation (do we really need this?)	18
Highway Maintenance	18
USE	
Rescue	40
Safety of Life and Property	40
Environmental Protection	40
MAXIMUM TOTAL	300

Table 15 - Service and Use Scoring Table

- Intersystem & Intrasystem interoperability (Maximum score 150 points)

  Interoperability must exist among many agencies to successfully accomplish the highest level of service delivery to the public during a major incident, accident, natural disaster or terrorist attack. The applicant shall stipulate how they will accomplish interoperability in their proposed system (gateway, switch, cross-band repeater, console cross patch, software defined radio, or other means).
  This category does not rate the application on the inclusion of interoperability channels but on the proposed, actual ability to communicate with different levels of government and services during a time of emergency. The application is scored on the degree of interoperability that is demonstrated; points range from 0 to 150; points will be deducted based upon their lack of inter-system communications.

  Deduct fifteen (15) points for each radio service-type function (see Table-1 for the list of services – 10 services and 15 points per service gives 150 points) in which the application lacks communication at the operator position via console patch or other means, when direct, mobile-to-mobile communication does not exist. Deduct five (5) points for each radio service the applicant lacks direct mobile-to-mobile communications with.

- Loading (Maximum score 150 points)

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

Multi-agency, multi-discipline, fully loaded system	150 points
Multi-agency trunked, fully loaded system	125 points
Trunked system, fully loaded	100 points
Mobile data channel, fully loaded / channel	75 points
Conventional system, fully loaded / channel	50 points

  Expansion of existing systems will be evaluated according to their qualifications in one of the aforementioned categories. Any system less than fully loaded will have its score multiplied by the proportion:

  Subscriber Units ÷ (Number of Channels × 100) = _____%

  Example of 450 units with 5 channels:

  450 ÷ (5 × 100) =
  450 ÷ (500) = 90 %
  90% × maximum category points

  A fully loaded channel is a channel with a minimum of 100 units per 12.5 kHz voice channel (or 200 per 12.5 kHz data channel). Control channels shall be considered communications channels. Plans submitted to the RPC shall stipulate the number of communications and control channels).

  Each application for a trunked system shall certify that a minimum of 100 mobile units for each channel will be placed in service within five (5) years of the initial plan approval date. If that is not the case, then less-than-fully loaded channels shall be returned to the allotment pool, and the licensee shall modify the license accordingly. Conventional channels shall be loaded to 10 mobile units per channel. Where an applicant does not load a channel to 100 mobile units, the channel will be available for assignment to other licensees. Mobile, portable, and control stations will be considered as mobile units.

- Spectrum Efficient Technology (Maximum score 100 points)

  The application will be scored on the degree of spectrum-efficient technology that the system demonstrates. A trunked system will be considered spectrum-efficient technology, as is any technological systems feature that is designed to enhance the efficiency of the system and improve the efficient use of spectrum.

  Spectrum Efficiency Points:

Trunked or equally high-efficient technology	50 points
Conventional system using data	50 points
Technologies that increase system throughput	50 points

- Systems Implementation Factors (Maximum score 100 points)

  This category scores the applicant on two factors, budgetary commitment and planning completeness. The degree of budgetary commitment is scored on a range of 0 to 50 points. An applicant who demonstrates a high degree of commitment in funding the proposed system will receive the higher score. Each applicant will be scored on the degree of planning completeness with a range of scoring from 0 to 50 points. Applicants will be required to submit a timetable for the implementation of the communications system or systems.

  Description:

Multi-phase project with funds committed to all phases	50 points
Multi-phase project plan completed for all phases	50 points

  Applicants with less than a complete funding commitment and/or incomplete plans will have their point score reduced accordingly. Resolutions shall be included in each plan stating the applicants governing boards (or equal) financial commitment.

- System Density (Maximum Score 100 points)

  Each applicant will be scored on the ratio of subscriber units to the area covered.

  System Density Points

  (Total number of subscriber units) ÷ (area in sq miles) × 100 = _____

- Frequency Givebacks (Maximum score 100 points)

  The applicant is scored on the number of channels given back. The greater the number of channels given back, the higher the score.

  Number of frequencies relinquished × 10 = score

13 AN EXPLANATION OF HOW ALL THE REGION ELIGIBLES' NEEDS WERE CONSIDERED, AND TO THE EXTENT POSSIBLE, MET

Applications will be submitted to the local Regional Planning Committee via CAPRAD along with notification to the Regional Chairperson from the applicant. The Regional Conformance Review Committee will review the application packet for completeness, and the eligibility of the applying organization. Incomplete applications, or applications from agencies which are not considered by this Plan to be eligible for the limited spectrum, will be returned to the applicant with the appropriate remarks.

INFORMATION REQUIRED:

- Completed FCC ULS 601 Form(s);
- Statement of need for installing a new 700 MHz system to include an explanation of the budget commitment for the proposed system with agency budgets and funding sources.
- Explanation of the systems future growth for all agencies involved in the system.
- Explanation of how the system will interface with long distance radio communications, such as; amateur radio, satellite communications, and/or long range emergency preparedness communications systems.
- Details of engineering surveys and/or maps showing radio coverage will not exceed the applicant's requirements or create interference to other systems, TV or Canadian broadcasters.
- List all participating agencies public safety (PW) radio frequencies. Describe how they are utilized and the date they are to be returned to the PW pool.
- Explain how the system will communicate with other services in other bands and certify that the applicant's agency will comply with the interoperability requirements of the SIEC plan.
- Any 821 MHz systems that are expanding to 700 MHz channels shall explain how they plan to meet the interoperability requirements of both plans.
- List mobile and portable units by agency inventory.
- Indicate the PW frequency coordinator the applicant desires to have coordinate the license application (AASHTO, APCO, FCCA, or IMSA).
- Applicants shall provide a review analysis of the approval matrix scoring components, found in Section 9 of this plan, and incorporate the point score their application has attained which will be reviewed by the Technical subcommittee if a competing application is received.

The Regional Conformance Review Committee may require additional information at any time during review to assist in evaluation. Application packages are to be submitted to CAPRAD and posted one month prior to the meeting. The review meetings are held on a regular basis semi-annually.

14 ADJACENT REGION COORDINATION

There are five planning regions that are adjacent to the Indiana Region. They consist of Southern Illinois Region 13, Southern Lake Michigan Region 54, Michigan – Region 25, Ohio – Region 33, and Kentucky – Region 21.

Communication among regions has thus been ever present during the drafting of this Plan. Implementation of each of the five plans will likewise be coordinated through the mutual membership and cooperation of the planning committees.

Counties or other geographic subdivisions within 70 miles of the Regional border need to share spectrum with the adjacent Region(s). The sharing indicated is inherent in the NPSTC Packing Program, as it views all counties nationwide as separate entities while ignoring state borders. With all criteria being equal, this ensures all counties are provided sufficient spectrum in accordance with their surrounding counties. The appropriate ratio of channels shall be allotted to counties in adjacent Regions based upon each county's population. A 25 kHz building block will be used to distribute spectrum between the Regions. A description of the demographics of the affected border areas shall be included.

Attached are signed concurrences from each adjacent Region, located in Appendix K.

15 A DETAILED DESCRIPTION OF HOW THE PLAN PUT SPECTRUM TO THE BEST POSSIBLE USE

Applicants are required to design their systems to maximize spectrum utilization, e.g., utilize simulcast or spectrum efficient technology. The 700 MHz FCC rules require trunking when using 6 or more channels unless the applicant can demonstrate that conventional use of the channels was at least as efficient as trunking. Multiple users within a given political subdivision are required to use a common system whenever possible.

Initial allotments will be made on the basis of 25 kHz channels. To maximize spectrum utilization, prudent engineering practices and receivers of the highest quality must 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 (ie; areas with the established service area having minimum signal strength below 40 dBu), or the systems utilize low quality receivers. The applicants implementation of prudent engineering practices will be encouraged by the
Regional Planning Committee 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 channel per 6.25 KHz of spectrum. When applying for channels within Region 14, the applicants should acknowledge the deadline for converting all equipment to 6.25 kHz or 6.25 kHz equivalent technology is 12/31/2016. As 6.25 KHz migration evolves, an agency that creates any “orphaned” 6.25 KHz channels should realize that these channels would be allocated to nearby agencies requesting channels to maintain consistent grouping and utilization of 25 KHz blocks within the region. (See Section 8)

Region 14 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. The Region 14 Committee advocates the sharing of infrastructure and spectrum resources to promote large area systems thus promoting wide area coverage and daily system interoperability.

16 A DETAILED DESCRIPTION OF THE FUTURE PLANNING PROCEDURES

Appendix H describes Region 14’s Intra-Regional Dispute Resolution Process. The Region will update the CAPRAD database as spectrum allocations are made and FCC licenses are granted.

17 A CERTIFICATION BY THE REGIONAL PLANNING CHAIRPERSON THAT ALL PLANNING COMMITTEE MEETINGS, INCLUDING SUBCOMMITTEE OR EXECUTIVE COMMITTEE MEETINGS WERE OPEN TO THE PUBLIC

The Indiana 700 MHz Regional Planning Committee derives its authority to carry out the activities required for composition and implementation of this Plan from the Commission's Report and Order General Docket No. 96-86 released on September 29th 1998.

I hereby certify that all planning committee meetings, including subcommittee or executive committee meetings were open to the public.

Signed: _ H. Anthony Stantz, Chairman 4/30/09

18 APPENDIX A - THE BYLAWS OF REGION 14

700 MHz Planning Committee

ARTICLE I

NAME & PURPOSE

1.1 Name and purpose. The name of this Region shall be **Region 14 700 MHz Planning Committee**, commonly referred to as the *Indiana Region*. This region consists of eighty-two (82) of the ninety two (92) counties of Indiana. The Committee's primary purpose is to design, develop and implement a regional plan for the use of radio frequencies in the 700 MHz Public Safety Band throughout the specified service area.

ARTICLE II

MEMBERS

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

2.1 Region 14 shall have two classes of members, 'voting members' and 'non-voting members'. New members may be added as needed. Voting members shall consist of one (1) representative from each eligible public safety agency participating on the Region 14 RPC, and each frequency advisor who is authorized by the FCC to perform frequency coordination tasks for the spectrum in the 764 - 776/794 - 806 band. An agency shall be allowed no more than one vote for each distinct eligibility category within the agency's organization or political jurisdiction. Non-voting members are all others interested in furthering the goals of public safety communications.

2.2 Membership shall be from the date of acceptance until resignation or removal.

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

2.5 Resignation. A member may resign by delivering written resignation to the chairman, vice-chairman, treasurer or secretary of the Regional Committee or to a meeting of the members.

2.6 Annual Meetings. The annual meeting of the members shall be held at the Indiana State Police Communications Division, 8500 East 21st Street, Indianapolis, IN during April of each year. If an annual meeting is not held as herein provided, a special meeting of the members may be held in place thereof with the same force and effect as the annual meeting, and in such case all references in these bylaws, except in this Section 2.6, to the annual meeting of the members shall be deemed to refer to such special meeting. Such special meetings shall be called and notice shall be given as provided in Sections 2.7 and 2.8.

2.7 Special meetings of Region 14 may be called by the chairperson or by the vice-chairperson, or upon written application of two or more members. If an annual meeting is not held as herein provided, a special meeting of the members may be held.

2.8 Call and Notice.

A. Annual meetings. Reasonable notice of the time and place of special meetings of the members shall be given to each member. Such notice need not specify the purposes of a meeting, unless otherwise required by law or these bylaws or unless there is to be considered at the meeting (i) amendments to these bylaws, (ii) an increase or decrease in the number of members, or (iii) removal or suspension of a member who is an officer.

B. Reasonable and sufficient notice. Except as otherwise expressly provided, it shall be reasonable and sufficient notice to a member to send notice by e-mail or facsimile at least five days before the meeting, 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 three days before the meeting.

2.9 Quorum. At any meeting of the members ten per cent (10%) of the 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. Each voting member, representing a particular agency (one vote per agency) shall have one vote; non-voting members have no right to 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.

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 one month 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. Unless otherwise specifically limited by their terms, such proxies shall entitle the holders thereof to vote at any meeting by the proxy and shall terminate after the final adjournment of such meeting.

ARTICLE III

OFFICERS AND AGENTS

3.1 Number and qualification. The officers of the Region 14 Committee shall be a chairman, vice-chairman, secretary and such other officers, if any, as the voting members may determine.

3.2 Election. The officers shall be elected by the voting members.

3.3 Tenure. The officers shall each hold office until the annual meeting of the members held one year from the adoption of these bylaws, or until their successor, if any, is chosen, or in each case until he or she sooner dies, resigns, is removed or becomes disqualified. Subsequent election of officers shall be held at each annual meeting.

3.4 Chairman and Vice-chairman. The chairman 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 chairman shall preside at all meetings of the Regional Committee. The vice-chairman shall have such duties and powers as the voting members shall determine. The vice-chairman shall have and may exercise all the powers and duties of the chairman during the absence of the chairman 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.

3.6 Suspension or Removal. An officer may be suspended with cause by vote of a majority of the voting members.

3.7 Resignation. An officer may resign by delivering his or her written resignation to the chairman, vice-chairman, treasurer, 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 Vacancies. If the office of any officer becomes vacant, the Chairman shall appoint a successor. Each such successor shall hold office for the remainder of the term, after which a new officer shall be elected by the membership.

ARTICLE IV

SUBCOMMITTEES

4.1 Assignment of Tasks. For purposes of dividing the tasks associated with developing and administering this Plan, the Regional Committee shall be organized into Subcommittees. Each subcommittee shall consist of volunteer chairman and members. Other subcommittees may be created by a majority of membership votes.

4.2 Number and Purpose. Initially, the Regional Committee shall be divided into the following five (5) subcommittees for the purposes stated in this section. Subcommittees will exist only until such time as their purpose has been fulfilled.

4.2.1 Rules. This subcommittee shall be comprised of the Committee Officers plus the Indiana State Frequency Advisor (or designee). Its initial purpose is to develop and submit the Plan to the FCC. After approval by the Commission, the Rules Subcommittee will administer all of the Plan's policies and procedures, ensuring that the 700 MHz spectrum is adequately and fairly distributed among Region 14 Public Safety entities. The Rules Subcommittee will continue to exist until such time that the Region 14 700 MHz Planning Committee itself is dissolved in accordance with the conditions set forth under Article VI of these bylaws.

4.2.2 Interoperability. The Interoperability Subcommittee will be comprised of volunteers representing as many different public safety agencies as possible. Its purpose is to identify inter-agency communication requirements throughout the Region. It will also foster cooperation and develop any necessary inter-agency agreements. It will consider and make recommendations on issues such as Incident Command Structure, policy and procedures of operation of the Interoperability Channels, inter-agency memoranda of understanding, etc.

4.2.3 Membership. The Membership Subcommittee will be comprised of as many volunteers as feasible for a working group. They will consider and make recommendations on issues such as eligibility, methods of recruiting a broad base of public safety organizations including Native Americans (i.e. notification of eligibles), opting in / out of Region 14, etc. The Membership Subcommittee will review and approve the voting eligibility of each designated agency representative. The Membership Subcommittee will also ensure that the membership database is kept current.

4.2.4 Technical. The Technical Subcommittee will be comprised of as many volunteers as feasible for a working group. It will consider and make recommendations on issues such as use of a pre-coordination database, frequency reuse, availability of channels, loading criteria, etc.

4.2.5 Implementation. The Implementation Subcommittee will be comprised of as many volunteers as feasible for a working group. It will consider and make recommendations on issues such as application evaluation, frequency coordination, application submittal to the FCC, etc.

4.2.6 Regional Conformance and Review Committee – The Indiana Regional Conformance and Review Committee (IRCRC) will be implemented once the FCC adopts the Region 14 700 MHz Plan. It will consist of one representative from each of the eight (8) Frequency Planning Areas (areas 1-A, 1-B, and 2 through 7); one representative from State Agencies; the APCO Frequency Advisor for Indiana; and the Chairman. Six (6) members plus the IRCRC Chairman must be present, or available to cast a vote during the regular IRCRC called meetings, to constitute a quorum. Each of the ten (10) members shall vote on issues. The Chairman, in case of a tie vote, may cast a vote. The IRCRC will exist to evaluate and approve or deny applications according to the Region 14 700 MHz Plan, and to oversee and implement any future changes to the Plan. See Appendix L for an illustration of the Frequency Planning Areas within Region 14.

ARTICLE V

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, alter, amend, or repeal any bylaws adopted by the Regional Committee members or otherwise adopt, alter, amend or repeal any provision which FCC regulations, or these bylaws, require.

ARTICLE VI

DISSOLUTION

This Regional Committee may be dissolved by the consent of two-thirds plus one of the members in good standing at a special meeting called for such purpose. The FCC shall be notified.

19 APPENDIX B - REGION 14 MEMBERSHIP

NAME	AGENCY	ADDRESS	PHONE	E-MAIL
Chairman Anthony Stantz	Indiana State Police Communications	8500 East 21st Street Indianapolis, IN 46219	317-899-8529	**AStantz@isp.IN.gov**
Vice-Chairman Alex Whitaker	Indiana State Police Communications	8500 East 21st Street Indianapolis, IN 46219	317-899-8529	**AWhitaker@isp.IN.gov**
Secretary Jason Schneidt	Purdue University	401 South Grant St. Lafayette, Indiana 47907	765-494-3408	**jaschneidt@purdue.edu**
Sandra Black	EMR Consultants	46 Allendale Terre Haute, IN	812-299-4818	**slblack@th.twcbc.com**
Donald Kottlowski	Indiana State Police Communications	8500 East 21st Street Indianapolis, IN 46219	317-899-8518	**DKottlowski@isp.IN.gov**
Don West	Indiana Department of Homeland Security	402 West Washington St. Indianapolis, IN	317-232-3849	**dwest@dhs.in.gov**
David Kish	Purdue University	401 South Grant St. Lafayette, Indiana 47907	765-494-0654	**djkish@purdue.edu**

20 APPENDIX C - MEETING ANNOUNCEMENTS

PUBLIC NOTICE

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

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

DA 01-2184
September 19, 2001

WIRELESS TELECOM ACTION

REGION 14 (INDIANA) PUBLIC SAFETY PLANNING COMMITTEES ANNOUNCE FIRST REGION 14 700 MHz REGIONAL PUBLIC SAFETY PLANNING MEETING AND REGION 14 800 MHz REGIONAL PUBLIC SAFETY PLANNING MEETING (GEN. DOCKET NO. 90-178)

The Region 14 (Indiana, except for Southern Lake Michigan[1]) 700 MHz Public Safety Planning Committee and the Region 14 (Indiana, except for Southern Lake Michigan) 800 MHz Regional Conformance Review Committee announce that consecutive meetings will be held on Wednesday, November 14, 2001 at the Indiana State Police District 52 training room located at 8500 East 21st Street, Indianapolis, Indiana.

The first meeting of the Region 14 (Indiana, except for Southern Lake Michigan) 700 MHz Public Safety Planning Committee meeting will convene at 10:00 a.m. The purposes of the meeting are to elect a chairperson and establish the necessary subcommittees.

The Region 14 (Indiana, except for Southern Lake Michigan) 800 MHz Regional Conformance Review Committee will convene its fall meeting at 1:00 p.m., following the adjournment of the Region 14 700 MHz Public Safety Planning Committee meeting. The purpose of the meeting is to review the 800 MHz spectrum use requests currently before the committee.

Both of the Region 14 Public Safety Planning Committee meetings are open to the public. All eligible public safety providers in Region 14 may utilize these frequencies. It is essential that participants be representatives of all eligible public safety providers in order to ensure that your agencies' future spectrum needs are considered in the allocation process. Administrators who are not oriented in the communications field should delegate someone with this knowledge to attend, participate and represent your agency's needs.

All interested parties wishing to participate in the planning for the use of new public safety spectrum in the 700 MHz and 800 MHz band within Region 14 should plan to attend. Region 14 welcomes all interested parties to attend, participate and volunteer for committee assignments.

(over)

[1] For the state of Indiana, "Southern Lake Michigan" counties are Lake, La Porte, Jasper, Starke, St. Joseph, Porter, Newton, Pulaski, Marshall and Elkart.

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 06-1873
September 15, 2006

WIRELESS TELECOMUNICATIONS BUREAU ACTION

REGION 14 (INDIANA) 700 MHz PUBLIC SAFETY REGIONAL PLANNING COMMITTEE ANNOUNCES NEXT MEETING

The Region 14 (Indiana) 700 MHz Public Safety Regional Planning Committee will hold its second meeting on Wednesday, November 8, 2006, beginning at 1:00 p.m., at the Indiana Department of Transportation Traffic Management Center, Indiana State Police Post - District 52, 8620 East 21st Street, Indianapolis, Indiana.

- The purpose of the meeting is to examine a rough draft of the Region's 700 MHz Plan, and to establish subcommittees to work on the Plan.

The Region 14 700 MHz Public Safety Planning Committee meeting is open to the public. All eligible public safety providers whose sole or principal purpose is to protect the safety of life, health, or property in Region 14 would 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.

