

SUMMARY OF MAJOR ELEMENTS REGION 21 NPSPAC PLAN

The Region 21 NPSPAC Plan provides interested parties with the information necessary to obtain licensure of frequency resources in the 806-809/851-856 MHz (NPSPAC) frequency band. The plan has three main parts: 1) an introduction with pertinent information on the regional planning process and regional planning committee authority, 2) an application process section outlining information required to submit a complete application and 3) the application submission procedure, which describes committee procedures for accepting and handling applications, dealing with mutually exclusive applications and post licensing system implementation.

The introduction contains a brief history of the planning process, defines the region and cites Federal Communications Commission (FCC) rule and docket numbers delegating authority to the Regional Planning Committee (RPC) to write and administer this regional plan. This section describes how the original channel allotment was made (via the APCO sorting algorithm) and makes provision for a “pool” of channels consisting of unallocated channels region wide. It also describes coordination with adjacent regions.

The Application Process section begins with a list of submittals required of applicants and goes on to describe frequency assignment criteria. These criteria are based on channel loading to 100 units per trunked channel and 70 units per conventional channel. Applicants are encouraged to utilize spectrum efficient technologies. A propagation model is described and its use in determining service area contour and co and adjacent channel interference contours is outlined. Restrictions are placed on the extent of coverage overlap into adjoining political subdivisions. Interoperability requirements are given with emphasis on implementation and proper use of the Calling and Tactical Channels. The plan requires the use of plain language at all times. A list of the 700 MHz interoperability channels has been included in this plan for the convenience of the applicant. Applicants are required to make provision for establishing communications plans/links to agencies outside of their immediate geographic areas.

Application Submission procedures are enumerated in the Application Submission and Approval Flow Chart. Mutually exclusive application situations may be resolved through the use of the Competing Application Flow Chart. An Appeal process is described and the Michigan Public Safety Frequency Advisory Committee (MPSFAC) is delegated as the regional plan update committee.

PREFACE TO THE FIRST REVISION

New developments in the state of the communications art make it desirable for the Michigan Public Safety Frequency Advisory Committee (the Region 21 Regional Planning Committee) to update the Region 21 NPSPAC Plan. This the committee does with the utmost gratitude and respect for those who participated in the original planning process. That fact that many public safety communications systems have been built in Region 21 as a result of the plan these individuals crafted is a testimony to their success and dedication.

However, times and technology change and planning efforts must keep up with these changes. It is our hope that this revision of the FCC Region 21 Planning Region Plan provides to applicants and planning committee members alike a plan that is easier to understand and use and as up-to-date as possible. But as it happens, language once clearly understood can become less so over time. Thus, future committees must be proactive in keeping this plan current.

Without the many persons that have participated in the planning process through the years we would have no process at all. These individuals do not seek acclaim; but it is high time that certain of them are recognized for their outstanding contributions to the regional planning committee: Sgt. Richard Martin (MSP), Mr. Brent Williams, Mr. Dale Berry (Huron Valley Ambulance, Vice Chairman), Ms. Patricia Coates (Oakland County Clemis, Secretary), Mr. Thomas Briggs (MDOT), Ms. Kasey Mlujeak (MDOC), Chief Bill Nelson (Troy Fire Department), Mr. Karl Beckman (Motorola), Mr. Mark Sanberg (MPSCS), Chief Lloyd Collins (South Lyon Police Department), Mr. Jim Fyvie (Clinton County), Mr. Al Nowakowski (MPSCS), Mr. Timothy Spence for his help preparing this document for submittal and last but certainly not least, Mr. Joseph Turner (MML). We also recognize and thank the agencies represented by these fine individuals for generously allowing them to participate.

I hereby certify that all meetings of the Michigan Public Safety Frequency Advisory Committee (Region 21 800 MHz Regional Planning Committee) are open to the public.