All interested parties wishing to participate in the planning for the use of public safety spectrum in the 700 MHz band within Region 14 are encouraged to attend. For further information, please contact:

H. Anthony Stantz, Chairman
Region 14, 700 MHz Public Safety Planning Committee
Indiana State Police Communications Division
100 North Senate Avenue, Indianapolis, IN 46204
(317) 233-6056
astantz@isp.state.in.us

– FCC –

PUBLIC NOTICE

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

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

DA 06-2594
December 26, 2006

PUBLIC SAFETY AND HOMELAND SECURITY BUREAU ACTION

REGION 14 (INDIANA) PUBLIC SAFETY REGIONAL PLANNING COMMITTEES TO HOLD 700 MHz REGIONAL PUBLIC SAFETY PLANNING AND 800 MHz NPSPAC REGIONAL PUBLIC SAFETY PLANNING MEETINGS

Gen. Docket No. 90-178

The Region 14 (Indiana)[1] Public Safety Regional Planning Committees will hold two consecutive planning meetings on Wednesday, January 24, 2007. Beginning at 10:00 a.m., the 800 MHz Public Safety Regional Planning Committee will convene at the Indiana Department of Transportation Traffic Management Center, Indiana State Police Post, District 52, 8620 East 21st Street, Indianapolis, Indiana. The purpose of this meeting is to review pending 800 MHz applications, and address outstanding issues.

Immediately following the 800 MHz Public Safety Regional Planning Committee meeting, the 700 MHz Public Safety Regional Planning Committee will convene at the same location. The purpose of this meeting is to review the draft 700 MHz plan.

Both of the Region 14 Public Safety Regional Planning Committee meetings are open to the public. All eligible public safety providers whose sole or principal purpose is to protect the safety of life, health, or property in Region 14 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

[1] Region 14 (Indiana) area includes the entire state of Indiana, except the Southern Lake Michigan counties of Lake, Laforte, Jasper, Jasper, Starke, St. Joseph, Porter, Newton, Pulaski, Marshall and Elkart Counties.

PUBLIC NOTICE

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

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

DA 07-1331
March 16, 2007

PUBLIC SAFETY AND HOMELAND SECURITY BUREAU ACTION

REGION 14 (INDIANA) PUBLIC SAFETY REGIONAL PLANNING COMMITTEE TO HOLD 700 MHz REGIONAL PUBLIC SAFETY PLANNING MEETING

The Region 14 (Indiana)[1] Public Safety Regional Planning Committee will hold its next meeting on Wednesday, April 25, 2007, beginning at 2:00 p.m., at the Traffic Management Center, Indiana State Police Post, District 52, 8620 East 21st Street, Indianapolis, Indiana. The purpose of this meeting is to work on and discuss the draft of the Region plan.

The Region 14 700 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 14 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.

All interested parties wishing to participate in planning for the use of public safety spectrum in the 700 MHz band within Region 14 should plan to attend. For further information, please contact:

Alex R. Whitaker, Vice-Chairman
Region 14 700 MHz Public Safety Regional Planning Committee
Indiana State Police Communications Division

[1] Region 14 (Indiana) includes the entire state of Indiana, except the Southern Lake Michigan counties of Lake, Laforte, Jasper, Starke, St. Joseph, Porter, Newton, Pulaski, Marshall and Elkart Counties.

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 07-2093
May 17, 2007

PUBLIC SAFETY AND HOMELAND SECURITY BUREAU ACTION

REGION 14 (INDIANA) PUBLIC SAFETY REGIONAL PLANNING COMMITTEE TO HOLD 700 MHz REGIONAL PUBLIC SAFETY PLANNING MEETING

The Region 14 (Indiana)[1] Public Safety Regional Planning Committee will hold its next meeting on Wednesday, June 27, 2007, beginning at 1:00 p.m., at the Purdue University Police Department, Terry House Conference Room, 205 South Intramural Drive, West Lafayette, Indiana. The purpose of this meeting is to work on and discuss the draft of the Region plan.

There will be telephone conferencing during the meeting for those who are unable to attend. The telephone conference number is (765) 496-6523. Those experiencing difficulty connecting to the conference bridge may call the Purdue University Operator at (765) 494-4600.

The Region 14 700 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 14 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.

All interested parties wishing to participate in planning for the use of public safety spectrum in the 700 MHz band within Region 14 should plan to attend. For further information,

[1] Region 14 (Indiana) includes the entire state of Indiana, except the Southern Lake Michigan counties of Lake, Laforte, Jasper, Starke, St. Joseph, Porter, Newton, Pulaski, Marshall and Elkart Counties.

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 07-3395
July 25, 2007

PUBLIC SAFETY AND HOMELAND SECURITY BUREAU ACTION

REGION 14 (INDIANA) PUBLIC SAFETY REGIONAL PLANNING COMMITTEE TO HOLD 700 MHz REGIONAL PUBLIC SAFETY PLANNING MEETING

The Region 14 (Indiana)[1] Public Safety Regional Planning Committee will hold its next meeting on Wednesday, August 22, 2007, beginning at 1:00 p.m., at the Indiana State Police Communications Division Training Room, 8500 East 21st Street, Indianapolis, Indiana.

The purpose of this meeting is to work on and discuss the draft of the Region plan. There will be telephone conferencing during the meeting for those who are unable to attend. The telephone conference number is (317) 233-0451. Those experiencing difficulty connecting to the conference bridge may call Gerry VanFossan in the Indianapolis State Police Communications Division at (317) 899-8526

The Region 14 700 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 14 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.

All interested parties wishing to participate in planning for the use of public safety spectrum in the 700 MHz band within Region 14 should plan to attend. For further information, visit http://region14rpc.googlepages.com/ or contact:

[1] Region 14 (Indiana) includes the entire state of Indiana, except the Southern Lake Michigan Indiana counties of Lake, Laforte, Jasper, Starke, St. Joseph, Porter, Newton, Pulaski, Marshall and Elkart Counties.

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 07-3933
September 14, 2007

PUBLIC SAFETY AND HOMELAND SECURITY BUREAU ACTION

REGION 14 (INDIANA) PUBLIC SAFETY REGIONAL PLANNING COMMITTEE TO HOLD 700 MHz REGIONAL PUBLIC SAFETY PLANNING MEETINGS

The Region 14 (Indiana)[1] 700 MHz Public Safety Regional Planning Committee will hold its next meetings as follows:

- Wednesday, October 24, 2007, beginning at 1:00 p.m., at the Greensburg Police Department Training Room, 201 South Broadway, Greensburg, Indiana.
- Wednesday, December 12, 2007, beginning at 1:00 p.m., at the Indiana State Police Communications Division Training Room, 8500 East 21st Street, Indianapolis, Indiana

The purpose of both meetings is to work on and discuss the draft 700 MHz Regional plan.

There will be telephone conferencing during both meetings for those who are unable to attend. The telephone conference number for the Wednesday, October 24, 2007 meeting is (317) 233-3088. The telephone conference number for the Wednesday, December 12, 2007 meeting is (317) 233-3550. Those experiencing difficulty connecting to the conference bridges may call Gerry VanFossan, Indiana State Police Communications Division, at (317) 899-8526.

The Region 14 700 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 14 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] Region 14 (Indiana) includes the entire state of Indiana, except the Southern Lake Michigan counties of Lake, Laforte, Jasper, Starke, St. Joseph, Porter, Newton, Pulaski, Marshall and Elkart Counties.

PUBLIC NOTICE

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

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

DA 08-395
February 15, 2008

PUBLIC SAFETY AND HOMELAND SECURITY BUREAU ACTION

REGION 14 (INDIANA) PUBLIC SAFETY REGIONAL PLANNING COMMITTEE TO HOLD 700 MHz REGIONAL PUBLIC SAFETY PLANNING MEETING

The Region 14 (Indiana)[1] Public Safety Regional Planning Committee will hold its next meeting on Wednesday, March 12, 2008, beginning at 1:00 p.m., at the Indiana University-Purdue University Fort Wayne (IPFW) Walb Student Union, Room G08, Fort Wayne, Indiana.[2] The purpose of this meeting is to work on and discuss the draft of the Region plan.

The Region 14 700 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 14 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.

All interested parties wishing to participate in planning for the use of public safety spectrum in the 700 MHz band within Region 14 should plan to attend. For further information, please contact:

Jason Schneidt, Secretary
Region 14 700 MHz Public Safety Regional Planning Committee
Freehafer Hall, Purdue University
401 South Grant Street
West Lafayette, IN 47907
(765) 494-3408
jaschneidt@purdue.edu

[1] Region 14 (Indiana) includes the entire state of Indiana, except the Southern Lake Michigan counties of Lake, Laforte, Jasper, Starke, St. Joseph, Porter, Newton, Pulaski, Marshall and Elkart Counties.

[2] Additional location information at www.ipfw.edu/wuo or http://region14rpc.googlepages.com.

PUBLIC NOTICE

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

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

DA 08-776
April 1, 2008

PUBLIC SAFETY AND HOMELAND SECURITY BUREAU ACTION

REGION 14 (INDIANA) PUBLIC SAFETY REGIONAL PLANNING COMMITTEE TO HOLD 700 MHz REGIONAL PUBLIC SAFETY PLANNING MEETING

The Region 14 (Indiana)[1] Public Safety Regional Planning Committee will hold its next meeting on Wednesday, May 14, 2008, beginning at 1:00 p.m., at the Indiana State Police Post, District 35 (Training Room), 19411 Highway 41 North, Evansville, Indiana. The purpose of this meeting is to continue to work on and discuss the Region's draft 700 MHz plan. A conference bridge will be available for those who cannot physically attend the meeting. The bridge number is (317) 233-3676.

The Region 14 700 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 14 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.

All interested parties wishing to participate in planning for the use of public safety spectrum in the 700 MHz band within Region 14 should plan to attend. For further information, please contact:

Jason Schneidt, Secretary
Region 14 700 MHz Public Safety Regional Planning Committee
Fire, Security, and Radio Systems Coordinator - Purdue University
401 South Grant Street, West Lafayette, Indiana 47907
(765) 494-3408
jaschneidt@purdue.edu
http://region14rpc.googlepages.com

H. Anthony Stantz, Chairman
Region 14 700 MHz Public Safety Regional Planning Committee
8500 East 21st Street, Indianapolis, Indiana 46219
(317) 899-8524
AStantz@isp.IN.gov

- FCC -

[1] Region 14 (Indiana) includes the entire state of Indiana, except the Southern Lake Michigan counties of Lake, Laforte, Jasper, Starke, St. Joseph, Porter, Newton, Pulaski, Marshall and Elkart Counties.

PUBLIC NOTICE

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

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

DA 08-1512

June 26, 2008

PUBLIC SAFETY AND HOMELAND SECURITY BUREAU ACTION

REGION 14 (INDIANA) PUBLIC SAFETY REGIONAL PLANNING COMMITTEE TO HOLD 700 MHz REGIONAL PUBLIC SAFETY PLANNING MEETING

The Region 14 (Indiana)[1] 700 MHz Public Safety Regional Planning Committee will hold its next meeting on Wednesday, July 23, 2008, beginning at 1:00 p.m., at the Indiana State Police Communications Division Training Room, 8500 East 21st Street, Indianapolis, Indiana.

The purpose of this meeting is to work on, and discuss the draft Regional Plan. Telephone conferencing will be available during the meeting for those who are unable to attend. The telephone conference number is (317) 233-3677. Those experiencing difficulty connecting to the conference bridge may contact Gerry VanFossan, Indiana State Police Communications Division, at (317) 899-8526.

The Region 14 700 MHz Public Safety Regional Planning Committee meeting is open to the public. All public safety providers whose sole or principal purpose is to protect the safety of life, health, or property in Region 14 are eligible to utilize these frequencies. It is essential that public safety agencies in all areas of government, including state, municipality, county, and Native American Tribal, and non-governmental organizations eligible under Section 90.523 of the Commission's rules, 47 C.F.R. § 90.523, be represented in order to ensure that each agency's future spectrum needs are considered in the allocation process. Administrators who are not oriented in the communications field should delegate someone with this knowledge to attend, participate, and represent their agency's needs.

All interested parties wishing to participate in planning for the use of public safety spectrum in the 700 MHz band within Region 14 should plan to attend. For further information, please contact:

Jason Schneidt, Secretary
Region 14 700 MHz Public Safety Regional Planning Committee
Freehafer Hall, Purdue University,
401 South Grant Street
West Lafayette, IN 47907
(765) 494-3408
jaschneidt@purdue.edu

[1] Region 14 (Indiana) includes the entire state of Indiana, except the southern Lake Michigan counties of Lake, Laforte, Jasper, Starke, St. Joseph, Porter, Newton, Pulaski, Marshall and Elkart Counties.

PUBLIC NOTICE

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

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

DA 08-1966

August 26, 2008

PUBLIC SAFETY AND HOMELAND SECURITY BUREAU ACTION

REGION 14 (INDIANA) PUBLIC SAFETY REGIONAL PLANNING COMMITTEES TO HOLD 700 MHZ REGIONAL PUBLIC SAFETY PLANNING AND 800 MHZ NPSPAC REGIONAL PLANNING COMMITTEE MEETINGS

General Docket No. 90-178

The Region 14 (Indiana) Public Safety Planning Committees will hold two consecutive planning meetings on Wednesday, October 1, 2008. Beginning at 10:00 a.m., the Region 14 800 MHz NPSPAC Public Safety Planning Committee will convene at the Indiana State Police Communications Division Training Room, 8500 East 21st Street, Indianapolis, Indiana. The purpose of this meeting is to review several applications that have been submitted to Region 14.

Beginning at 1:00 p.m., the Region 14 700 MHz Public Safety Planning Committee will convene at the same location. The purpose of the meeting is to work on and discuss the draft of the Regional Plan. Telephone conferencing will be available during both meetings for those who are unable to attend in person. The telephone conference number is (317) 233-3677. Those experiencing difficulty connecting to the conference bridge may contact Gerry VanFossan, Indiana State Police Communications Division, at (317) 899-8526.

Both of the Region 14 Public Safety Regional Planning Committee meetings are open to the public. All public safety providers whose sole or principal purpose is to protect the safety of life, health, or property in Region 14 are eligible to utilize these frequencies. It is essential that public safety agencies in all areas of government, including state, municipality, county, and Native American Tribal, and non-governmental organizations eligible under Section 90.523 of the Commission's rules, 47 C.F.R. § 90.523, be represented in order to ensure that each agency's future spectrum needs are considered in the allocation process. Administrators who are not oriented in the communications field should delegate someone with this knowledge to attend, participate, and represent their agency's needs.

All interested parties wishing to participate in planning for the use of public safety spectrum in the 700 MHz and 800 MHz bands within Region 14 should plan to attend. For further information, please contact:

700 MHz Regional Planning
Jason Schneidt, Secretary
Region 14 700 MHz Public Safety Regional Planning Committee
Fire, Security, and Radio Systems Coordinator - Purdue University
401 South Grant Street, West Lafayette, Indiana 47907
(765) 494-3408
jaschneidt@purdue.edu

From: Schneidt, Jason A
Sent: Thursday, July 19, 2007 2:54 PM
To: bcockrum@citiesandtowns.org; cathyr4@hotmail.com; dgosser@indianasheriffs.org; jeannie.benfaida@fcc.gov; k.losavio@elsevier.com; kavery@indianacounties.org; mcfdchief@aol.com; pnelson-shira@radioresourcemag.com; sellis@indfirechiefs.org
Subject: Region 14 (Indiana) 700 MHz RPC Meeting Notice

Attachments: R14 700RPC Meeting Notice 7-10-07.pdf

Good afternoon!

I want to take this moment to introduce myself as the Secretary for the Region 14 (Indiana) 700 MHz Region Planning Committee. The Region 14 RPC is conducting our next meeting August 22nd, 2007 at the Indiana State Police Communications Division Training Room, 8500 East 21st Street, Indianapolis, Indiana. We are interested in reaching as many public safety entities and vendors as possible to discuss state and local needs, encourage innovative use of the 700 MHz spectrum, and accommodate new and as yet unanticipated developments in technology equipment. I am interested in your assistance with posting our meeting notice in bulletins, newsletters, magazines, websites, or any other suitable media that you have available. Attached is a .pdf version of our notice.
Please feel free to visit our website at http://region14rpc.googlepages.com/ for additional information.

Thank you for your assistance!

Jason A. Schneidt
Fire, Security, and Radio Systems Coordinator - Purdue University
Secretary - Region 14 700 MHz Region Planning Committee
765-494-3408
fax 765-494-0489
jaschneidt@purdue.edu
region14rpc@gmail.com

R14 700RPC
:ting Notice 7-1

From: Schneidt, Jason A
Sent: Tuesday, September 11, 2007 8:00 AM
To: Region 14 RPC (region14rpc@gmail.com)
Subject: Region 14 (Indiana) 700 MHz RPC Meeting Notices

Attachments: R14 700RPC Meeting Notice 12-12-07.pdf; R14 700RPC Meeting Notice 10-24-07.pdf

Good afternoon!

I want to take this moment to introduce myself as the Secretary for the Region 14 (Indiana) 700 MHz Region Planning Committee. The Region 14 RPC is interested in reaching as many public safety entities and vendors as possible to discuss state and local needs, encourage innovative use of the 700 MHz spectrum, and accommodate new and as yet unanticipated developments in technology equipment. I am interested in your assistance with posting our meeting notices in bulletins, newsletters, magazines, websites, or any other suitable media that you have available. We have two upcoming meetings scheduled as follows:

-Wednesday, October 24, 2007. The meeting will start at 1:00 p.m. (EST) in the training room of the Greensburg Police Department, 201 South Broadway, Greensburg, IN 47240.
-Wednesday, December 12, 2007. The meeting will start at 1:00 p.m. (EST) at the Indiana State Police Communications Division Training Room, 8500 East 21st Street, Indianapolis, IN.

Attached are pdf versions of our upcoming notices.
Please feel free to visit our website at http://region14rpc.googlepages.com/ for additional information.

Thank you for your assistance!

Jason A. Schneidt
Fire, Security, and Radio Systems Coordinator - Purdue University
Secretary - Region 14 700 MHz Region Planning Committee
765-494-3408
fax 765-494-0489
jaschneidt@purdue.edu
region14rpc@gmail.com

R14 700RPC **R14 700RPC**
ting Notice 12 **ting Notice 10-**

From: Schneidt, Jason A
Sent: Thursday, January 31, 2008 9:57 AM
To: bcockrum@citiesandtowns.org; cathyr4@hotmail.com; dgosser@indianasheriffs.org; jasonschneidt@insightbb.com; jeannie.benfaida@fcc.gov; jnedelman@nena.org; k.losavio@elsevier.com; kavery@indianacounties.org; kkelley@radioresourcemag.com; mccarronc@apco911.org; mcfdchief@aol.com; pnelson-shira@radioresourcemag.com; Region 14 RPC (region14rpc@gmail.com); Schneidt, Jason A; sellis@indfirechiefs.org; Tony Burrus
Subject: Region 14 (Indiana) 700 MHz Public Safety Planning Comm. Meeting Notice

Attachments: R14 700RPC meeting notice for 03-12-08.pdf

Good morning!

I want to take this moment to introduce myself as the Secretary for the Region 14 (Indiana) 700 MHz Region Planning Committee. The Region 14 RPC is conducting our next meeting March 12, 2008 at Indiana University-Purdue University Fort Wayne (IPFW) Walb Student Union, room G08, at 1 p.m. We are interested in reaching as many public safety entities and vendors as possible to discuss state and local needs, encourage innovative use of the 700 MHz spectrum, and accommodate new and as yet unanticipated developments in technology equipment. I am interested in your assistance with posting our meeting notice in bulletins, newsletters, magazines, websites, or any other suitable media that you have available. Attached is a .pdf version of our notice.

Please feel free to visit our website at http://region14rpc.googlepages.com/ for additional information.

Thank you for your assistance!

Jason A. Schneidt
Fire, Security, and Radio Systems Coordinator - Purdue University
Secretary - Region 14 700 MHz Region Planning Committee
765-494-3408
fax 765-494-0489
jaschneidt@purdue.edu
region14rpc@gmail.com

R14 700RPC
eting notice fo

From: Schneidt, Jason A
Sent: Wednesday, March 26, 2008 7:42 AM
To: 'bcockrum@citiesandtowns.org'; 'cathyr4@hotmail.com'; 'dgosser@indianasheriffs.org'; 'jasonschneidt@insightbb.com'; 'jeannie.benfaida@fcc.gov'; 'jnedelman@nena.org'; 'k.losavio@elsevier.com'; 'kavery@indianacounties.org'; 'kkelley@radioresourcemag.com'; 'mccarronc@apco911.org'; 'mcfdchief@aol.com'; 'pnelson-shira@radioresourcemag.com'; 'Region 14 RPC (region14rpc@gmail.com)'; Schneidt, Jason A; 'sellis@indfirechiefs.org'; 'Tony Burrus'
Subject: Region 14 (Indiana) 700 MHz Public Safety Planning Comm. Meeting Notice

Attachments: R14 700RPC meeting notice 03-17-08.pdf

Good morning!

I want to take this moment to introduce myself as the Secretary for the Region 14 (Indiana) 700 MHz Region Planning Committee. The Region 14 RPC is conducting our next meeting May 14, 2008 at Indiana State Police Post, District 35, 19411 Highway 41 North, Evansville, IN. at 1:00 pm. We are interested in reaching as many public safety entities and vendors as possible to discuss state and local needs, encourage innovative use of the 700 MHz spectrum, and accommodate new and as yet unanticipated developments in technology equipment. I am interested in your assistance with posting our meeting notice in bulletins, newsletters, magazines, websites, or any other suitable media that you have available. Attached is a .pdf version of our notice.

Please feel free to visit our website at http://region14rpc.googlepages.com/ for additional information.

Thank you for your assistance!

Jason A. Schneidt
Fire, Security, and Radio Systems Coordinator - Purdue University
Secretary - Region 14 700 MHz Region Planning Committee
765-494-3408
fax 765-494-0489
jaschneidt@purdue.edu
region14rpc@gmail.com

R14 700RPC
eting notice 03-

From: Schneidt, Jason A
Sent: Thursday, June 19, 2008 7:56 AM
To: bcockrum@citiesandtowns.org; cathyr4@hotmail.com; dgosser@indianasheriffs.org; jasonschneidt@insightbb.com; jeannie.benfaida@fcc.gov; jnedelman@nena.org; k.losavio@elsevier.com; kavery@indianacounties.org; kkelley@radioresourcemag.com; mccarronc@apco911.org; mcfdchief@aol.com; pnelson-shira@radioresourcemag.com; Region 14 RPC (region14rpc@gmail.com); Schneidt, Jason A; sellis@indfirechiefs.org; Tony Burrus
Subject: Region 14 (Indiana) 700 MHz RPC Meeting Notice

Attachments: R14 700RPC meeting notice 6-18-08.pdf; R14 700RPC meeting notice 6-18-08.doc

Good morning!

I want to take this moment to introduce myself as the Secretary for the Region 14 (Indiana) 700 MHz Region Planning Committee. The Region 14 RPC is conducting our next meeting July 23rd, 2008 at the Indiana State Police Communications Division Training Room, 8500 East 21st Street, Indianapolis, Indiana. We are interested in reaching as many public safety entities and vendors as possible to discuss state and local needs, encourage innovative use of the 700 MHz spectrum, and accommodate new and as yet unanticipated developments in technology equipment. I am interested in your assistance with posting our meeting notice in bulletins, newsletters, magazines, websites, or any other suitable media that you have available. Attached is a .pdf version of our notice.
Please feel free to visit our website at http://region14rpc.googlepages.com/ for additional information.

Thank you for your assistance!

Jason A. Schneidt
Fire, Security, and Radio Systems Coordinator - Purdue University
Secretary - Region 14 700 MHz Region Planning Committee
765-494-3408
fax 765-494-0489
jaschneidt@purdue.edu
region14rpc@gmail.com

R14 700RPC **R14 700RPC**
ting notice 6-1 **ting notice 6-1**

From: Schneidt, Jason A
Sent: Thursday, August 21, 2008 10:40 AM
To: 'bcockrum@citiesandtowns.org'; 'cathyr4@hotmail.com'; 'dgosser@indianasheriffs.org'; 'jasonschneidt@insightbb.com'; 'jeannie.benfaida@fcc.gov'; 'jnedelman@nena.org'; 'k.losavio@elsevier.com'; 'kavery@indianacounties.org'; 'kkelley@radioresourcemag.com'; 'mccarronc@apco911.org'; 'mcfdchief@aol.com'; 'pnelson-shira@radioresourcemag.com'; 'Region 14 RPC (region14rpc@gmail.com)'; 'sellis@indfirechiefs.org'; 'Tony Burrus'
Subject: Region 14 (Indiana) 700 MHz RPC Meeting Notice

Attachments: R14 700RPC meeting notice 08-20-08.pdf; R14 700RPC meeting notice 08-20-08.doc

Good morning!

I want to take this moment to introduce myself as the Secretary for the Region 14 (Indiana) 700 MHz Region Planning Committee. The Region 14 RPC is conducting our next meeting October 1st, 2008 at the Indiana State Police Communications Division Training Room, 8500 East 21st Street, Indianapolis, Indiana. We are interested in reaching as many public safety entities and vendors as possible to discuss state and local needs, encourage innovative use of the 700 MHz spectrum, and accommodate new and as yet unanticipated developments in technology equipment. I am interested in your assistance with posting our meeting notice in bulletins, newsletters, magazines, websites, or any other suitable media that you have available. Attached is a .pdf version of our notice.
Please feel free to visit our website at http://region14rpc.googlepages.com/ for additional information.

Thank you for your assistance!

Jason A. Schneidt
Fire, Security, and Radio Systems Coordinator - Purdue University
Secretary - Region 14 700 MHz Region Planning Committee
765-494-3408
fax 765-494-0489
jaschneidt@purdue.edu
region14rpc@gmail.com

R14 700RPC **R14 700RPC**
ting notice 08- **ting notice 08-**

21 APPENDIX D - MEETING SUMMARIES, COMMENTS, AND SIGN-IN SHEETS

1/24/07 Region 14 700 MHz RPC

1310 A.W explains need for qualified Pub Safty Participation in the committee to include FCC notification.

Plan must be in place by Feb 2009

- TV Channels still block Indiana using 700 MHz at this time
- adopting Reg 54's Plan (Chicago Metro, NW IND. WISC. S. Mich)
- 1st Draft of Plan is Posted on the Reg 14 Yahoo! Group. A.W. will invite users to the group and grant access to CAPRAD through NLETC/Rocky Mts.
- Reg 14: 82/94 INDIANA Counties in Regional
- meetings every 2 months next meeting in March (Jan/March/May/July/Sept/Nov) Poss 28 March Meetings notices in APCO IDAC Hibbon Official Mag
- Plan includes naming Channels

- New Business

Kelly Dignin resigns as Secretary; A.W opens floor to volunteers for Secretary. A.W. nominates Dave Spencer Seconded by Russell Ricks - Passes

- Region 13 (Illinois) ask for Concurrence Plan Rg 54 has already granted it. A.W. asks for Committee to grant Provisional Authorization. Don K. speaks against Fast tracking. A.W. will Post the R.13 Plan to the Yahoo! group to allow the Committee to review the plan.

1/24/07 700 mhz RPC Pg 2

Ohio R33 Plan is complete, Michigan is done & Kentucky may not have even started.

Missouri has Plan in place and is deploying it

BROADBAND Broadband Missouri Chair Steve Devine has proposed a broadband optimization Plan

qtr Report and Order from FCC proposes to take Data from RPCs and give it to a national organization (Possibly APCO) to allocate Frequencies. Public Safety would have to Pay for usage.

Proposal by Sprint Nextel's C & D Bands "Motion Band" Combine with the Data Channels to make a huge national Broadband System

A.W Reads Broadband Optimization Plan (BOP) letter from Steve Devine and Proposes the RPC back the plan - Discussion follows

Motion by Joe Wright Fishers P.D / Second by D. Spranger Passes by Voice Vote. to back the BOP. A.W. will inform Steve Devine of the vote

4.9 ghz Presentation Doug Keen Carlson Wireless Telephony based 4.9 ghz Technology

Motion To Dismiss by Dave Spranger Seconded by Joe Wright 14:23 hrs

Region 14 Public Safety Regional Planning Committee
700MHz Regional Public Safety Planning Meeting
Purdue University - June 27th, 2007
Meeting Minutes

Committee Members Present:
Anthony Stantz, Chairman
Alex Whitaker, Vice-Chairman

Others Present:
Jason Schneidt, Purdue University
David Kish, Purdue University
Lee W. Hoard, City of Delphi
Galen Logan, Monticello Fire Department
David Schwartz, MECA Indianapolis
Charlie Williams, Tippecanoe County Sheriff
Ed Chapman, City of Delphi
Sandra L. Black, EMR Consulting
Kevin Luse, Monticello Fire Department
Don West, IDHS

Others on Teleconference:
Don Kottlowski, ISP Communications
Fred Craigin, PHI Air Medical

Proceedings:

- *Meeting called to order at 1:16pm by Chair, Anthony Stantz.*
- *Vice-Chair, Alex Whitaker, opens with a discussion about the previous meeting, conducted April 25th, 2007. In detail, Mr. Whitaker recaps the issues with the neighboring region 700 MHz plans introduced at that meeting, and what the current status is regarding those issues.*
    - *The Region 33 700 MHz plan has been rejected by Region 14 due to issues such as frequency allocation and loading requirements. There has been no response to the Region 14 rejection letter that was submitted on May 9th, 2007. Mr. Whitaker is considering re-sending the letter using certified-mail.*
    - *The Region 21 700 MHz plan was approved by Region 14, and the approval letter was sent May 18th, 2007. Awaiting the Inter-regional Dispute document for review.*
    - *The Region 13 700 MHz plan was found to have similar issues as the Region 33 plan regarding frequency allocation. Region 14 sent a rejection letter on June 26th, 2007.*
- *Mr. Whitaker moves on to the discussion of the Federal Communications Commission's Ninth Notice of Proposed Rulemaking (9th NPRM)*
    - *Mr. Whitaker comments that Region 14, and many other public safety entities are against the 9th NPRM. It is believed that a sole contractor and license holder of a nationwide broadband license may not operate with public safety interests in mind. Mr. Stantz comments that the spectrum should be available for users to create their own networks. There is a concern that organizations such as Frontline and Cyren Call have higher priorities with their commercial interests, and may be difficult to deal with regarding public safety.*
    - *Betty Reinhart, Region 14 Motorola liaison for 700 MHz, assisted with a response to the FCC. This response was provided May 22nd, 2007.*

- *Mr. Whitaker moves on to the discussion of the current state of the Region 14 700 MHz plan.*
    - *The plan currently resides at the Region 14 Yahoo Group page, "R14_700MHZ_RPC". The plan currently consists of 87 pages.*
    - *Mr. Whitaker believes that there is enough regular meeting attendance to begin assigning sections to volunteer sub-committees. He offers the following sections:*
        - *Rules*
        - *Technical*
        - *Inter-operability (given to Don West)*
        - *Implementation (for later in the process)*

      Mr. Whitaker offers an invite to volunteer for the remaining sections after the meeting.
    - *David Kish comments that Appendix Q of Region 21's plan contains helpful information regarding a report template.*
    - *Mr. Whitaker would like to present the completed plan to the FCC no later than August of 2008.*

- *Mr. Whitaker discusses the concept of public safety inter-operability and the limited involvement of the IPSC in developing a plan due to SAFE-T and re-banding projects. He anticipates increased involvement now that these projects are winding down.*

- *Don West discusses the role that the IPSC will play in developing a State of Indiana Inter-operability Plan. The IPSC (designated as the SIEC for the State of Indiana by the Governor) is gearing-up to write the plan, now that their previous focus on SAFE-T is winding down. He indicates that an interoperability plan is due November 1st.*

- *Mr. Whitaker identifies the vacant position of secretary within the 700MHz RPC.*
    - *Mr. Whitaker explains the importance of documenting the RPC process and the secretarial involvement in meeting notification and follow-up.*
    - *Mr. Whitaker indicates that Jason Schneidt has volunteered to fill the position, and extends the offer for additional volunteers.*
    - *MOTION to nominate Jason Schneidt as Region 14 700 MHz RPC Secretary seconded by Mr. West, and passed.*

- *Mr. Whitaker closes meeting with a few additional points:*
    - *Next meeting will be held on August 22nd, 2007. Meeting location to be determined.*
    - *Intends to review draft work of the Region 14 700 MHz plan at that time.*
    - *Mr. Whitaker invites all to volunteer to host next meeting, and to join the Yahoo RPC group.*

- *MOTION to adjourn seconded by Mr. Kish, and passed at 2:15pm.*

Minutes submitted by Secretary, Jason Schneidt

Region 14 Public Safety Regional Planning Committee
700MHz Regional Public Safety Planning Meeting
Indiana State Police Communications Division Training Room,
8500 East 21st Street, Indianapolis, Indiana. – August 22nd, 2007
Meeting Minutes

Committee Members Present:
Anthony Stantz, Chairman
Alex Whitaker, Vice-Chairman
Jason Schneidt, Secretary

Others Present:
Don West, IDHS
David Kish, Purdue University
Sandra L. Black, EMR Consulting
Don Kottlowski, ISP Communications
Dan Mulford, Greensburg Police Department
David Smith, IPSC Project Safe-T
Chip Kalen, Terre Haute Fire Department
Charles Capobianco, Terre Haute Fire Dept.
Amanda Capobianco, EMR Consulting

Others on Teleconference:
Keith Holbert, Vigo County Emergency Management

Proceedings:

- *Meeting called to order at 1:15pm by Chair, Anthony Stantz.*
- *Vice-Chair, Alex Whitaker, opens with a discussion about the FCC 9th Notice of Proposed Rulemaking (9th NPRM). Mr. Whitaker provides a general explanation of the major changes that this recently adopted ruling will have on public safety 700 MHz planning. Mr. Whitaker discusses the following points:*
    - *A need for better interoperability during multi-agency events (Katrina) is addressed in the 9th NPRM scope.*
    - *An idea introduced by Cyren Call to use a national broadband licensee has been adopted to an extent in the 9th NPRM.*
    - *12 MHZ of data spectrum will now be administered by a national broadband licensee, consisting of a group of public safety entities. This spectrum will no longer be governed by the Regional Planning Committee (RPC).*
    - *The leading contenders for this group will be entities such as APCO, National Association of Sheriffs, and so on.*
    - *Expectation is that the new 700 MHz infrastructure may be built-out in 10 years, and space on the data spectrum will be sold to public safety entities.*
    - *TV stations still using the 700 spectrum will be required to transition to digital by February 17th, 2009.*
    - *Public safety spectrum will be immediately adjacent to commercial spectrum. (C and D block) The commercial entities will be required to vacate their spectrum in the event of an emergency, as dictated by public safety need at that time.*
    - *The Region 14 plan will need to be revised to reflect changes in the 700 MHz frequency allocations, and the loss of RPC control over the data channels.*

- *Sandra Black continues the discussion about the changes that the 9th NPRM will introduce. The following points are discussed:*
    - *Narrow band will shift to the upper portion of Channel 63.*
    - *Wideband licenses will be discouraged, but allowed with waiver to the FCC.*
    - *FCC is gearing public safety and commercial entities to both operate broadband for the sake of compatibility.*
    - *Power limitations have already been dictated, and need to recognized as the Region 14 plan is continuing to develop.*
    - *A 1 MHz paired guard band has been included as a buffer between broadband and narrow band spectrum.*
    - *Canada is 2 years behind the United States 700 MHz schedule, however, this should not impact Region 14.*
    - *Sprint Nextel, Cingular, Frontline, and Cyren Call are potential players in the spectrum auction.*
    - *Dave Smith and Sandra Black briefly discuss options of including federal assistance with licensing fees in the Region 14 plan to assist the public safety entities.*

- *Mr. Whitaker continues to elaborate:*
    - *The FCC's goal with the 9th NPRM is to eliminate another "Katrina" event by aligning data standards, procedures, and nomenclature so that nationwide interoperability is better achieved.*
    - *At this point, the order has likely generated more questions than answers, and that the committee will need to address these questions as the order and plan both evolve.*
    - *A meeting of 700 MHz region-chairs in Austin, Texas on September 18th will address the future of CAPRAD. CAPRAD has traditionally been administered by the University of Denver, but a new administrator is expected soon.*
    - *CAPRAD is referenced in the Region 14 plan in regards to frequency coordination, and will be important to follow its future as changes occur.*

- *An open discussion begins with Dave Smith regarding flexibility of frequency allocation, and what ways more flexibility can be incorporated.*
    - *Don Kottlowski points out the frequency separation idea from 800 MHz that has never materialized.*
    - *Tony Stantz points out the statewide frequencies used in 800 MHz as a source of flexibility.*

- *Mr. Whitaker moves on to discuss the status of the Region 14 700 MHz plan:*
    - *The Region 14 plan was born from the Region 54 plan.*
    - *Open discussion about maintaining sections 5.4 thru 5.5 regarding TV station interference in the plan. Even though the timing of plan acceptance would likely avoid issues with TV station interference prior to the February 17th deadline, it is discussed that it would be best to include a "sundown clause" that would render these sections void after the FCC deadline for TV stations to transition to digital.*
    - *Open discussion regarding NIMS compliance, and how it should be address by the region 14 plan. Charles Capobianco points out that entities that are not NIMS compliant may have issues with obtaining federal grant money.*
    - *Mr. Whitaker requests that Dave Smith take a look at the interoperability section of the plan with Don West.*
    - *Mr. Whitaker offers to make section assignments of the plan to volunteers, and reminds the group about the importance of the planning process to the FCC.*

- *Mr. Capobianco opens a discussion regarding concerns over frequency crowding, especially during multi-agency events.*
    - *Dave Smith adds that it is not channels that are limiting, but rather the talkgroups.*
    - *Alex Whitaker adds that 700 MHz will likely have up to 33 channels available to contribute to the "site on wheels" solution.*

- *Mr. Whitaker closes with a few additional points:*
    - *Next meeting will be October 24th, 2007 at 1:00pm. Meeting location to be finalized at a later date.*
    - *Mr. Whitaker suggests a Southern location, such as Greensburg or Evansville.*

- *MOTION to adjourn seconded by Don West and Sandra Black, and passed at 3:05pm.*

Minutes submitted by Secretary, Jason Schneidt

Region 14 Public Safety Regional Planning Committee
700MHz Regional Public Safety Planning Meeting
Indiana State Police Communications Division Training Room,
8500 East 21st Street, Indianapolis, Indiana. – October 24th, 2007
Meeting Minutes

Committee Members Present:
Anthony Stantz, Chairman
Alex Whitaker, Vice-Chairman
Jason Schneidt, Secretary

Others Present:
Don West, IDHS
David Kish, Purdue University
Dan Mulford, Greensburg Police Department
Tracy Lightfield, Franklin County 911
Bette Rinehart, Motorola
Fred Craigin, PHI

Others on Teleconference:
Sandra L. Black, EMR Consulting
Don Kottlowski, ISP Communications

Proceedings:

- *Meeting called to order at 1:07pm by Chair, Anthony Stantz.*

- *Alex Whitaker introduces special guest, Bette Reinhart with Motorola. The following points regarding the FCC 9th NPRM are presented:*
  - *Original band-plan sections have been restructured*
  - *A national public safety broadband licensee will be selected to administer new public safety broadband licenses.*
  - *The Public Safety Spectrum Trust is the only public safety broadband licensee with an application in to the FCC at this time.*
  - *Winner of the D block public auction must negotiate a Network Sharing Agreement with the public safety broadband licensee. Parts of this agreement will be:*
    - *Reimbursement to pre-9th NPRM 700 MHz incumbents for band-plan adjustments. Total financial responsibility not to exceed $10 million.*
    - *A plan to handle sharing of bandwidth segments during emergencies.*
  - *Build-out goals: 75% by year 2013, 95% by 2016, and 99.3% by 2019.*
  - *Provisions have been made for early build-out*
  - *Applicants for wideband must:*
    - *Obtain a waiver from public safety broadband licensee*
    - *Obtain approval from local RPC*
    - *Waiver term is not to exceed 5 years, with one three-year renewal allowed.*
  - *Bette Reinhart suggests that we consider how to deal with wideband waiver requests.*

- *Alex Whitaker discusses the Austin, Texas meeting of RPC-chairs. Thirty-seven of fifty-five regions were represented. The following points were presented:*
  - *CAPRAD has experienced changes in management that have allowed the database to fall 2 years behind on updates*
  - *NPSTC aggressively expressed desire to solely run CAPRAD.*
  - *The National Region Planning Council was formed to administer CAPRAD.*

- *Motion to approve meeting minutes seconded by David Kish and Don West, passed at 2:03pm.*

- *Mr. Whitaker directs attention to the Region 14 plan. Individual sections of the plan were assigned to previous meeting participants, and the progress of each section was presented as follows:*
    - *Interoperability – Don West*
        - *Discussion about encryption on interoperability channels. References will be removed from our plan.*
        - *Discussion about the CAPRAD frequency packs, and how they were developed.*
        - *Committee aggress that the plan shall mention that the RPC will work with the Indiana SIEC to satisfy the state interoperability executive committee requirements.*
    - *Bylaws and Membership – Jason Schneidt and Alex Whitaker*
        - *Appendices B, D, and E will be fully updated shortly before the final draft of the plan is submitted.*
        - *Alex Whitaker approves the bylaws section, and comments that he will be reviewing the content of Region 54's RCRC section for use in our plan.*
    - *Evaluation matrix – David Kish*
        - *Two plan varieties have been commonly used to evaluate competing applications*
        - *The NCC plan – better quantifies each applicants individual resources for qualification to receive desired frequencies.*
        - *The "Wisconsin/Missouri" plan is less detailed*
        - *Committee agrees that the NCC plan will make justifying application winners easier, and should be used in our plan.*
        - *A dispute resolution section needs to be developed*
    - *Technical Committee – Sandra Black*
        - *Mr. Whitaker indicates the Sandra Black has reviewed sections 5, 6, 8, 11 and 12 and has posted changes to the Yahoo group website.*