Keith M. Bradshaw, Chair
Michigan Public Safety Frequency
Advisory Committee

Date: _____

THE REGION TWENTYONE 806 MHz PLAN

Table of Contents

SUMMARY OF MAJOR ELEMENTS REGION 21 NPSPAC PLAN	1
PREFACE TO THE FIRST REVISION	2
REVISION HISTORY	3
TABLE OF CONTENTS	4
INTRODUCTION	6
PURPOSE	6
REGION DEFINED	7
REGIONAL PLANNING COMMITTEE AUTHORITY	7
<i>The Michigan Public Safety Frequency Advisory Committee</i>	7
<i>National Interrelationships</i>	8
<i>International Relationships</i>	8
<i>Spectrum Allotments</i>	8
<i>Eligibility</i>	9
<i>Coordination With Adjacent Regions</i>	9
APPLICATION PROCESS	9
REQUIRED APPLICATION SUBMITTALS	10
<i>Statement of Need</i>	10
<i>Budgetary Commitment</i>	10
<i>FCC Form 601</i>	11
<i>Engineering Studies</i>	11
<i>Interoperability Requirements</i>	11
<i>Legacy Conventional Channel “Give Backs”</i>	11
<i>Who to contact with questions.</i>	12
FREQUENCY ASSIGNMENT CRITERIA	12
<i>International Treaty Considerations</i>	12
<i>Channel Loading</i>	12
<i>Spectrum Efficient Technologies</i>	13
COVERAGE AND INTERFERENCE CONSIDERATIONS	13
<i>Propagation Model</i>	13
<i>Service Area</i>	13
<i>Interference - Cochannel</i>	14
<i>Interference - Adjacent Channel</i>	14
<i>Coverage Limitations</i>	15
INTEROPERABLE COMMUNICATIONS REQUIREMENTS	15
<i>TACTICAL On Scene Communications</i>	15
<i>Interoperability</i>	16
<i>Common Channel Implementation</i>	17
<i>Operation on the Interoperability/Tactical Common Channels</i>	17
Operating Procedures	17
Calling Channel (8CALL90)	18
Interoperability Channels	18
<i>Use of LongRange Communications</i>	18
APPLICATION SUBMISSION, COMPETING APPLICATIONS AND SYSTEM IMPLEMENTATION	19
APPLICATION SUBMISSION AND APPROVAL FLOW CHART (BLOCKS I THRU IX)	19

POST LICENSING SYSTEM IMPLEMENTATION (BLOCKS X THRU XVI)	19
<i>APPEAL PROCESS</i>	20
COMPETING APPLICATION FLOW CHART (BLOCKS 1. THRU 8.)	20
<i>Service and Use</i>	20
<i>Interoperability Diversity</i>	21
<i>Cooperative Use</i>	21
Expansion of Existing Systems	22
<i>Spectrum Efficient Technology</i>	22
<i>Urban Sprawl</i>	22
<i>System Implementation</i>	22
<i>System Density</i>	23
<i>Givebacks</i>	23
APPLICATION SUBMISSION AND APPROVAL FLOW CHART	24
COMPETING APPLICATION FLOW CHART	26
INTER-REGIONAL DISPUTE RESOLUTION	27
REGIONAL PLAN UPDATE COMMITTEE	27
APPENDICES	27
A - Inter-Regional Dispute Resolution/Concurrence	
B - Appeal Process	
C Channel Assignments by County	
D - Committee Structure and By-Laws	
E – 8CALL System Map	
Figure 1 National Itinerant Channels	16
Figure 2 700 MHz Interoperability Channels	18

INTRODUCTION

When the Federal Communications Commission announced allocation of radio frequency spectrum in the 800 MHz band to the Public Safety and Special Emergency Radio Services (SERS) in July 1986, the US Congress mandated that a National Plan outlining the use of these resources be in place before any agency would receive channels from this new allocation. As part of this mandate, Regional Planning Committees (RPCs) were tasked with developing regional plans conforming to the National Public Safety Planning Advisory Committee (NPSPAC) National Plan.

Michigan APCO chapter President, Mr. Robert R. Wertz appointed Mr. David Held (Michigan State Police Communications Unit) as Michigan Region Convener on January 19, 1988. During the remainder of 1988, Mr. Held along with Mr. Richard DeMello (Michigan Department of Natural Resources) and others drafted and distributed correspondence for the first meeting of the RPC. Notices for the first meeting were sent to all seventy-three county courthouses in Region 21. In addition, notices were sent to U.S. Government agencies, State and Local municipal agencies and all licensed users of the Special Emergency Radio Service frequencies. In all, approximately three thousand notices were distributed.

Mr. Held called the first Region 21 Regional Planning Committee meeting to order in Lansing, Michigan on January 19, 1989. At which time, Mr. Larry Zabkowski (City of Southfield Communications) was elected Region 21 RPC Chairman. The Committee established the following rules: 1) one vote per eligible agency present for each committee in session, 2) fifty-one percent of members present constitute a majority and 3) meetings to be conducted by Roberts Rules of Order. A final draft of the plan was adopted by majority vote of the members in attendance at a meeting held on October 26, 1989. The Region 21 Regional Plan was approved by the FCC on July 6, 1990.