- *Alex Whitaker reminds attendees that they can offer to review sections of the plan.*

- *Mr. Whitaker advises attendees that Region 54's plan, dispute resolution form, and approval letter are available on the Yahoo Group website for review. Mr. Whitaker indicated that he would like to see this plan discussed and approved at the December meeting.*

- *MOTION to adjourn seconded by Dave Kish and Don West, and passed at 3:35pm.*

Minutes submitted by Secretary, Jason Schneidt

Region 14 Public Safety Regional Planning Committee
700MHz Regional Public Safety Planning Meeting
Indiana State Police Communications Division Training Room,
8500 East 21st Street, Indianapolis, Indiana. – December 12th, 2007
Meeting Minutes

Committee Members Present:
Anthony Stantz, Chairman
Alex Whitaker, Vice-Chairman
Jason Schneidt, Secretary

Others Present:
Don West, IDHS
Dan Mulford, Greensburg Police Department
Laura Brackney, EMR Consulting
Don Kottlowski, ISP Communications
Sandra L. Black, EMR Consulting

Proceedings:

- *Meeting called to order at 1:11pm by Chair, Anthony Stantz.*
- *Mr. Alex Whitaker begins the discussion with a recap of recent 700 MHz developments.*
    - *Group discussion regarding the formation of the Public Safety Spectrum Trust (PSST), and the history of the entities involved (NPSTC, Cyren Call).*
    - *Mr. Whitaker leads group discussion regarding Texas Sheriff Association involvement with NPSTC training funds. These funds have been cut from NPSTC, and directed to the NRPC. Also mentioned is the desire for NRPC to sit on the NPSTC board of governors.*
    - *Mr. Whitaker leads group discussion about wideband waivers, and examples of when this practice would be necessary were presented.*
- *Ms. Sandra Black introduces the discussion of including large commercial factory "safety squads" into the interoperability plan.*
    - *Mr. Whitaker suggests that Ms. Black and Mr. Don West draft a basic proposal for review by the RPC that highlights stipulations for who would qualify to use these IO channels.*
- *Mr. Jason Schneidt indicates to the group the he will provide the final, formatted draft of the plan to the RPC.*
    - *Mr. Whitaker indicates that he would like to see the plan completed by June.*
- *Ms. Black indicates that the plan bylaws should indicate that 50% attendance is required to conduct a meeting, and that an officer is present for a quorum.*

- *Mr. West indicates to the group that the interoperability plan contains references to an SIEC, which he believes we do not have.*
    - *Mr. Whitaker indicates that IPSC was established by legislature as Indiana's SIEC. Mr. Tony Stantz indicated that he drafted the plan that was signed by the state governor that establishes this for the FCC.*
    - *Mr. West points out that language in SIEC's documentation suggests that they are not an SIEC.*
    - *Group agrees that specific language regarding IPSC being the SIEC should not be in our plan. It is agreed that our plan needs to remain general in order to avoid constant updates.*
- *Mr. Whitaker requests group review and approval of Region 54's plan before Christmas holiday 2007.*
    - *Mr. Stantz has signed Region 21's inter-regional dispute agreement, and it has been submitted by Mr. Whitaker.*
    - *Mr. Whitaker has not received correspondence from Regions 33 or 13 regarding our issues with their plans.*
- *Future meetings determined to be held February 20th, April 16th, and June 18th, 2008. Locations to be published at a later time.*

- *MOTION to adjourn by Alex Whitaker, seconded by Don West, and passed at 3:11pm.*

Minutes submitted by Secretary, Jason Schneidt

Region 14 Public Safety Regional Planning Committee
700MHz Regional Public Safety Planning Meeting
Indiana University – Purdue University Fort Wayne (IPFW), Walb Student Union, Room G08, Fort Wayne, Indiana. – March 12th, 2008
Meeting Minutes

Committee Members Present:
Alex Whitaker, Vice-Chairman

Others Present:
David Kish, Purdue University
James DeRose, Allen County Sheriff Dept.
Aaron Likes, Allen County Sheriff Dept.
Mike Reichard, Fort Wayne 911 Communications
Tony Burrus, Allen County Safety

Proceedings:

- *Meeting called to order at 1:10 pm by Alex Whitaker*
- *Mr. Whitaker provides information to attendees on committee membership makeup and he provides some history on use of 700 MHz. Basically since there was no date to transition to digital TV, there were essentially no places in the state could use a 700 MHz system; there was too much coverage by TV stations. Mr. Whitaker also indicated we used the Region 54 plan as a template for our region plan.*
- *Mr. Whitaker's goal is to get the plan out in June. A discussion ensued regarding the amount of paperwork required that is required as part of the plan submission.*
- *Mr. Whitaker touched on the latest news about 700 MHz. Items mentioned included the 700 MHz band reconfiguration and the auction of parts of the spectrum. He pointed out that the status of the auction is still unclear. Mr. Whitaker also begins to discuss the CAPRAD resort; after the rebanding by the FCC, there is a need to re-sort the data in CAPRAD.*
- *Mr. Whitaker and Region 14 700 MHz Chairman Tony Stantz received a questionnaire regarding willingness to change channel and combiner spacing. Originally, our plan is based on 25 kHz channel spacing and the number of frequencies assigned to an area based on population. Given the short amount of time given to make their decision, Mr. Whitaker and Mr. Stantz decided to make no changes. In particular, Indiana will have 25 kHz channel spacing, 250 kHz combiner spacing and use the population model to allocate frequencies.*
- *There was some discussion regarding the National Public Safety Telecommunications Council – NPSTC.*

- *James DeRose asked for further clarification on the timeframe for completing the plan. Mr. Whitaker indicated he would like to:*
    - *Send a copy of our plan to adjacent states by the end of May or the beginning of June.*
    - *After receiving approval from those states, the plan will go to the FCC. Mr. Whitaker indicated that he will likely have to do a great deal of follow-up with adjacent states in order to hear back from them quickly. Plan review by the FCC generally takes 6 months.*
- *Mike Reichard inquires about allocation of spectrum on pages 21 and 22. Will our wording prevent a new technology from participating because of the need to give frequencies back? David Kish took this to mean that if the new technology uses a non-standard channel spacing, will it be possible for them to "give it back?"*
- *The group began to review the plan draft and provide feedback on various sections:*
    - *Update the TV list*
    - *Table 2 will go away – need to wait for the CAPRAD resort*
    - *Look at chapter 7, is it required?*
    - *Section 8 is really a template – there is no need for a change.*
    - *Sections 9 and 10 are OK.*
    - *Mr. Whitaker found an error in section 12*
    - *We need to look at the bylaws. Perhaps our region does not need all of the subcommittees?*
    - *There is a type on page 38 (Mr. Kish's e-mail address).*
    - *There was a suggestion to number the appendices differently; page 1 of appendix F should be F-1, etc.*
    - *The group questioned if all of appendix G is necessary. We felt that the conclusion of this appendix (on page 72) can take the place of the entire NIMS section.*
    - *We agreed there is still a need to retain the letters to TV stations in the event we are done with our work before the digital TV transition. We can add a "sunset" provision in section 4 to say that after a particular date, the letters are no longer necessary.*
- *Our next meeting date is May 14, 2008 at Evansville State Police post; meeting start time is 1 pm. There will be a conference call number for participants who cannot travel to the meeting.*
- *Mr. Kish made a motion to adjourn the meeting and Mr. Reichard seconded it. The meeting adjourned at 2:48 pm.*

Minutes submitted by Secretary, Jason Schneidt

Region 14 Public Safety Regional Planning Committee
700MHz Regional Public Safety Planning Meeting
Indiana State Police Post, District 35
Evansville, IN – May 14, 2008
Meeting Minutes

Committee Members Present:
Anthony Stantz, Chairman
Alex Whitaker, Vice-Chairman
Jason Schneidt, Secretary

Others Present:
Sandra L. Black, EMR Consulting
Yolanda Barnhill, EMR Consulting
Bob Irvin, Warrick Co. Sheriff Office
Dallas Scott, Warrick Co. EMA
Sgt. Craig Jordan, Evansville Police Dept.
Donna Burgess, Evansville Police Dept.
Bill Wright, City of Evansville

Others on Teleconference:
David Kish, Purdue University
Don Kottlowski, ISP Communications

Proceedings:

- *Motion to approve meeting minutes by Sandra Black. Seconded by Yolanda Barnhill*
- *Vice-Chair, Alex Whitaker, opens with a discussion about CAPRAD re-sort.*
  - *Re-sort is complete.*
  - *Indiana has state frequencies allotted to counties. Might be neighboring state issues.*
  - *Discussion of state-use frequencies referenced in the plan.*
- *Mr. Whitaker indicates that Ohio has still not responded regarding their plan. Plan has still not been approved by Region 14.*
- *Mr. Whitaker provides background and history of the 700 MHz Region 14 committee to new arrivals to the meeting.*
- *Anthony Stantz explains that 700 Mhz radios will need to be configured to 25 khz spacing.*
- *Discussion about mobile data, and the PSST involvement.*
- *Mr. Whitaker closes with a few additional points:*
  - *Next meeting will be July 16th, 2008 at 1:00pm. Meeting location at ISP Indianapolis.*
- *MOTION to adjourn by Alex Whitaker, seconded by Sandra Black, and passed at 3:14 pm.*

Minutes submitted by Secretary, Jason Schneidt

Region 14 Public Safety Regional Planning Committee
700MHz Regional Public Safety Planning Meeting
Indiana State Police Communications Division Training Room,
8500 East 21st Street, Indianapolis, Indiana. – July 23, 2008
Meeting Minutes

Committee Members Present:
Anthony Stantz, Chairman
Alex Whitaker, Vice-Chairman
Jason Schneidt, Secretary

Others Present:
David Kish, Purdue University
Don Kottlowski, ISP Communications

Proceedings:

- *Meeting called to order at 1:12 pm by Chair, Anthony Stantz.*
- *Alex Whitaker indicates that plan is near completion.*
- *Alex Whitaker tables the review of meeting minutes to next meeting.*
- *Region 54 plan has been approved, signed by Anthony Stantz, and sent certified.*
- *Work on plan review and editing by all attending individuals.*
- *MOTION to acknowledge that the content of the plan is complete by Don Kottlowski and seconded by David Kish. Passed at 1:40 pm.*
- *Alex Whitaker indicates that he will review D block legal developments for updates in our plan.*
- *MOTION to adjourn by Alex Whitaker, seconded by David Kish. Meeting adjourned at 1:48 pm.*

Minutes submitted by Secretary, Jason Schneidt

700 mHz 1st mtg - Nov. 14th, 2001

NAME	ADDRESS	AGENCY	PHONE	EMAIL
Jim Laverdiere	5201 W. Raymond St.	ERS	248-9400	jim@ersaway.com
Randy Jones	5201 W. Raymond	ERS	248-9400	RJones@ERSaway.com
Kathryn Stevens	Richmond Police Department Richmond, IN 47374	RPD	966-7064	kstevens@ci.richmond.in.us
Chuck Klein	50 N. 9th St.	Richmond PD	965-7154	cklein@ci.richmond.in.us
Duncan W. Kottkowski	100 N. Senate Ave., Indianapolis, IN 46204	Indiana State Police	317 233-6052	dkottkowski@isp.state.in.us

2nd mtg 11/06

NAME	ADDRESS	AGENCY	PHONE	EMAIL
Bette Rinehart	28 Thousand Lakes Dr Goshen IN 46526	Medical	717-334-0654	CIBA23@email.msn.com
John Hawn	615 S Shamrock Ct Dyer IN	M/A-Com	614-734-0197	HAWNJ@[illegible]
Bob Speidel	P.O. Box 2000 Lynchburg VA	M/A-Com	434-455-9461	speidelbo@tyco[illegible]
Paul A. Bower	215 E 9th St Auburn IN 46706	DeKalb County EM	260-925-[illegible]	PBower@[illegible]
Donald O. Kottowski	100 N. Senate Ave. Indianapolis, IN 46204	Indiana State Police	317-233-6052	DKottowski@isp.in.gov
Steve Inlbach	16 Country Creek Circle St. Charles, MO 63304	Motorola	310-209-8255	sirlbach@dotnetdirect.com
Gary Stover	57677 CR 5 Elkhart, IN 46517	Emergency Radio Service	574-293-0615	GARY@ERS2WAY.com
Egbert Dijkstra	22286 CR 28 Goshen	Elkhart Co. 9-1-1	574-537-2300	edijkstra@elkhartcounty.com
Todd Anderson	22286 CR 28 Goshen	Elkhart Co 9-1-1	574-537-2302	TAnderson@elkhartcounty.com
Jamie Moore	214 E 4th St Marion IN 46953	Grant Co. Sheriff	765-662-9864 215	jmoore@grantcounty.net
Darryl Brane	3981 S Gardenwood Dr Gas City, IN 46933	Grant Co EMA	765-674-6592	dbrane@grantcounty.net

Region 14 700MHz RPC 1/24/07

NAME	ADDRESS	AGENCY	PHONE	EMAIL
Russell Ricks	149 Cornell Ave. Kokomo 46901	Kokomo Police Dept.	765-456-7100	Ricks@cityofkokomo.org
Joe Wright	4 Municipal Drive	Fishers Police Dept.	317-716-9755	wrightj@fishers.in.us
Doug Springer	PO Box 500 Carlisle	IN Dept of Correction	812 398 5050	springer@doc.in.gov
Donald D. Kottlowski	1000 Sonnet Ave., Lebanon 46052	Indiana State Police	317-233-6052	dkottlowski@isp.in.gov
Doug Keer	1295 8th St. Arcata, CA 95521	Carlson Wireless	707-433-2477	DKeer@carlsonwireless.com
Steve Inlbert	18 Country Creek Circle St. Cloud MN 56301	Dakotacom	320-237-4255	sinlbert@dakotacom.com
Jim Lauerdieu	45155 High School Rd	ERS	317-621-0422	jim@ers2way.com

IN Region 14 3rd Meeting

Weds. April 25, 2007

NAME	ADDRESS	AGENCY	PHONE	EMAIL
John Jones	100 E. Mich. Blvd.	Michigan City EMA	219-873-1499	jjones@michigancity.com
Carl Young	809 St. St.	LaPorte Co. 46390	219-362-7200	youngcarlyat@verizon.net
Jim DeRose	1 Main St. Fort Wayne	Allen County Sheriff	260-449-3100	james.derose@co.allen.in.us
Kevin Likes	1 Main St. Fort Wayne	Allen County Sheriff	260-449-3100	
Doc West	302 W. Washington St. Ind.	IDHS	317-232-5847	dwest@dhs.in.gov
Donald D. Kottlowski	8500 E. 21st, Indy, IN 46219	Indiana State Police	317-899-8518	dkottlowski@isp.in.gov
Dave Kiah	401 S. Grant St.	Purdue Univ.	765-494-0456	dkiah@purdue.edu
Jason Schmidt	401 S. Grant St.	Purdue Univ.	765-494-3408	jaschmidt@purdue.edu
Larry Bircher	1017 W. Main St. Plainfield 46168	Hendricks Co. Communications Center	317-850-0572	larry.bircher@plainfieldpd.org
Fred Corrigan	7700 W. 38th St. Indianapolis	PHI Air Medical	317-417-3748	fcorrigan@phiketice.com

Attendee Sign-In Sheet

INDIANA 700 MHZ REGION PLANNING COMMITTEE
FCC REGION 14 MEETING

Wednesday, June 27, 2007
Purdue University

Jason Schmidt - Purdue University	
Anthony Stante - ISP	astante@isp.in.gov
Charlie Williams Tippecanoe Co Sheriff	
Ed Chapman Delphi Chief of Police	
Lee W. Heard, City of Delphi	
Sandra L. Clark EMR Consulting	slclark@th.twcbc.com
Dale Sigan Monticello F.D.	glogan@firehousemail.com
Kevin Luse - Monticello FD	kluse@firehousemail.com
David Schwartz - MECA, Indianapolis	schwartz@indygov.org
Don Kottlowski (phone)	
Fred Cirigin (phone)	
Don West	dwest@dhsin.gov
Dave Kish	djkish@purdue.edu

Region 14 200MHz RPC 8/22/07

NAME	ADDRESS	AGENCY	PHONE	EMAIL
Dave Kight		Purdue Univ	765.494.0554	dkight@purdue.edu
Dan Mulford	201 S. Broadway St	Greenfield Police Dept	812-463-3131	dmulford@greenfieldpd.com
Don West	402 W. W. Washington	IDHS	317-232-3849	dwest@dhs.in.gov
Donald W. Kottlowski	8500 E. 21st St, Indianapolis	Indiana State Police	317-899-8528	dkottlowski@isp.IN.gov
DAVID SMITH	IGCN, STE N340	PROJECT SAFE-T (IPSC)	317-233-9169	dsmith@ipsc.in.gov
CHIP KALEN	25 SPRUCE ST Terre Haute	TERRE HAUTE FIRE DEPT	812-208-2461	Chip.Kalen@terrehaute.in.gov
CHARLES CAPOBIANCO	25 SPRUCE ST TERRE HAUTE	TERRE HAUTE FIRE DEPT	812-208-8872	CHARLES.CAPOBIANCO@TERREHAUTE.IN.GOV
Sandra Black	46 Allendale Terre Haute	EMR Consultants INC	812-299-4818	SLBlack@th.twcbc.com
Amanda Capobianco	46 Allendale Terre Haute	EMR Consulting Inc	812-299-4816	operations@th.twcbc.com
Anthony Stantz	9300 E 21st Indianapolis	ISP	317.899.8524	AStantz@isp.IN.Gov

SIGN - IN

Region 14 RPC Meeting

10/24/07

Jason Schmidt	Purdue University	765-494-3408	jasschmidt@purdue.edu
David Hirsch	Purdue	765 494 0154	djhirsch@purdue.edu
Don West	IDHS	317-232-3849	dwest@dhs.in.gov
Tracy Light-Field	Franklin Co 911	765-647-2831	tracyFranklinCo911@verizonwireless.net
Dan Mulford	Greensburg PD	812 663 3131	dmulford@[illegible]
Tony Statz	ISP	317-899-8524	[illegible]@isp.in.gov
Alex Whitaker	ISP	317-899-8529	awhitaker@isp.in.gov
Bertie Rinehart	Motorola	717-334-0154	[illegible]@email.mot.com
FRED CRAIGIN	PHI Medical/AMD	317 417 3248	fcraigin@phihelico.com
On Phone: Don Kottbuski	ISP		
Sandra Black			

Attendee Sign-In Sheet

Indiana 700 MHz Region Planning Committee
FCC Region 14 Meeting

Wednesday, December 12th, 2007
Indiana State Police Communications Division Training Room

Please Print

Name and Affiliation	E-Mail Address
Jason Schmidt - Purdue	jaschmidt@purdue.edu
Don West IDHS	dwest@dhs.in.gov
Dennis W. Kottlowski	dkottlowski@isp.IN.gov
Sandra Black	SLBLACK@fh.twcbc.com
Laura Brackney (EMR)	operations@th.twcbc.com
Dan Mulford Greensburg Police Dept	Dmulford@greensburgpd.com
Anthony Stantz	ASTANTZ@ISP.IN.GOV
Alex Whitaker	awhitaker@isp.in.gov

IPFW March 12th, 2008

SIGN IN SHEET

James DeRose	Allen County Sheriff Dept	TX 260-449-3615 James.DeRose@co.allen.in.us
Aaron Likes	Allen County Sheriff Dept	TX 260-449-5000 Aaron.Likes@co.Allen.IN.US
Mike Reichard	Fort Wayne 911 Communications	Mike.Reichard@ci.fw.in.us
Tony Burrus	Allen Co Safety	tony.burrus@co.allen.IN.US
David Kline	Purdue Univ	djkline@purdue.edu

Region 14 RPC 700 Mhz Planning Meeting

Sign-In 5/14/2008

Bob Frain	Warrick Co. Sheriff office	812-897-6180
Dallas Scott	Warrick Co EMA	812-897-6178
Craig Jordan, SGT	Evansville P.D.	812-436-7971
Donna Bourgeois	EVANSVILLE P.D.	812-436-7974
Bill Wright	City of Evansville	812-426-7325
Yolanda Bonhill	EMR Consulting	812-299-4818
Sandra L. Hick	EMR Consulting	812-299-4818
Anthony Stantz	ISP	317-899-8524

RIT PLANNING COMMITTEE
JULY 23, 2008

m	DAVID KIST	PURDUE UNIV
m	DONALD W. KOTTLOWSKI	INDIANA STATE BUDGET COMM.
Sec	Jason Schmidt	Purdue University
VC	Alex Whitaker	Indiana State Police Comm.
	Anthony Stautz	ISP

22 APPENDIX E - TABLE OF INTEROPERABILITY CHANNELS

General Use 25 KHz Channel Frequency Sort

And

TECHNICAL PARAMETERS

Table of 700 MHz Interoperability Channels

16 Channel Sets	Description	Label	Use/Notes
Channel 23 & 24	*General Public Safety Services (secondary trunked)*	*7TAC51*	
Channel 103 & 104	*General Public Safety Services (secondary trunked)*	*7TAC52*	
Channel 183 & 184	*General Public Safety Services (secondary trunked)*	*7TAC53*	
Channel 263 & 264	*General Public Safety Services (secondary trunked)*	*7TAC54*	
Channel 39 & 40	Calling Channel	7CALL50	Mandatory
Channel 119 & 120	General Public Safety Service	7TAC55	Mandatory
Channel 199 & 200	General Public Safety Service	7TAC56	
Channel 279 & 280	Mobile Date	7DATA69	
Channel 63 & 64	Emergency Medical Service	7MED65	
Channel 143 & 144	Fire Service	7FIRE63	
Channel 223 & 224	Law Enforcement Service	7LAW61	
Channel 303 & 304	Mobile Repeater	7MOB59	Mandatory
Channel 79 & 80	Emergency Medical Service	7MED66	
Channel 159 & 160	Fire Service	7FIRE64	
Channel 239 & 240	Law Enforcement Service	7LAW62	
Channel 319 & 320	Other Public Service	7GTAC57	Mandatory
Channel 657 & 658	*General Public Safety Services (secondary trunked)*	*7TAC71*	
Channel 737 & 738	*General Public Safety Services (secondary trunked)*	*7TAC72*	
Channel 817 & 818	*General Public Safety Services (secondary trunked)*	*7TAC73*	
Channel 897 & 898	*General Public Safety Services (secondary trunked)*	*7TAC74*	
Channel 681 & 682	Calling Channel	7CALL70	Mandatory
Channel 761 & 762	General Public Safety Service	7TAC75	Mandatory
Channel 841 & 842	General Public Safety Service	7TAC76	
Channel 921 & 922	Mobile Data	7DATA89	
Channel 641 & 642	Emergency Medical Service	7MED86	
Channel 721 & 722	Fire Service	7FIRE83	
Channel 801 & 802	Law Enforcement Service	7LAW81	

Channel 881 & 882	Mobile Repeater	7MOB79	Mandatory
Channel 697 & 698	Emergency Medical Service	7MED87	
Channel 777 & 778	Fire Service	7FIRE84	
Channel 857 & 858	Law Enforcement Service	7LAW82	
Channel 937 & 938	Other Public Services	7GTAC77	Mandatory
Channels Labeled as mandatory include both the mobile transmit and mobile receive (a total of 16 channels) for subscriber units only			

Project 25 Common Air Interface
Interoperability Channel Technical Parameters

Certain common P25 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 P25 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.

The use of 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 P25 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 defaults may be used for the other Interoperability channels when encryption is not used.

The FCC permits the use of encryption on all Interoperability channels except the two Calling Channels. However, Region 14 has determined that it is in the best interests of Interoperability to NOT allow encryption on any of the channels.

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.

Frequency Sort for Region 14 by County

Average number of General Use 25 KHz channel allotments per county: 8.2

***.

County	Class	Band Width	Channel	Base Frequency	Mobile Frequency	Notation
Adams	General Use	Voice 25KHz	93-96	769.5875	799.5875	
	General Use	Voice 25KHz	241-244	770.5125	800.5125	
	General Use	Voice 25KHz	297-300	770.8625	800.8625	
	General Use	Voice 25KHz	549-552	772.4375	802.4375	
	General Use	Voice 25KHz	677-680	773.2375	803.2375	
	General Use	Voice 25KHz	905-908	774.6625	804.6625	
*	State License	Voice 25KHz	813-816	774.0875	804.0875	
*	State License	Voice 25KHz	853-856	774.3375	804.3375	
*	State License	Voice 25KHz	929-932	774.8125	804.8125	
Allen	General Use	Voice 25KHz	17-20	769.1125	799.1125	
	General Use	Voice 25KHz	81-84	769.5125	799.5125	
	General Use	Voice 25KHz	121-124	769.7625	799.7625	
	General Use	Voice 25KHz	161-164	770.0125	800.0125	
	General Use	Voice 25KHz	209-212	770.3125	800.3125	
	General Use	Voice 25KHz	249-252	770.5625	800.5625	

	General Use	Voice 25KHz	357-360	771.2375	801.2375
	General Use	Voice 25KHz	397-400	771.4875	801.4875
	General Use	Voice 25KHz	437-440	771.7375	801.7375
	General Use	Voice 25KHz	477-480	771.9875	801.9875
	General Use	Voice 25KHz	573-576	772.5875	802.5875
	General Use	Voice 25KHz	613-616	772.8375	802.8375
	General Use	Voice 25KHz	661-664	773.1375	803.1375
	General Use	Voice 25KHz	709-712	773.4375	803.4375
	General Use	Voice 25KHz	749-752	773.6875	803.6875
	General Use	Voice 25KHz	789-792	773.9375	803.9375
	General Use	Voice 25KHz	829-832	774.1875	804.1875
	General Use	Voice 25KHz	869-872	774.4375	804.4375
	General Use	Voice 25KHz	917-920	774.7375	804.7375
	State License	Voice 25KHz	149-152	769.9375	799.9375
	State License	Voice 25KHz	265-268	770.6625	800.6625
	State License	Voice 25KHz	305-308	770.9125	800.9125
	State License	Voice 25KHz	645-648	773.0375	803.0375
	State License	Voice 25KHz	685-688	773.2875	803.2875
	State License	Voice 25KHz	725-728	773.5375	803.5375
	State License	Voice 25KHz	765-768	773.7875	803.7875
	State License	Voice 25KHz	845-848	774.2875	804.2875
	State License	Voice 25KHz	889-892	774.5625	804.5625
Bartholomew	General Use	Voice 25KHz	81-84	769.5125	799.5125
	General Use	Voice 25KHz	125-128	769.7875	799.7875
	General Use	Voice 25KHz	209-212	770.3125	800.3125

	General Use	Voice 25KHz	297-300	770.8625	800.8625
	General Use	Voice 25KHz	381-384	771.3875	801.3875
	General Use	Voice 25KHz	425-428	771.6625	801.6625
	General Use	Voice 25KHz	537-540	772.3625	802.3625
	General Use	Voice 25KHz	581-584	772.6375	802.6375
	General Use	Voice 25KHz	621-624	772.8875	802.8875
	General Use	Voice 25KHz	677-680	773.2375	803.2375
	General Use	Voice 25KHz	753-756	773.7125	803.7125
	General Use	Voice 25KHz	901-904	774.6375	804.6375
	State License	Voice 25KHz	113-116	769.7125	799.7125
	State License	Voice 25KHz	313-316	770.9625	800.9625
	State License	Voice 25KHz	653-656	773.0875	803.0875
	State License	Voice 25KHz	893-896	774.5875	804.5875
	State License	Voice 25KHz	933-936	774.8375	804.8375
Benton	General Use	Voice 25KHz	137-140	769.8625	799.8625
	General Use	Voice 25KHz	421-424	771.6375	801.6375
	General Use	Voice 25KHz	461-464	771.8875	801.8875
	General Use	Voice 25KHz	561-564	772.5125	802.5125
	General Use	Voice 25KHz	909-912	774.6875	804.6875
	State License	Voice 25KHz	933-936	774.8375	804.8375
Blackford	General Use	Voice 25KHz	245-248	770.5375	800.5375
	General Use	Voice 25KHz	373-376	771.3375	801.3375
	General Use	Voice 25KHz	433-436	771.7125	801.7125
	General Use	Voice 25KHz	489-492	772.0625	802.0625
	General Use	Voice 25KHz	617-620	772.8625	802.8625

	General Use	Voice 25KHz	665-668	773.1625	803.1625
	General Use	Voice 25KHz	705-708	773.4125	803.4125
	State License	Voice 25KHz	65-68	769.4125	799.4125
	State License	Voice 25KHz	145-148	769.9125	799.9125
	State License	Voice 25KHz	225-228	770.4125	800.4125
	State License	Voice 25KHz	269-272	770.6875	800.6875
	State License	Voice 25KHz	925-928	774.7875	804.7875
Boone	General Use	Voice 25KHz	357-360	771.2375	801.2375
	General Use	Voice 25KHz	397-400	771.4875	801.4875
	General Use	Voice 25KHz	453-456	771.8375	801.8375
	General Use	Voice 25KHz	513-516	772.2125	802.2125
	General Use	Voice 25KHz	597-600	772.7375	802.7375
	General Use	Voice 25KHz	797-800	773.9875	803.9875
	State License	Voice 25KHz	109-112	769.6875	799.6875
	State License	Voice 25KHz	193-196	770.2125	800.2125
Brown	General Use	Voice 25KHz	321-324	771.0125	801.0125
	General Use	Voice 25KHz	365-368	771.2875	801.2875
	General Use	Voice 25KHz	433-436	771.7125	801.7125
	General Use	Voice 25KHz	529-532	772.3125	802.3125
	General Use	Voice 25KHz	873-876	774.4625	804.4625
	State License	Voice 25KHz	189-192	770.1875	800.1875
	State License	Voice 25KHz	769-772	773.8125	803.8125
Carroll	General Use	Voice 25KHz	281-284	770.7625	800.7625
	General Use	Voice 25KHz	345-348	771.1625	801.1625
	General Use	Voice 25KHz	457-460	771.8625	801.8625

	General Use	Voice 25KHz	605-608	772.7875	802.7875
	General Use	Voice 25KHz	793-796	773.9625	803.9625
	General Use	Voice 25KHz	877-880	774.4875	804.4875
	State License	Voice 25KHz	105-108	769.6625	799.6625
	State License	Voice 25KHz	849-852	774.3125	804.3125
Cass	General Use	Voice 25KHz	93-96	769.5875	799.5875
	General Use	Voice 25KHz	205-208	770.2875	800.2875
	General Use	Voice 25KHz	249-252	770.5625	800.5625
	General Use	Voice 25KHz	389-392	771.4375	801.4375
	General Use	Voice 25KHz	429-432	771.6875	801.6875
	General Use	Voice 25KHz	501-504	772.1375	802.1375
	General Use	Voice 25KHz	541-544	772.3875	802.3875
	General Use	Voice 25KHz	709-712	773.4375	803.4375
	General Use	Voice 25KHz	781-784	773.8875	803.8875
	General Use	Voice 25KHz	945-948	774.9125	804.9125
	State License	Voice 25KHz	305-308	770.9125	800.9125
	State License	Voice 25KHz	645-648	773.0375	803.0375
	State License	Voice 25KHz	685-688	773.2875	803.2875
	State License	Voice 25KHz	805-808	774.0375	804.0375
	State License	Voice 25KHz	885-888	774.5375	804.5375
Clark	General Use	Voice 25KHz	97-100	769.6125	799.6125
	General Use	Voice 25KHz	177-180	770.1125	800.1125
	General Use	Voice 25KHz	217-220	770.3625	800.3625
	General Use	Voice 25KHz	281-284	770.7625	800.7625
	General Use	Voice 25KHz	357-360	771.2375	801.2375

	General Use	Voice 25KHz	405-408	771.5375	801.5375
	General Use	Voice 25KHz	473-476	771.9625	801.9625
	General Use	Voice 25KHz	557-560	772.4875	802.4875
	General Use	Voice 25KHz	637-640	772.9875	802.9875
	General Use	Voice 25KHz	745-748	773.6625	803.6625
	General Use	Voice 25KHz	821-824	774.1375	804.1375
	General Use	Voice 25KHz	905-908	774.6625	804.6625
	State License	Voice 25KHz	273-276	770.7125	800.7125
	State License	Voice 25KHz	693-696	773.3375	803.3375
	State License	Voice 25KHz	733-736	773.5875	803.5875
Clay	General Use	Voice 25KHz	161-164	770.0125	800.0125
	General Use	Voice 25KHz	209-212	770.3125	800.3125
	General Use	Voice 25KHz	425-428	771.6625	801.6625
	General Use	Voice 25KHz	493-496	772.0875	802.0875
	General Use	Voice 25KHz	545-548	772.4125	802.4125
	General Use	Voice 25KHz	677-680	773.2375	803.2375
	General Use	Voice 25KHz	717-720	773.4875	803.4875
	General Use	Voice 25KHz	837-840	774.2375	804.2375
	State License	Voice 25KHz	185-188	770.1625	800.1625
	State License	Voice 25KHz	849-852	774.3125	804.3125
	State License	Voice 25KHz	893-896	774.5875	804.5875
Clinton	General Use	Voice 25KHz	209-212	770.3125	800.3125
	General Use	Voice 25KHz	373-376	771.3375	801.3375
	General Use	Voice 25KHz	433-436	771.7125	801.7125
	General Use	Voice 25KHz	505-508	772.1625	802.1625

	General Use	Voice 25KHz	573-576	772.5875	802.5875
	General Use	Voice 25KHz	749-752	773.6875	803.6875
	State License	Voice 25KHz	229-232	770.4375	800.4375
	State License	Voice 25KHz	809-812	774.0625	804.0625
Crawford	General Use	Voice 25KHz	285-288	770.7875	800.7875
	General Use	Voice 25KHz	417-420	771.6125	801.6125
	General Use	Voice 25KHz	633-636	772.9625	802.9625
	General Use	Voice 25KHz	829-832	774.1875	804.1875
	General Use	Voice 25KHz	869-872	774.4375	804.4375
	State License	Voice 25KHz	189-192	770.1875	800.1875
	State License	Voice 25KHz	893-896	774.5875	804.5875
Daviess	General Use	Voice 25KHz	85-88	769.5375	799.5375
	General Use	Voice 25KHz	137-140	769.8625	799.8625
	General Use	Voice 25KHz	205-208	770.2875	800.2875
	General Use	Voice 25KHz	245-248	770.5375	800.5375
	General Use	Voice 25KHz	361-364	771.2625	801.2625
	General Use	Voice 25KHz	445-448	771.7875	801.7875
	General Use	Voice 25KHz	525-528	772.2875	802.2875
	General Use	Voice 25KHz	625-628	772.9125	802.9125
	General Use	Voice 25KHz	905-908	774.6625	804.6625
	State License	Voice 25KHz	25-28	769.1625	799.1625
	State License	Voice 25KHz	313-316	770.9625	800.9625
	State License	Voice 25KHz	653-656	773.0875	803.0875
De Kalb	General Use	Voice 25KHz	325-328	771.0375	801.0375
	General Use	Voice 25KHz	369-372	771.3125	801.3125

	General Use	Voice 25KHz	425-428	771.6625	801.6625
	General Use	Voice 25KHz	525-528	772.2875	802.2875
	General Use	Voice 25KHz	605-608	772.7875	802.7875
	General Use	Voice 25KHz	781-784	773.8875	803.8875
	General Use	Voice 25KHz	877-880	774.4875	804.4875
	State License	Voice 25KHz	105-108	769.6625	799.6625
	State License	Voice 25KHz	189-192	770.1875	800.1875
Dearborn	General Use	Voice 25KHz	53-56	769.3375	799.3375
	General Use	Voice 25KHz	353-356	771.2125	801.2125
	General Use	Voice 25KHz	433-436	771.7125	801.7125
	General Use	Voice 25KHz	541-544	772.3875	802.3875
	General Use	Voice 25KHz	613-616	772.8375	802.8375
	General Use	Voice 25KHz	913-916	774.7125	804.7125
	State License	Voice 25KHz	145-148	769.9125	799.9125
	State License	Voice 25KHz	269-272	770.6875	800.6875
Decatur	General Use	Voice 25KHz	137-140	769.8625	799.8625
	General Use	Voice 25KHz	329-332	771.0625	801.0625
	General Use	Voice 25KHz	373-376	771.3375	801.3375
	General Use	Voice 25KHz	417-420	771.6125	801.6125
	General Use	Voice 25KHz	705-708	773.4125	803.4125
	General Use	Voice 25KHz	825-828	774.1625	804.1625
	State License	Voice 25KHz	153-156	769.9625	799.9625
	State License	Voice 25KHz	689-692	773.3125	803.3125
Delaware	General Use	Voice 25KHz	17-20	769.1125	799.1125
	General Use	Voice 25KHz	89-92	769.5625	799.5625

	General Use	Voice 25KHz	137-140	769.8625	799.8625
	General Use	Voice 25KHz	281-284	770.7625	800.7625
	General Use	Voice 25KHz	345-348	771.1625	801.1625
	General Use	Voice 25KHz	385-388	771.4125	801.4125
	General Use	Voice 25KHz	425-428	771.6625	801.6625
	General Use	Voice 25KHz	473-476	771.9625	801.9625
	General Use	Voice 25KHz	529-532	772.3125	802.3125
	General Use	Voice 25KHz	605-608	772.7875	802.7875
	General Use	Voice 25KHz	713-716	773.4625	803.4625
	General Use	Voice 25KHz	793-796	773.9625	803.9625
	General Use	Voice 25KHz	861-864	774.3875	804.3875
	State License	Voice 25KHz	29-32	769.1875	799.1875
	State License	Voice 25KHz	153-156	769.9625	799.9625
	State License	Voice 25KHz	849-852	774.3125	804.3125
	State License	Voice 25KHz	889-892	774.5625	804.5625
Dubois	General Use	Voice 25KHz	53-56	769.3375	799.3375
	General Use	Voice 25KHz	121-124	769.7625	799.7625
	General Use	Voice 25KHz	325-328	771.0375	801.0375
	General Use	Voice 25KHz	381-384	771.3875	801.3875
	General Use	Voice 25KHz	493-496	772.0875	802.0875
	General Use	Voice 25KHz	569-572	772.5625	802.5625
	General Use	Voice 25KHz	613-616	772.8375	802.8375
	General Use	Voice 25KHz	677-680	773.2375	803.2375
	General Use	Voice 25KHz	837-840	774.2375	804.2375
	State License	Voice 25KHz	145-148	769.9125	799.9125

	State License	Voice 25KHz	769-772	773.8125	803.8125
	State License	Voice 25KHz	849-852	774.3125	804.3125
Fayette	General Use	Voice 25KHz	85-88	769.5375	799.5375
	General Use	Voice 25KHz	513-516	772.2125	802.2125
	General Use	Voice 25KHz	573-576	772.5875	802.5875
	General Use	Voice 25KHz	625-628	772.9125	802.9125
	General Use	Voice 25KHz	665-668	773.1625	803.1625
	General Use	Voice 25KHz	781-784	773.8875	803.8875
	State License	Voice 25KHz	649-652	773.0625	803.0625
Floyd	General Use	Voice 25KHz	17-20	769.1125	799.1125
	General Use	Voice 25KHz	129-132	769.8125	799.8125
	General Use	Voice 25KHz	293-296	770.8375	800.8375
	General Use	Voice 25KHz	333-336	771.0875	801.0875
	General Use	Voice 25KHz	425-428	771.6625	801.6625
	General Use	Voice 25KHz	497-500	772.1125	802.1125
	General Use	Voice 25KHz	537-540	772.3625	802.3625
	General Use	Voice 25KHz	577-580	772.6125	802.6125
	General Use	Voice 25KHz	617-620	772.8625	802.8625
	State License	Voice 25KHz	29-32	769.1875	799.1875
	State License	Voice 25KHz	69-72	769.4375	799.4375
	State License	Voice 25KHz	229-232	770.4375	800.4375
Fountain	General Use	Voice 25KHz	49-52	769.3125	799.3125
	General Use	Voice 25KHz	129-132	769.8125	799.8125
	General Use	Voice 25KHz	449-452	771.8125	801.8125
	General Use	Voice 25KHz	509-512	772.1875	802.1875

	General Use	Voice 25KHz	581-584	772.6375	802.6375
	General Use	Voice 25KHz	637-640	772.9875	802.9875
	State License	Voice 25KHz	805-808	774.0375	804.0375
	State License	Voice 25KHz	845-848	774.2875	804.2875
Franklin	General Use	Voice 25KHz	241-244	770.5125	800.5125
	General Use	Voice 25KHz	409-412	771.5625	801.5625
	General Use	Voice 25KHz	461-464	771.8875	801.8875
	General Use	Voice 25KHz	561-564	772.5125	802.5125
	General Use	Voice 25KHz	633-636	772.9625	802.9625
	State License	Voice 25KHz	105-108	769.6625	799.6625
Fulton	General Use	Voice 25KHz	45-48	769.2875	799.2875
	General Use	Voice 25KHz	165-168	770.0375	800.0375
	General Use	Voice 25KHz	289-292	770.8125	800.8125
	General Use	Voice 25KHz	417-420	771.6125	801.6125
	General Use	Voice 25KHz	469-472	771.9375	801.9375
	State License	Voice 25KHz	153-156	769.9625	799.9625
	State License	Voice 25KHz	225-228	770.4125	800.4125
Gibson	General Use	Voice 25KHz	49-52	769.3125	799.3125
	General Use	Voice 25KHz	89-92	769.5625	799.5625
	General Use	Voice 25KHz	201-204	770.2625	800.2625
	General Use	Voice 25KHz	241-244	770.5125	800.5125
	General Use	Voice 25KHz	289-292	770.8125	800.8125
	General Use	Voice 25KHz	389-392	771.4375	801.4375
	General Use	Voice 25KHz	441-444	771.7625	801.7625
	General Use	Voice 25KHz	485-488	772.0375	802.0375

	General Use	Voice 25KHz	581-584	772.6375	802.6375
	General Use	Voice 25KHz	745-748	773.6625	803.6625
	State License	Voice 25KHz	29-32	769.1875	799.1875
	State License	Voice 25KHz	185-188	770.1625	800.1625
	State License	Voice 25KHz	265-268	770.6625	800.6625
Grant	General Use	Voice 25KHz	97-100	769.6125	799.6125
	General Use	Voice 25KHz	293-296	770.8375	800.8375
	General Use	Voice 25KHz	445-448	771.7875	801.7875
	General Use	Voice 25KHz	517-520	772.2375	802.2375
	General Use	Voice 25KHz	569-572	772.5625	802.5625
	General Use	Voice 25KHz	633-636	772.9625	802.9625
	General Use	Voice 25KHz	741-744	773.6375	803.6375
	General Use	Voice 25KHz	785-788	773.9125	803.9125
	General Use	Voice 25KHz	901-904	774.6375	804.6375
	General Use	Voice 25KHz	941-944	774.8875	804.8875
	State License	Voice 25KHz	189-192	770.1875	800.1875
	State License	Voice 25KHz	649-652	773.0625	803.0625
	State License	Voice 25KHz	689-692	773.3125	803.3125
Greene	General Use	Voice 25KHz	217-220	770.3625	800.3625
	General Use	Voice 25KHz	329-332	771.0625	801.0625
	General Use	Voice 25KHz	373-376	771.3375	801.3375
	General Use	Voice 25KHz	417-420	771.6125	801.6125
	General Use	Voice 25KHz	473-476	771.9625	801.9625
	General Use	Voice 25KHz	513-516	772.2125	802.2125
	General Use	Voice 25KHz	589-592	772.6875	802.6875

	General Use	Voice 25KHz	821-824	774.1375	804.1375
	State License	Voice 25KHz	273-276	770.7125	800.7125
	State License	Voice 25KHz	725-728	773.5375	803.5375
	State License	Voice 25KHz	805-808	774.0375	804.0375
Hamilton	General Use	Voice 25KHz	41-44	769.2625	799.2625
	General Use	Voice 25KHz	125-128	769.7875	799.7875
	General Use	Voice 25KHz	177-180	770.1125	800.1125
	General Use	Voice 25KHz	253-256	770.5875	800.5875
	General Use	Voice 25KHz	297-300	770.8625	800.8625
	General Use	Voice 25KHz	381-384	771.3875	801.3875
	General Use	Voice 25KHz	421-424	771.6375	801.6375
	General Use	Voice 25KHz	469-472	771.9375	801.9375
	General Use	Voice 25KHz	521-524	772.2625	802.2625
	General Use	Voice 25KHz	561-564	772.5125	802.5125
	General Use	Voice 25KHz	637-640	772.9875	802.9875
	General Use	Voice 25KHz	717-720	773.4875	803.4875
	General Use	Voice 25KHz	789-792	773.9375	803.9375
	General Use	Voice 25KHz	837-840	774.2375	804.2375
	General Use	Voice 25KHz	917-920	774.7375	804.7375
	State License	Voice 25KHz	313-316	770.9625	800.9625
	State License	Voice 25KHz	653-656	773.0875	803.0875
	State License	Voice 25KHz	733-736	773.5875	803.5875
	State License	Voice 25KHz	893-896	774.5875	804.5875
Hancock	General Use	Voice 25KHz	161-164	770.0125	800.0125
	General Use	Voice 25KHz	349-352	771.1875	801.1875

	General Use	Voice 25KHz	449-452	771.8125	801.8125
	General Use	Voice 25KHz	509-512	772.1875	802.1875
	General Use	Voice 25KHz	577-580	772.6125	802.6125
	General Use	Voice 25KHz	709-712	773.4375	803.4375
	General Use	Voice 25KHz	877-880	774.4875	804.4875
	State License	Voice 25KHz	33-36	769.2125	799.2125
	State License	Voice 25KHz	305-308	770.9125	800.9125
	State License	Voice 25KHz	813-816	774.0875	804.0875
Harrison	General Use	Voice 25KHz	165-168	770.0375	800.0375
	General Use	Voice 25KHz	249-252	770.5625	800.5625
	General Use	Voice 25KHz	345-348	771.1625	801.1625
	General Use	Voice 25KHz	393-396	771.4625	801.4625
	General Use	Voice 25KHz	433-436	771.7125	801.7125
	General Use	Voice 25KHz	485-488	772.0375	802.0375
	General Use	Voice 25KHz	917-920	774.7375	804.7375
	State License	Voice 25KHz	309-312	770.9375	800.9375
	State License	Voice 25KHz	653-656	773.0875	803.0875
Hendricks	General Use	Voice 25KHz	85-88	769.5375	799.5375
	General Use	Voice 25KHz	213-216	770.3375	800.3375
	General Use	Voice 25KHz	341-344	771.1375	801.1375
	General Use	Voice 25KHz	405-408	771.5375	801.5375
	General Use	Voice 25KHz	445-448	771.7875	801.7875
	General Use	Voice 25KHz	501-504	772.1375	802.1375
	General Use	Voice 25KHz	549-552	772.4375	802.4375
	General Use	Voice 25KHz	617-620	772.8625	802.8625

	General Use	Voice 25KHz	665-668	773.1625	803.1625
	General Use	Voice 25KHz	705-708	773.4125	803.4125
	General Use	Voice 25KHz	781-784	773.8875	803.8875
	State License	Voice 25KHz	25-28	769.1625	799.1625
	State License	Voice 25KHz	153-156	769.9625	799.9625
	State License	Voice 25KHz	233-236	770.4625	800.4625
Henry	General Use	Voice 25KHz	129-132	769.8125	799.8125
	General Use	Voice 25KHz	201-204	770.2625	800.2625
	General Use	Voice 25KHz	289-292	770.8125	800.8125
	General Use	Voice 25KHz	405-408	771.5375	801.5375
	General Use	Voice 25KHz	481-484	772.0125	802.0125
	General Use	Voice 25KHz	589-592	772.6875	802.6875
	General Use	Voice 25KHz	869-872	774.4375	804.4375
	General Use	Voice 25KHz	909-912	774.6875	804.6875
	State License	Voice 25KHz	233-236	770.4625	800.4625
	State License	Voice 25KHz	729-732	773.5625	803.5625
Howard	General Use	Voice 25KHz	49-52	769.3125	799.3125
	General Use	Voice 25KHz	121-124	769.7625	799.7625
	General Use	Voice 25KHz	241-244	770.5125	800.5125
	General Use	Voice 25KHz	321-324	771.0125	801.0125
	General Use	Voice 25KHz	361-364	771.2625	801.2625
	General Use	Voice 25KHz	401-404	771.5125	801.5125
	General Use	Voice 25KHz	465-468	771.9125	801.9125
	General Use	Voice 25KHz	525-528	772.2875	802.2875
	General Use	Voice 25KHz	581-584	772.6375	802.6375

	General Use	Voice 25KHz	677-680	773.2375	803.2375
	General Use	Voice 25KHz	913-916	774.7125	804.7125
	State License	Voice 25KHz	69-72	769.4375	799.4375
	State License	Voice 25KHz	149-152	769.9375	799.9375
	State License	Voice 25KHz	265-268	770.6625	800.6625
Huntington	General Use	Voice 25KHz	365-368	771.2875	801.2875
	General Use	Voice 25KHz	409-412	771.5625	801.5625
	General Use	Voice 25KHz	457-460	771.8625	801.8625
	General Use	Voice 25KHz	505-508	772.1625	802.1625
	General Use	Voice 25KHz	589-592	772.6875	802.6875
	General Use	Voice 25KHz	909-912	774.6875	804.6875
	State License	Voice 25KHz	25-28	769.1625	799.1625
	State License	Voice 25KHz	109-112	769.6875	799.6875
	State License	Voice 25KHz	809-812	774.0625	804.0625
Jackson	General Use	Voice 25KHz	41-44	769.2625	799.2625
	General Use	Voice 25KHz	161-164	770.0125	800.0125
	General Use	Voice 25KHz	337-340	771.1125	801.1125
	General Use	Voice 25KHz	489-492	772.0625	802.0625
	General Use	Voice 25KHz	545-548	772.4125	802.4125
	General Use	Voice 25KHz	609-612	772.8125	802.8125
	General Use	Voice 25KHz	741-744	773.6375	803.6375
	General Use	Voice 25KHz	797-800	773.9875	803.9875
	General Use	Voice 25KHz	861-864	774.3875	804.3875
	State License	Voice 25KHz	269-272	770.6875	800.6875
	State License	Voice 25KHz	729-732	773.5625	803.5625

	State License	Voice 25KHz	809-812	774.0625	804.0625
Jay	General Use	Voice 25KHz	45-48	769.2875	799.2875
	General Use	Voice 25KHz	417-420	771.6125	801.6125
	General Use	Voice 25KHz	537-540	772.3625	802.3625
	General Use	Voice 25KHz	593-596	772.7125	802.7125
	General Use	Voice 25KHz	781-784	773.8875	803.8875
	State License	Voice 25KHz	105-108	769.6625	799.6625
	State License	Voice 25KHz	805-808	774.0375	804.0375
Jefferson	General Use	Voice 25KHz	253-256	770.5875	800.5875
	General Use	Voice 25KHz	377-380	771.3625	801.3625
	General Use	Voice 25KHz	481-484	772.0125	802.0125
	General Use	Voice 25KHz	709-712	773.4375	803.4375
	General Use	Voice 25KHz	829-832	774.1875	804.1875
	General Use	Voice 25KHz	869-872	774.4375	804.4375
	State License	Voice 25KHz	65-68	769.4125	799.4125
	State License	Voice 25KHz	649-652	773.0625	803.0625
Jennings	General Use	Voice 25KHz	93-96	769.5875	799.5875
	General Use	Voice 25KHz	245-248	770.5375	800.5375
	General Use	Voice 25KHz	285-288	770.7875	800.7875
	General Use	Voice 25KHz	445-448	771.7875	801.7875
	General Use	Voice 25KHz	509-512	772.1875	802.1875
	General Use	Voice 25KHz	597-600	772.7375	802.7375
	State License	Voice 25KHz	225-228	770.4125	800.4125
	State License	Voice 25KHz	849-852	774.3125	804.3125
Johnson	General Use	Voice 25KHz	45-48	769.2875	799.2875

	General Use	Voice 25KHz	173-176	770.0875	800.0875
	General Use	Voice 25KHz	257-260	770.6125	800.6125
	General Use	Voice 25KHz	333-336	771.0875	801.0875
	General Use	Voice 25KHz	413-416	771.5875	801.5875
	General Use	Voice 25KHz	457-460	771.8625	801.8625
	General Use	Voice 25KHz	517-520	772.2375	802.2375
	General Use	Voice 25KHz	557-560	772.4875	802.4875
	General Use	Voice 25KHz	605-608	772.7875	802.7875
	General Use	Voice 25KHz	793-796	773.9625	803.9625
	General Use	Voice 25KHz	833-836	774.2125	804.2125
	General Use	Voice 25KHz	913-916	774.7125	804.7125
	State License	Voice 25KHz	73-76	769.4625	799.4625
	State License	Voice 25KHz	265-268	770.6625	800.6625
	State License	Voice 25KHz	693-696	773.3375	803.3375
Knox	General Use	Voice 25KHz	337-340	771.1125	801.1125
	General Use	Voice 25KHz	457-460	771.8625	801.8625
	General Use	Voice 25KHz	573-576	772.5875	802.5875
	General Use	Voice 25KHz	617-620	772.8625	802.8625
	General Use	Voice 25KHz	665-668	773.1625	803.1625
	General Use	Voice 25KHz	705-708	773.4125	803.4125
	General Use	Voice 25KHz	757-760	773.7375	803.7375
	General Use	Voice 25KHz	833-836	774.2125	804.2125
	General Use	Voice 25KHz	873-876	774.4625	804.4625
	General Use	Voice 25KHz	945-948	774.9125	804.9125
	State License	Voice 25KHz	113-116	769.7125	799.7125

	State License	Voice 25KHz	233-236	770.4625	800.4625
	State License	Voice 25KHz	765-768	773.7875	803.7875
	State License	Voice 25KHz	853-856	774.3375	804.3375
Kosciusko	General Use	Voice 25KHz	57-60	769.3625	799.3625
	General Use	Voice 25KHz	137-140	769.8625	799.8625
	General Use	Voice 25KHz	213-216	770.3375	800.3375
	General Use	Voice 25KHz	353-356	771.2125	801.2125
	General Use	Voice 25KHz	393-396	771.4625	801.4625
	General Use	Voice 25KHz	497-500	772.1125	802.1125
	General Use	Voice 25KHz	577-580	772.6125	802.6125
	General Use	Voice 25KHz	621-624	772.8875	802.8875
	General Use	Voice 25KHz	873-876	774.4625	804.4625
	State License	Voice 25KHz	65-68	769.4125	799.4125
	State License	Voice 25KHz	145-148	769.9125	799.9125
	State License	Voice 25KHz	185-188	770.1625	800.1625
Lagrange	General Use	Voice 25KHz	201-204	770.2625	800.2625
	General Use	Voice 25KHz	413-416	771.5875	801.5875
	General Use	Voice 25KHz	517-520	772.2375	802.2375
	General Use	Voice 25KHz	585-588	772.6625	802.6625
	General Use	Voice 25KHz	713-716	773.4625	803.4625
	General Use	Voice 25KHz	865-868	774.4125	804.4125
	State License	Voice 25KHz	73-76	769.4625	799.4625
	State License	Voice 25KHz	649-652	773.0625	803.0625
	State License	Voice 25KHz	729-732	773.5625	803.5625
Lawrence	General Use	Voice 25KHz	49-52	769.3125	799.3125

	General Use	Voice 25KHz	89-92	769.5625	799.5625
	General Use	Voice 25KHz	169-172	770.0625	800.0625
	General Use	Voice 25KHz	289-292	770.8125	800.8125
	General Use	Voice 25KHz	409-412	771.5625	801.5625
	General Use	Voice 25KHz	449-452	771.8125	801.8125
	General Use	Voice 25KHz	521-524	772.2625	802.2625
	General Use	Voice 25KHz	565-568	772.5375	802.5375
	General Use	Voice 25KHz	629-632	772.9375	802.9375
	General Use	Voice 25KHz	673-676	773.2125	803.2125
	State License	Voice 25KHz	109-112	769.6875	799.6875
	State License	Voice 25KHz	305-308	770.9125	800.9125
	State License	Voice 25KHz	845-848	774.2875	804.2875
	State License	Voice 25KHz	925-928	774.7875	804.7875
Madison	General Use	Voice 25KHz	81-84	769.5125	799.5125
	General Use	Voice 25KHz	169-172	770.0625	800.0625
	General Use	Voice 25KHz	217-220	770.3625	800.3625
	General Use	Voice 25KHz	337-340	771.1125	801.1125
	General Use	Voice 25KHz	393-396	771.4625	801.4625
	General Use	Voice 25KHz	437-440	771.7375	801.7375
	General Use	Voice 25KHz	497-500	772.1125	802.1125
	General Use	Voice 25KHz	545-548	772.4125	802.4125
	General Use	Voice 25KHz	621-624	772.8875	802.8875
	General Use	Voice 25KHz	661-664	773.1375	803.1375
	General Use	Voice 25KHz	701-704	773.3875	803.3875
	General Use	Voice 25KHz	753-756	773.7125	803.7125

	General Use	Voice 25KHz	829-832	774.1875	804.1875
	State License	Voice 25KHz	113-116	769.7125	799.7125
	State License	Voice 25KHz	773-776	773.8375	803.8375
	State License	Voice 25KHz	933-936	774.8375	804.8375
Marion	General Use	Voice 25KHz	13-16	769.0875	799.0875
	General Use	Voice 25KHz	53-56	769.3375	799.3375
	General Use	Voice 25KHz	93-96	769.5875	799.5875
	General Use	Voice 25KHz	133-136	769.8375	799.8375
	General Use	Voice 25KHz	205-208	770.2875	800.2875
	General Use	Voice 25KHz	245-248	770.5375	800.5375
	General Use	Voice 25KHz	285-288	770.7875	800.7875
	General Use	Voice 25KHz	325-328	771.0375	801.0375
	General Use	Voice 25KHz	369-372	771.3125	801.3125
	General Use	Voice 25KHz	429-432	771.6875	801.6875
	General Use	Voice 25KHz	477-480	771.9875	801.9875
	General Use	Voice 25KHz	533-536	772.3375	802.3375
	General Use	Voice 25KHz	585-588	772.6625	802.6625
	General Use	Voice 25KHz	629-632	772.9375	802.9375
	General Use	Voice 25KHz	673-676	773.2125	803.2125
	General Use	Voice 25KHz	745-748	773.6625	803.6625
	General Use	Voice 25KHz	821-824	774.1375	804.1375
	General Use	Voice 25KHz	865-868	774.4125	804.4125
	General Use	Voice 25KHz	905-908	774.6625	804.6625
	General Use	Voice 25KHz	945-948	774.9125	804.9125
	State License	Voice 25KHz	65-68	769.4125	799.4125

	State License	Voice 25KHz	145-148	769.9125	799.9125
	State License	Voice 25KHz	225-228	770.4125	800.4125
	State License	Voice 25KHz	273-276	770.7125	800.7125
	State License	Voice 25KHz	645-648	773.0375	803.0375
	State License	Voice 25KHz	685-688	773.2875	803.2875
	State License	Voice 25KHz	725-728	773.5375	803.5375
	State License	Voice 25KHz	805-808	774.0375	804.0375
	State License	Voice 25KHz	845-848	774.2875	804.2875
	State License	Voice 25KHz	885-888	774.5375	804.5375
	State License	Voice 25KHz	925-928	774.7875	804.7875
Martin	General Use	Voice 25KHz	97-100	769.6125	799.6125
	General Use	Voice 25KHz	281-284	770.7625	800.7625
	General Use	Voice 25KHz	461-464	771.8875	801.8875
	General Use	Voice 25KHz	637-640	772.9875	802.9875
	General Use	Voice 25KHz	709-712	773.4375	803.4375
	General Use	Voice 25KHz	865-868	774.4125	804.4125
	State License	Voice 25KHz	153-156	769.9625	799.9625
Miami	General Use	Voice 25KHz	13-16	769.0875	799.0875
	General Use	Voice 25KHz	129-132	769.8125	799.8125
	General Use	Voice 25KHz	369-372	771.3125	801.3125
	General Use	Voice 25KHz	509-512	772.1875	802.1875
	General Use	Voice 25KHz	609-612	772.8125	802.8125
	General Use	Voice 25KHz	825-828	774.1625	804.1625
	General Use	Voice 25KHz	865-868	774.4125	804.4125
	State License	Voice 25KHz	729-732	773.5625	803.5625

	State License	Voice 25KHz	813-816	774.0875	804.0875
	State License	Voice 25KHz	929-932	774.8125	804.8125
Monroe	General Use	Voice 25KHz	17-20	769.1125	799.1125
	General Use	Voice 25KHz	57-60	769.3625	799.3625
	General Use	Voice 25KHz	129-132	769.8125	799.8125
	General Use	Voice 25KHz	201-204	770.2625	800.2625
	General Use	Voice 25KHz	249-252	770.5625	800.5625
	General Use	Voice 25KHz	345-348	771.1625	801.1625
	General Use	Voice 25KHz	393-396	771.4625	801.4625
	General Use	Voice 25KHz	441-444	771.7625	801.7625
	General Use	Voice 25KHz	497-500	772.1125	802.1125
	General Use	Voice 25KHz	553-556	772.4625	802.4625
	General Use	Voice 25KHz	601-604	772.7625	802.7625
	General Use	Voice 25KHz	661-664	773.1375	803.1375
	General Use	Voice 25KHz	701-704	773.3875	803.3875
	General Use	Voice 25KHz	749-752	773.6875	803.6875
	General Use	Voice 25KHz	829-832	774.1875	804.1875
	General Use	Voice 25KHz	909-912	774.6875	804.6875
	State License	Voice 25KHz	29-32	769.1875	799.1875
	State License	Voice 25KHz	69-72	769.4375	799.4375
	State License	Voice 25KHz	229-232	770.4375	800.4375
	State License	Voice 25KHz	649-652	773.0625	803.0625
	State License	Voice 25KHz	889-892	774.5625	804.5625
Montgomery	General Use	Voice 25KHz	97-100	769.6125	799.6125
	General Use	Voice 25KHz	289-292	770.8125	800.8125

	General Use	Voice 25KHz	417-420	771.6125	801.6125
	General Use	Voice 25KHz	473-476	771.9625	801.9625
	General Use	Voice 25KHz	537-540	772.3625	802.3625
	General Use	Voice 25KHz	609-612	772.8125	802.8125
	General Use	Voice 25KHz	861-864	774.3875	804.3875
	General Use	Voice 25KHz	901-904	774.6375	804.6375
	State License	Voice 25KHz	689-692	773.3125	803.3125
	State License	Voice 25KHz	729-732	773.5625	803.5625
	State License	Voice 25KHz	929-932	774.8125	804.8125
Morgan	General Use	Voice 25KHz	121-124	769.7625	799.7625
	General Use	Voice 25KHz	165-168	770.0375	800.0375
	General Use	Voice 25KHz	293-296	770.8375	800.8375
	General Use	Voice 25KHz	353-356	771.2125	801.2125
	General Use	Voice 25KHz	541-544	772.3875	802.3875
	General Use	Voice 25KHz	593-596	772.7125	802.7125
	General Use	Voice 25KHz	713-716	773.4625	803.4625
	General Use	Voice 25KHz	757-760	773.7375	803.7375
	State License	Voice 25KHz	105-108	769.6625	799.6625
	State License	Voice 25KHz	309-312	770.9375	800.9375
	State License	Voice 25KHz	853-856	774.3375	804.3375
Noble	General Use	Voice 25KHz	97-100	769.6125	799.6125
	General Use	Voice 25KHz	293-296	770.8375	800.8375
	General Use	Voice 25KHz	337-340	771.1125	801.1125
	General Use	Voice 25KHz	465-468	771.9125	801.9125
	General Use	Voice 25KHz	593-596	772.7125	802.7125

	General Use	Voice 25KHz	637-640	772.9875	802.9875
	General Use	Voice 25KHz	901-904	774.6375	804.6375
	State License	Voice 25KHz	29-32	769.1875	799.1875
	State License	Voice 25KHz	113-116	769.7125	799.7125
Ohio	General Use	Voice 25KHz	289-292	770.8125	800.8125
	General Use	Voice 25KHz	333-336	771.0875	801.0875
	General Use	Voice 25KHz	521-524	772.2625	802.2625
	General Use	Voice 25KHz	565-568	772.5375	802.5375
	General Use	Voice 25KHz	785-788	773.9125	803.9125
	State License	Voice 25KHz	845-848	774.2875	804.2875
Orange	General Use	Voice 25KHz	13-16	769.0875	799.0875
	General Use	Voice 25KHz	213-216	770.3375	800.3375
	General Use	Voice 25KHz	353-356	771.2125	801.2125
	General Use	Voice 25KHz	401-404	771.5125	801.5125
	General Use	Voice 25KHz	585-588	772.6625	802.6625
	General Use	Voice 25KHz	781-784	773.8875	803.8875
	State License	Voice 25KHz	33-36	769.2125	799.2125
	State License	Voice 25KHz	689-692	773.3125	803.3125
Owen	General Use	Voice 25KHz	177-180	770.1125	800.1125
	General Use	Voice 25KHz	505-508	772.1625	802.1625
	General Use	Voice 25KHz	569-572	772.5625	802.5625
	General Use	Voice 25KHz	613-616	772.8375	802.8375
	General Use	Voice 25KHz	669-672	773.1875	803.1875
	General Use	Voice 25KHz	785-788	773.9125	803.9125
	General Use	Voice 25KHz	917-920	774.7375	804.7375

	State License	Voice 25KHz	149-152	769.9375	799.9375
	State License	Voice 25KHz	733-736	773.5875	803.5875
Parke	General Use	Voice 25KHz	349-352	771.1875	801.1875
	General Use	Voice 25KHz	389-392	771.4375	801.4375
	General Use	Voice 25KHz	465-468	771.9125	801.9125
	General Use	Voice 25KHz	565-568	772.5375	802.5375
	General Use	Voice 25KHz	825-828	774.1625	804.1625
	General Use	Voice 25KHz	913-916	774.7125	804.7125
	State License	Voice 25KHz	113-116	769.7125	799.7125
	State License	Voice 25KHz	265-268	770.6625	800.6625
	State License	Voice 25KHz	313-316	770.9625	800.9625
Perry	General Use	Voice 25KHz	41-44	769.2625	799.2625
	General Use	Voice 25KHz	81-84	769.5125	799.5125
	General Use	Voice 25KHz	341-344	771.1375	801.1375
	General Use	Voice 25KHz	465-468	771.9125	801.9125
	General Use	Voice 25KHz	545-548	772.4125	802.4125
	General Use	Voice 25KHz	701-704	773.3875	803.3875
	General Use	Voice 25KHz	913-916	774.7125	804.7125
	State License	Voice 25KHz	649-652	773.0625	803.0625
	State License	Voice 25KHz	729-732	773.5625	803.5625
	State License	Voice 25KHz	929-932	774.8125	804.8125
Pike	General Use	Voice 25KHz	173-176	770.0875	800.0875
	General Use	Voice 25KHz	433-436	771.7125	801.7125
	General Use	Voice 25KHz	501-504	772.1375	802.1375
	General Use	Voice 25KHz	541-544	772.3875	802.3875

	General Use	Voice 25KHz	593-596	772.7125	802.7125
	General Use	Voice 25KHz	785-788	773.9125	803.9125
	State License	Voice 25KHz	225-228	770.4125	800.4125
	State License	Voice 25KHz	885-888	774.5375	804.5375
Posey	General Use	Voice 25KHz	125-128	769.7875	799.7875
	General Use	Voice 25KHz	333-336	771.0875	801.0875
	General Use	Voice 25KHz	373-376	771.3375	801.3375
	General Use	Voice 25KHz	449-452	771.8125	801.8125
	General Use	Voice 25KHz	529-532	772.3125	802.3125
	General Use	Voice 25KHz	605-608	772.7875	802.7875
	General Use	Voice 25KHz	821-824	774.1375	804.1375
	General Use	Voice 25KHz	877-880	774.4875	804.4875
	State License	Voice 25KHz	73-76	769.4625	799.4625
	State License	Voice 25KHz	193-196	770.2125	800.2125
	State License	Voice 25KHz	809-812	774.0625	804.0625
Putnam	General Use	Voice 25KHz	137-140	769.8625	799.8625
	General Use	Voice 25KHz	241-244	770.5125	800.5125
	General Use	Voice 25KHz	377-380	771.3625	801.3625
	General Use	Voice 25KHz	437-440	771.7375	801.7375
	General Use	Voice 25KHz	485-488	772.0375	802.0375
	General Use	Voice 25KHz	525-528	772.2875	802.2875
	General Use	Voice 25KHz	577-580	772.6125	802.6125
	General Use	Voice 25KHz	633-636	772.9625	802.9625
	General Use	Voice 25KHz	877-880	774.4875	804.4875
	State License	Voice 25KHz	765-768	773.7875	803.7875

	State License	Voice 25KHz	813-816	774.0875	804.0875
Randolph	General Use	Voice 25KHz	121-124	769.7625	799.7625
	General Use	Voice 25KHz	357-360	771.2375	801.2375
	General Use	Voice 25KHz	397-400	771.4875	801.4875
	General Use	Voice 25KHz	441-444	771.7625	801.7625
	General Use	Voice 25KHz	629-632	772.9375	802.9375
	General Use	Voice 25KHz	749-752	773.6875	803.6875
	State License	Voice 25KHz	193-196	770.2125	800.2125
	State License	Voice 25KHz	693-696	773.3375	803.3375
Ripley	General Use	Voice 25KHz	213-216	770.3375	800.3375
	General Use	Voice 25KHz	341-344	771.1375	801.1375
	General Use	Voice 25KHz	397-400	771.4875	801.4875
	General Use	Voice 25KHz	469-472	771.9375	801.9375
	General Use	Voice 25KHz	673-676	773.2125	803.2125
	General Use	Voice 25KHz	757-760	773.7375	803.7375
	State License	Voice 25KHz	725-728	773.5375	803.5375
	State License	Voice 25KHz	805-808	774.0375	804.0375
	State License	Voice 25KHz	925-928	774.7875	804.7875
Rush	General Use	Voice 25KHz	97-100	769.6125	799.6125
	General Use	Voice 25KHz	389-392	771.4375	801.4375
	General Use	Voice 25KHz	493-496	772.0875	802.0875
	General Use	Voice 25KHz	617-620	772.8625	802.8625
	General Use	Voice 25KHz	941-944	774.8875	804.8875
	State License	Voice 25KHz	25-28	769.1625	799.1625
	State License	Voice 25KHz	929-932	774.8125	804.8125

Scott	General Use	Voice 25KHz	121-124	769.7625	799.7625
	General Use	Voice 25KHz	385-388	771.4125	801.4125
	General Use	Voice 25KHz	453-456	771.8375	801.8375
	General Use	Voice 25KHz	625-628	772.9125	802.9125
	General Use	Voice 25KHz	837-840	774.2375	804.2375
	State License	Voice 25KHz	233-236	770.4625	800.4625
	State License	Voice 25KHz	929-932	774.8125	804.8125
Shelby	General Use	Voice 25KHz	361-364	771.2625	801.2625
	General Use	Voice 25KHz	401-404	771.5125	801.5125
	General Use	Voice 25KHz	465-468	771.9125	801.9125
	General Use	Voice 25KHz	525-528	772.2875	802.2875
	General Use	Voice 25KHz	569-572	772.5625	802.5625
	General Use	Voice 25KHz	785-788	773.9125	803.9125
	State License	Voice 25KHz	185-188	770.1625	800.1625
	State License	Voice 25KHz	765-768	773.7875	803.7875
Spencer	General Use	Voice 25KHz	161-164	770.0125	800.0125
	General Use	Voice 25KHz	293-296	770.8375	800.8375
	General Use	Voice 25KHz	413-416	771.5875	801.5875
	General Use	Voice 25KHz	477-480	771.9875	801.9875
	General Use	Voice 25KHz	533-536	772.3375	802.3375
	General Use	Voice 25KHz	797-800	773.9875	803.9875
	General Use	Voice 25KHz	901-904	774.6375	804.6375
	State License	Voice 25KHz	693-696	773.3375	803.3375
	State License	Voice 25KHz	805-808	774.0375	804.0375
Steuben	General Use	Voice 25KHz	253-256	770.5875	800.5875

	General Use	Voice 25KHz	381-384	771.3875	801.3875
	General Use	Voice 25KHz	489-492	772.0625	802.0625
	General Use	Voice 25KHz	617-620	772.8625	802.8625
	General Use	Voice 25KHz	665-668	773.1625	803.1625
	General Use	Voice 25KHz	745-748	773.6625	803.6625
	General Use	Voice 25KHz	793-796	773.9625	803.9625
	State License	Voice 25KHz	849-852	774.3125	804.3125
	State License	Voice 25KHz	925-928	774.7875	804.7875
Sullivan	General Use	Voice 25KHz	41-44	769.2625	799.2625
	General Use	Voice 25KHz	125-128	769.7875	799.7875
	General Use	Voice 25KHz	285-288	770.7875	800.7875
	General Use	Voice 25KHz	385-388	771.4125	801.4125
	General Use	Voice 25KHz	481-484	772.0125	802.0125
	General Use	Voice 25KHz	609-612	772.8125	802.8125
	General Use	Voice 25KHz	861-864	774.3875	804.3875
	State License	Voice 25KHz	645-648	773.0375	803.0375
	State License	Voice 25KHz	693-696	773.3375	803.3375
Switzerland	General Use	Voice 25KHz	173-176	770.0875	800.0875
	General Use	Voice 25KHz	421-424	771.6375	801.6375
	General Use	Voice 25KHz	529-532	772.3125	802.3125
	General Use	Voice 25KHz	573-576	772.5875	802.5875
	General Use	Voice 25KHz	661-664	773.1375	803.1375
	General Use	Voice 25KHz	749-752	773.6875	803.6875
	State License	Voice 25KHz	109-112	769.6875	799.6875
	State License	Voice 25KHz	229-232	770.4375	800.4375

Tippecanoe	General Use	Voice 25KHz	17-20	769.1125	799.1125
	General Use	Voice 25KHz	89-92	769.5625	799.5625
	General Use	Voice 25KHz	161-164	770.0125	800.0125
	General Use	Voice 25KHz	201-204	770.2625	800.2625
	General Use	Voice 25KHz	257-260	770.6125	800.6125
	General Use	Voice 25KHz	329-332	771.0625	801.0625
	General Use	Voice 25KHz	385-388	771.4125	801.4125
	General Use	Voice 25KHz	441-444	771.7625	801.7625
	General Use	Voice 25KHz	493-496	772.0875	802.0875
	General Use	Voice 25KHz	553-556	772.4625	802.4625
	General Use	Voice 25KHz	625-628	772.9125	802.9125
	General Use	Voice 25KHz	701-704	773.3875	803.3875
	General Use	Voice 25KHz	741-744	773.6375	803.6375
	General Use	Voice 25KHz	785-788	773.9125	803.9125
	General Use	Voice 25KHz	829-832	774.1875	804.1875
	General Use	Voice 25KHz	869-872	774.4375	804.4375
	General Use	Voice 25KHz	941-944	774.8875	804.8875
	State License	Voice 25KHz	33-36	769.2125	799.2125
	State License	Voice 25KHz	73-76	769.4625	799.4625
	State License	Voice 25KHz	185-188	770.1625	800.1625
	State License	Voice 25KHz	269-272	770.6875	800.6875
	State License	Voice 25KHz	309-312	770.9375	800.9375
	State License	Voice 25KHz	649-652	773.0625	803.0625
	State License	Voice 25KHz	889-892	774.5625	804.5625
Tipton	General Use	Voice 25KHz	57-60	769.3625	799.3625

	General Use	Voice 25KHz	413-416	771.5875	801.5875
	General Use	Voice 25KHz	613-616	772.8375	802.8375
	General Use	Voice 25KHz	669-672	773.1875	803.1875
	General Use	Voice 25KHz	873-876	774.4625	804.4625
	State License	Voice 25KHz	853-856	774.3375	804.3375
Union	General Use	Voice 25KHz	321-324	771.0125	801.0125
	General Use	Voice 25KHz	377-380	771.3625	801.3625
	General Use	Voice 25KHz	421-424	771.6375	801.6375
	General Use	Voice 25KHz	549-552	772.4375	802.4375
	General Use	Voice 25KHz	677-680	773.2375	803.2375
	State License	Voice 25KHz	229-232	770.4375	800.4375
Vanderburgh	General Use	Voice 25KHz	17-20	769.1125	799.1125
	General Use	Voice 25KHz	97-100	769.6125	799.6125
	General Use	Voice 25KHz	165-168	770.0375	800.0375
	General Use	Voice 25KHz	209-212	770.3125	800.3125
	General Use	Voice 25KHz	249-252	770.5625	800.5625
	General Use	Voice 25KHz	297-300	770.8625	800.8625
	General Use	Voice 25KHz	365-368	771.2875	801.2875
	General Use	Voice 25KHz	417-420	771.6125	801.6125
	General Use	Voice 25KHz	461-464	771.8875	801.8875
	General Use	Voice 25KHz	505-508	772.1625	802.1625
	General Use	Voice 25KHz	549-552	772.4375	802.4375
	General Use	Voice 25KHz	589-592	772.6875	802.6875
	General Use	Voice 25KHz	633-636	772.9625	802.9625
	General Use	Voice 25KHz	673-676	773.2125	803.2125

	General Use	Voice 25KHz	713-716	773.4625	803.4625
	General Use	Voice 25KHz	753-756	773.7125	803.7125
	General Use	Voice 25KHz	793-796	773.9625	803.9625
	General Use	Voice 25KHz	869-872	774.4375	804.4375
	General Use	Voice 25KHz	909-912	774.6875	804.6875
	State License	Voice 25KHz	109-112	769.6875	799.6875
	State License	Voice 25KHz	149-152	769.9375	799.9375
	State License	Voice 25KHz	229-232	770.4375	800.4375
	State License	Voice 25KHz	309-312	770.9375	800.9375
	State License	Voice 25KHz	689-692	773.3125	803.3125
	State License	Voice 25KHz	733-736	773.5875	803.5875
	State License	Voice 25KHz	773-776	773.8375	803.8375
	State License	Voice 25KHz	893-896	774.5875	804.5875
Vermillion	General Use	Voice 25KHz	281-284	770.7625	800.7625
	General Use	Voice 25KHz	333-336	771.0875	801.0875
	General Use	Voice 25KHz	429-432	771.6875	801.6875
	General Use	Voice 25KHz	489-492	772.0625	802.0625
	General Use	Voice 25KHz	533-536	772.3375	802.3375
	General Use	Voice 25KHz	573-576	772.5875	802.5875
	State License	Voice 25KHz	29-32	769.1875	799.1875
	State License	Voice 25KHz	853-856	774.3375	804.3375
Vigo	General Use	Voice 25KHz	13-16	769.0875	799.0875
	General Use	Voice 25KHz	53-56	769.3375	799.3375
	General Use	Voice 25KHz	93-96	769.5875	799.5875
	General Use	Voice 25KHz	133-136	769.8375	799.8375

	General Use	Voice 25KHz	173-176	770.0875	800.0875
	General Use	Voice 25KHz	253-256	770.5875	800.5875
	General Use	Voice 25KHz	297-300	770.8625	800.8625
	General Use	Voice 25KHz	357-360	771.2375	801.2375
	General Use	Voice 25KHz	397-400	771.4875	801.4875
	General Use	Voice 25KHz	453-456	771.8375	801.8375
	General Use	Voice 25KHz	557-560	772.4875	802.4875
	General Use	Voice 25KHz	621-624	772.8875	802.8875
	General Use	Voice 25KHz	745-748	773.6625	803.6625
	General Use	Voice 25KHz	789-792	773.9375	803.9375
	General Use	Voice 25KHz	869-872	774.4375	804.4375
	General Use	Voice 25KHz	941-944	774.8875	804.8875
	State License	Voice 25KHz	65-68	769.4125	799.4125
	State License	Voice 25KHz	193-196	770.2125	800.2125
	State License	Voice 25KHz	685-688	773.2875	803.2875
	State License	Voice 25KHz	773-776	773.8375	803.8375
	State License	Voice 25KHz	885-888	774.5375	804.5375
	State License	Voice 25KHz	933-936	774.8375	804.8375
Wabash	General Use	Voice 25KHz	85-88	769.5375	799.5375
	General Use	Voice 25KHz	333-336	771.0875	801.0875
	General Use	Voice 25KHz	377-380	771.3625	801.3625
	General Use	Voice 25KHz	553-556	772.4625	802.4625
	General Use	Voice 25KHz	601-604	772.7625	802.7625
	General Use	Voice 25KHz	757-760	773.7375	803.7375
	General Use	Voice 25KHz	833-836	774.2125	804.2125

	State License	Voice 25KHz	33-36	769.2125	799.2125
	State License	Voice 25KHz	309-312	770.9375	800.9375
	State License	Voice 25KHz	769-772	773.8125	803.8125
Warren	General Use	Voice 25KHz	121-124	769.7625	799.7625
	General Use	Voice 25KHz	293-296	770.8375	800.8375
	General Use	Voice 25KHz	353-356	771.2125	801.2125
	General Use	Voice 25KHz	469-472	771.9375	801.9375
	General Use	Voice 25KHz	617-620	772.8625	802.8625
	State License	Voice 25KHz	149-152	769.9375	799.9375
Warrick	General Use	Voice 25KHz	129-132	769.8125	799.8125
	General Use	Voice 25KHz	257-260	770.6125	800.6125
	General Use	Voice 25KHz	357-360	771.2375	801.2375
	General Use	Voice 25KHz	405-408	771.5375	801.5375
	General Use	Voice 25KHz	469-472	771.9375	801.9375
	General Use	Voice 25KHz	517-520	772.2375	802.2375
	General Use	Voice 25KHz	561-564	772.5125	802.5125
	General Use	Voice 25KHz	601-604	772.7625	802.7625
	General Use	Voice 25KHz	861-864	774.3875	804.3875
	General Use	Voice 25KHz	917-920	774.7375	804.7375
	State License	Voice 25KHz	69-72	769.4375	799.4375
	State License	Voice 25KHz	645-648	773.0375	803.0375
	State License	Voice 25KHz	813-816	774.0875	804.0875
	State License	Voice 25KHz	933-936	774.8375	804.8375
Washington	General Use	Voice 25KHz	369-372	771.3125	801.3125
	General Use	Voice 25KHz	505-508	772.1625	802.1625

	General Use	Voice 25KHz	593-596	772.7125	802.7125
	General Use	Voice 25KHz	717-720	773.4875	803.4875
	General Use	Voice 25KHz	789-792	773.9375	803.9375
	General Use	Voice 25KHz	877-880	774.4875	804.4875
	General Use	Voice 25KHz	941-944	774.8875	804.8875
	State License	Voice 25KHz	149-152	769.9375	799.9375
	State License	Voice 25KHz	773-776	773.8375	803.8375
Wayne	General Use	Voice 25KHz	49-52	769.3125	799.3125
	General Use	Voice 25KHz	209-212	770.3125	800.3125
	General Use	Voice 25KHz	249-252	770.5625	800.5625
	General Use	Voice 25KHz	333-336	771.0875	801.0875
	General Use	Voice 25KHz	457-460	771.8625	801.8625
	General Use	Voice 25KHz	501-504	772.1375	802.1375
	General Use	Voice 25KHz	557-560	772.4875	802.4875
	General Use	Voice 25KHz	597-600	772.7375	802.7375
	General Use	Voice 25KHz	833-836	774.2125	804.2125
	State License	Voice 25KHz	69-72	769.4375	799.4375
	State License	Voice 25KHz	309-312	770.9375	800.9375
	State License	Voice 25KHz	769-772	773.8125	803.8125
Wells	General Use	Voice 25KHz	53-56	769.3375	799.3375
	General Use	Voice 25KHz	133-136	769.8375	799.8375
	General Use	Voice 25KHz	329-332	771.0625	801.0625
	General Use	Voice 25KHz	625-628	772.9125	802.9125
	General Use	Voice 25KHz	821-824	774.1375	804.1375
	State License	Voice 25KHz	73-76	769.4625	799.4625

White	General Use	Voice 25KHz	177-180	770.1125	800.1125
	General Use	Voice 25KHz	337-340	771.1125	801.1125
	General Use	Voice 25KHz	521-524	772.2625	802.2625
	General Use	Voice 25KHz	633-636	772.9625	802.9625
	General Use	Voice 25KHz	717-720	773.4875	803.4875
	General Use	Voice 25KHz	821-824	774.1375	804.1375
	General Use	Voice 25KHz	917-920	774.7375	804.7375
	State License	Voice 25KHz	725-728	773.5375	803.5375
	State License	Voice 25KHz	765-768	773.7875	803.7875
	State License	Voice 25KHz	925-928	774.7875	804.7875
Whitley	General Use	Voice 25KHz	169-172	770.0625	800.0625
	General Use	Voice 25KHz	257-260	770.6125	800.6125
	General Use	Voice 25KHz	449-452	771.8125	801.8125
	General Use	Voice 25KHz	545-548	772.4125	802.4125
	General Use	Voice 25KHz	669-672	773.1875	803.1875
	State License	Voice 25KHz	229-232	770.4375	800.4375
	State License	Voice 25KHz	653-656	773.0875	803.0875

23 APPENDIX F - INCIDENT COMMAND SYSTEM

NATIONAL INCIDENT MANAGEMENT SYSTEM
See: **www.fema.gov/pdf/nims/nims_training_development.pdf**

In Homeland Security Presidential Directive (HSPD-5), Management of Domestic Incidents, the President directed the Secretary of Homeland Security to develop and administer a National Incident Management System (NIMS). On March 1, 2004, Secretary Ridge issued the NIMS to provide a comprehensive national approach to incident management, applicable to all jurisdictional levels across functional disciplines. The NIMS provides a consistent nationwide approach for federal, state, tribal and local governments to work effectively and efficiently together to prepare for, prevent, respond to and recover from domestic incidents, regardless of cause, size, or complexity. The NIMS establishes standard incident management processes, protocols and procedures so that all responders can work together more effectively.

The ICS/NIMS/UCS methods are mandatory and sound concepts that can provide significant benefit when used by public safety agencies. It allows users to effectively manage and combat incidents by providing a strong organizational plan. Because of its ability to adjust to the size of the incident, the methods have proven to be effective for any public safety agency.

- Region 14 applicants will be required to demonstrate that their agency adopted NIMS by ordinance pursuant to HSPD-5: http://www.whitehouse.gov/news/releases/2003/02/20030228-9.html

- Region 14 applicants will be required to demonstrate that command staff has received training in NIMS.

- It is recommended that Region 14 applicants perform a self-assessment using NIMCAST.

It is the Interoperability Subcommittee's recommendation that the Incident Command System, National Incident Management System and Unified Command System is not only required, but also very beneficial to public safety agencies and its use should be supported by the NCC.

INDIANA 700 MHZ REGION PLANNING COMMITTEE

FCC REGION 14

H. Anthony Stantz, Chairman
Alex R. Whitaker, Vice Chairman
c/o Indiana State Police, Communications Division
8500 East 21st Street, Indianapolis, Indiana 46219
TX: 317-899-8524 ; FAX: 317-899-8282
E-mail: astantz@isp.in.gov
E-mail: awhitaker@isp.in.gov

TO: (signer of application and title)
(agency name)

FROM: (name), Chairman

DATE: (mm/dd/yyyy)

SUBJECT: Memorandum of Understanding for Operating the 700 MHz Interoperability Channels

This memorandum of understanding (hereafter referred to as MOU) shall be attached to the application when submitting it. By virtue of signing and submitting the application and this MOU, (agency name) (hereafter referred to as APPLICANT) affirms its willingness to comply with the proper operation of the Interoperability (interoperability) channels as dictated by the Region Planning Committee (here after referred to as RPC) as approved by the Federal Communications Commission (hereafter referred to as FCC) and by the conditions of this MOU.

The APPLICANT shall abide by the conditions of this MOU which are as follows:

- To operate by all applicable State, County, and City laws/ordinances.
- To utilize "plain language" for all transmissions.
- To monitor the Calling Channel(s) and coordinate the use of the Tactical Channels.
- To identify inappropriate use and mitigate the same from occurring in the future.
- To limit secondary Trunked operation to the interoperability channels specifically approved on the application and limited to channels listed below.
- To relinquish secondary Trunked operation of approved interoperability channels to requests for primary conventional access with same or higher priority.
- To mitigate contention for channels by exercising the Priority Levels identified in this MOU.

The preceding conditions are the primary, though not complete, requirements for operating in the interoperability channels. Refer to the Region Plan for the complete requirements list.

Priority Levels:

1. Disaster or extreme emergency operation for mutual aid and interagency communications;
2. Emergency or urgent operation involving imminent danger to life or property;
3. Special event control, generally of a preplanned nature (including Task Force operations)
4. Single agency secondary communications.

To resolve contention within the same priority, the channel should go to the organization with the wider span of control/authority. This shall be determined by the State Interoperability Executive Committee or RPC for the operation or by the levels of authority/government identified in the contention.

For clarification purposes and an aid to operate as authorized, any fixed base or mobile relay stations identified on the license for temporary locations (FCC station class FBT or FB2T, respectively) shall remain within the licensed area of operation. Similarly, vehicular/mobile repeater stations (FCC station class MO3) shall remain within the licensed area of operation. Federal agencies are permitted access to interoperability channels only as authorized by 47 CFR 2.102 (c) & 2.103 and Part 7.12 of the NTIA Manual.

Any violation of this MOU, the Region Plan, or FCC Rule shall be addressed immediately. The first level of resolution shall be between the parties involved, next the State Interoperability Executive Committee or RPC, and finally the FCC.

Secondary Trunked Channels

7TAC51 - Channel 23 & 24	7TMED65 - Channel 63 & 64
7TAC52 - Channel 103 & 104	7FIRE63 - Channel 143 & 144
7TAC53 - Channel 183 & 184	7LAW61 - Channel 223 & 224
7TAC54 - Channel 263 & 264	7MOB59 - Channel 303 & 304

_____ (typed or printed name of authorized signer)

_____ (authorized signer identified above and consistent with application)
_____ (date)
_____ (agency name)
_____ (agency address)
_____ (agency address)
_____ (agency address)
_____ (signer's phone)
_____ (signer's email address, if available)

SHARING AGREEMENT TEMPLATE

(Agency letterhead of Licensee)

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

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

DATE: (mm/dd/yyyy)

SUBJECT: Sharing Agreement

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

Call Sign	Frequency(ies)	Max. Power	Channel Description
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

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

This written agreement applies to operations in cooperation and coordination with activities of the licensee per Region (#) Plan, FCC Rules 47 CFR Parts 2.102(c), 2.103 and 90.421 and Part 7.12 of the NTIA Manual. Furthermore, grantor reserves the right to effectively eliminate the possibility of unauthorized operation, which ultimately could result in terminating this written agreement.

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

25 APPENDIX H - DISPUTE RESOLUTION PROCESS
Inter-Regional Coordination Procedures
and
Procedures for Resolution of Disputes
That May Arise Under FCC Approved Plans

Coordination Procedures

1. INTRODUCTION

1.1. This is a mutually agreed upon Inter-Regional Coordination Procedures Agreement (Agreement) by and between the Region 14 (Indiana), Region 13 (Illinois), Region 17 (Kentucky), Region 21 (Michigan), Region 33 (Ohio), and Region 54 (Southern Lake Michigan) 700 MHz Regional Planning Committees

1.2.

2. INTER-REGIONAL COORDINATION AGREEMENT

2.1. The following is the specific procedure for inter-regional coordination which has been agreed upon by Regions 13, 14, 17, 21, 33, and 54, and which will be used by the Regions to coordinate with adjacent Regional Planning Committees.

2.2. 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.

2.3. Applications by eligible entities are accepted.

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

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

2.6. 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. [3] This information will be sent to the adjacent Regional chairperson(s) using the CAPRAD database.

2.7. 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.

---

[3] 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.

3. 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 chairpersons email (CAPRAD database). Findings may include, but not be limited to:

- Unconditional concurrence;
- conditional concurrence contingent upon modification of applicant's technical parameters; or
- 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.

3.1. 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)[4], 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.

3.2. 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.

3.3. 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).

---

[4] 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.

3.4. 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.

4. CONCLUSION

4.1. IN AGREEMENT HERETO, Regions 14 and 13 do hereunto set their signatures the day and year first above written.

Respectfully,

All signatories to agreement:

Signed: _____
Region 14 700 MHz RPC Chairman

Signed: _____
Region 13 700 MHz RPC Chairman

Date: _____

3.4 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.

4 CONCLUSION

4.1 IN AGREEMENT HERETO, Regions 14, and 17 do hereunto set their signatures the day and year first above written.

Respectfully,

All signatories to agreement:

Signed: _____
Region 14 700 MHz RPC Chairman

Signed: _____
Region 17 700 MHz RPC Chairman

Date: _____

3.4 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.

4 CONCLUSION

4.1 IN AGREEMENT HERETO, Regions 14, and 21 do hereunto set their signatures the day and year first above written.

Respectfully,

All signatories to agreement:

Signed: _____
Region 14 700 MHz RPC Chairman

Signed: _____
Region 21 700 MHz RPC Chairman

Date: _____

3.4 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.

4 CONCLUSION

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

Respectfully,

All signatories to agreement:

Signed: _____
Region 14 700 MHz RPC Chairman

Signed: _____
Region 33 700 MHz RPC Chairman

Date: _____

3.4 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.

4 CONCLUSION

4.1 IN AGREEMENT HERETO, Regions 14, and 54 do hereunto set their signatures the day and year first above written.

Respectfully,

All signatories to agreement:

Signed: _____
Region 14 700 MHz RPC Chairman

Signed: _____
Region 54 700 MHz RPC Chairman

Date: _____

26 APPENDIX I SAMPLE NOTIFICATIONS BY RPC TO SECONDARY TV STATIONS

NOTIFICATION OF COMMENCEMENT OF PLANNING PROCESS

Secondary LPTV and/or TV Translator Station and Call Sign Address

To Whom It May Concern:

This letter serves as formal notification of the commencement of the 700 MHz Regional Planning process for Region 14, Indiana. By this letter, (TV Station Call sign/location) 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.[5] You will be notified when Region __'s 700 MHz Plan has been approved by the FCC and again as public safety systems begin to be implemented in the band.

Sincerely,

Mr. H. Anthony Stantz
Chairman, Region 14
Region Planning Committee
c/o The Integrated Public Safety Commission
8500 E. 21st Street
Indianapolis, IN 46219
(317) 899-8524

[5] 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).

NOTIFICATION OF FCC APPROVAL OF 700 MHz REGIONAL PLAN

Secondary LPTV and/or TV Translator Station and Call Sign Address

To Whom It May Concern:

This letter serves as formal notification of the FCC approval of the 700 MHz Regional Planning for Region 14, Indiana. By this letter, (TV Station Call sign/location) is reminded 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.[1] You will be notified when public safety systems have been implemented in the band.

Sincerely,

Mr. H. Anthony Stantz
Chairman, Region 14
Region Planning Committee
c/o The Integrated Public Safety Commission
8500 E. 21st Street
Indianapolis, IN 46219
(317) 899-8524

[1] 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).

NOTIFICATION OF IMPLEMENTATION OF
700 MHz PUBLIC SAFETY SYSTEM

Secondary LPTV and/or TV Translator Station and Call Sign Address

To Whom It May Concern:

This letter serves as formal notification of the implementation of a public safety land mobile communications system located in (location/call sign) . By this letter, (TV Station Call sign/location) is reminded that its operations are secondary to this primary public safety land mobile operation. Low power TV stations and TV translators may not cause interference to this public safety system and must accept any interference they might receive from these operations.[1]

Sincerely,

Mr. H. Anthony Stantz
Chairman, Region 14
Region Planning Committee
c/o The Integrated Public Safety Commission
8500 E. 21st Street
Indianapolis, IN 46219
(317) 899-8524

[1] 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).

Mr. Gary Cochran, Chairperson
Region 13 700 MHz Regional Planning Committee
531 Sangamon Avenue
Springfield, IL 62702

Dear Gary Cochran,

Attached is the Final 700 MHz Regional Plan for Region 14. Please review and respond within 60 days of receipt. For your convenience, I have attached a sample Adjacent Region Concurrence letter that you can use to formally acknowledge your Region's approval of Region 14's Plan. If you have any questions, do not hesitate to contact me.

I have also attached an Inter-Regional Dispute Resolution Agreement that must be signed by you and must accompany my Regional Plan when filed with the FCC. As we have discussed, this Agreement simply formalizes the process we will use to ensure concurrence to any frequency allocations in our Regional borders and the steps we will take to resolve any disagreements.

Thank you for your time and attention to this matter.

Sincerely,

Mr. H. Anthony Stantz
Chairman, Region 14
Region Planning Committee
c/o the Integrated Public Safety Commission
8500 E. 21st Street
Indianapolis, IN 46219
(317) 899-8524

Chair Region 17

Dear Robert Stephens,

Attached is the Final 700 MHz Regional Plan for Region 14. Please review and respond within 60 days of receipt. For your convenience, I have attached a sample Adjacent Region Concurrence letter that you can use to formally acknowledge your Region's approval of Region 14's Plan. If you have any questions, do not hesitate to contact me.

I have also attached an Inter-Regional Dispute Resolution Agreement that must be signed by you and must accompany my Regional Plan when filed with the FCC. As we have discussed, this Agreement simply formalizes the process we will use to ensure concurrence to any frequency allocations in our Regional borders and the steps we will take to resolve any disagreements.

Thank you for your time and attention to this matter.

Sincerely,

Chair, Region 14

Chair Region 21

Dear Joseph Turner,

Attached is the Final 700 MHz Regional Plan for Region 14. Please review and respond within 60 days of receipt. For your convenience, I have attached a sample Adjacent Region Concurrence letter that you can use to formally acknowledge your Region's approval of Region 14's Plan. If you have any questions, do not hesitate to contact me.

I have also attached an Inter-Regional Dispute Resolution Agreement that must be signed by you and must accompany my Regional Plan when filed with the FCC. As we have discussed, this Agreement simply formalizes the process we will use to ensure concurrence to any frequency allocations in our Regional borders and the steps we will take to resolve any disagreements.

Thank you for your time and attention to this matter.

Sincerely,

Chair, Region 14

Chair Region 33

Dear Paul Mayer,

Attached is the Final 700 MHz Regional Plan for Region 14. Please review and respond within 60 days of receipt. For your convenience, I have attached a sample Adjacent Region Concurrence letter that you can use to formally acknowledge your Region's approval of Region 14's Plan. If you have any questions, do not hesitate to contact me.

I have also attached an Inter-Regional Dispute Resolution Agreement that must be signed by you and must accompany my Regional Plan when filed with the FCC. As we have discussed, this Agreement simply formalizes the process we will use to ensure concurrence to any frequency allocations in our Regional borders and the steps we will take to resolve any disagreements.

Thank you for your time and attention to this matter.

Sincerely,

Chair, Region 14

Chair Region 54

Dear William Carter,

Attached is the Final 700 MHz Regional Plan for Region 14. Please review and respond within 60 days of receipt. For your convenience, I have attached a sample Adjacent Region Concurrence letter that you can use to formally acknowledge your Region's approval of Region 14's Plan. If you have any questions, do not hesitate to contact me.

I have also attached an Inter-Regional Dispute Resolution Agreement that must be signed by you and must accompany my Regional Plan when filed with the FCC. As we have discussed, this Agreement simply formalizes the process we will use to ensure concurrence to any frequency allocations in our Regional borders and the steps we will take to resolve any disagreements.

Thank you for your time and attention to this matter.

Sincerely,

Chair, Region 14

28 APPENDIX K SAMPLE ADJACENT REGION CONCURRENCE LETTER

Date

Mr./Ms. Regional Chairperson Region __
Contact Info

Dear Mr./Ms. _____

Region __ is in receipt of your proposed 700 MHz Regional Plan, submitted to this Committee on mm/dd/yy. Region __ met on mm/dd/yy, reviewed and formally approved Region __'s Plan.

This letter serves as the official, written concurrence of Region 14 to your proposed 700 MHz Regional Plan.

Sincerely,

Mr./Ms. _____
Chairperson Region 14
Contact Info

29 APPENDIX L – FREQUENCY PLANNING AREAS FOR REGION 14 REGIONAL CONFORMANCE AND REVIEW COMMITTEE MEMBERSHIP

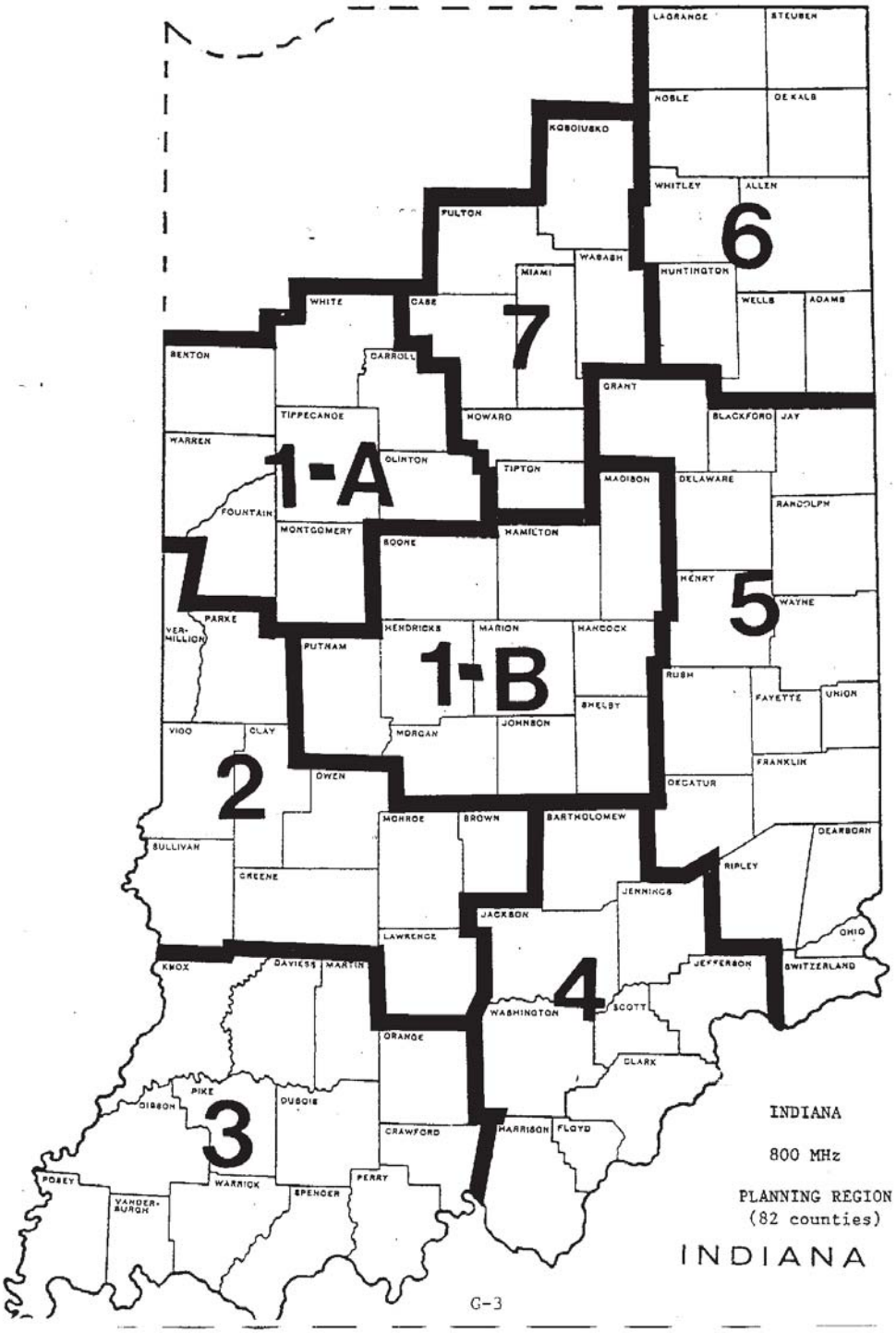



Figure 2 FREQUENCY PLANNING AREAS (FPA's), INDIANA 800 MHz PLANNING REGION