Purpose

This Regional Plan was developed to insure maximum public benefit is derived from the allocation of spectrum in the 806-809/851-854 MHz radio band (known as the NPSPAC band). Recognizing that spectrum in this band is at a premium, the Plan seeks to ensure the

assignment of frequencies in as equitable a fashion as possible, with priority given to those public safety and public services agencies that are primarily responsible for the protection of life and property. Further, that frequencies once assigned will be utilized in the most efficient manner.

Region Defined

Region 21 consists of all counties in the Upper Peninsula and all counties in the Lower Peninsula with the exception of Muskegon, Kent, Barry, Kalamazoo, St. Joseph, Ottawa, Allegan, Van Buren, Cass, and Berrien counties, which are part of Region 54.

REGIONAL PLANNING COMMITTEE AUTHORITY

Authority for the Regional Planning Committee to carry out its assigned tasks is derived from the Federal Communications Commission (FCC) Report and Order, General Docket 87112. The criteria established in this plan form the basis for assigning and protecting NPSPAC frequencies for both applicants and incumbent licensees under authority granted in the Code of Federal Regulations Title 47 Part 90, sub-section 90.621(g) {FCC rules 47CFR90.621(g)}.

The Michigan Public Safety Frequency Advisory Committee

The Michigan Public Safety Frequency Advisory Committee (MPSFAC) processes all applications for spectrum in the NPSPAC band. The MPSFAC shall conduct its affairs in accordance with its bylaws. All questions as to committee operations or decisions shall be referred to the bylaws. The bylaws may be found in the Appendix. Please note: each committee member who is a representative of an eligible agency is entitled to one vote in all Committee matters. Except as may be provided elsewhere in this plan, the majority of those present at a scheduled meeting will prevail.

The MPSFAC shall make every effort to properly coordinate each application in accordance with applicable FCC rules and the requirements of this plan. Therefore, in addition to the technical data required on FCC Form 601, the committee may request and applicants are required to provide technical information such as but not limited to, antenna and interconnecting coaxial cable data by manufacturer model and type; transmitter emissions

data and receiver noise and adjacent channel rejection data; and/or any other information that the committee may deem necessary to make proper frequency assignments. However, final determination as to the efficacy of frequency assignments and/or technical parameters of the application rests with the FCC.

National Interrelationships

By officially sanctioning this plan the FCC agrees to its conformity to the National Plan. Nothing in this plan is to interfere with the proper functions and duties of the organizations appointed by the FCC for frequency coordination in the Private Land Mobile Radio Services. This plan provides procedures that are the consensus of the planning participants. In all cases of conflict, perceived or otherwise, that warrant intervention by the FCC, the judgment of the FCC will prevail.

International Relationships

Assignment and use of NPSPAC frequencies in the Canadian border areas of Region 21 are subject to the conditions set forth in the “Exchange of Notes (October 24, 1962) Between the Government of Canada and the Government of the United States of America Concerning the Coordination and Use of Radio Frequencies Above 30 Mega Cycles per Second” as amended along with all pertinent Arrangements. Copies of these agreements may be found on the International Bureau section of the FCC website at www.fcc.gov.

Spectrum Allotments

The Region 21 Regional Planning Committee adopted channel allotments generated by the Association of Police Communications Officials, Inc. (APCO), using an algorithm developed for this purpose. Each county within the region would receive a minimum of four (4) channels. Please note: Channels in the NPSPAC band are “offset”, i.e. they are spaced 25 kilo-Hertz (KHz) apart, yet the channel width is 25 KHz. Systems requiring 25 KHz channels will be referred to as “wideband” systems and systems requiring 12.5 KHz channels will be referred to as “narrowband” systems.

Due to the necessity of supplying channels for statewide and other large system implementations, Region 21 channel allocations have diverged somewhat from the original

channel allotments. Recognizing the continuing need of growing systems for resources and the inability to honor the original sort, it is wise to acknowledge current allocations and make provision for future needs. Therefore, all channels covered under this plan shall be considered a pool available to any applicant satisfying the requirements of this plan. Current channel allocations may be found in the Appendix.

Eligibility

Eligibility requirements for persons or agencies desiring licensure in the 806-809/851-854 band are given in Title 47 Code of Federal Regulations part 90 sub-section 90.603 {47CFR90.603} and in FCC General Docket 87-112. Because these spectrum resources are finite, the Committee realizes that situations may arise in which all eligible applicants may not receive requested resources. In such instances, resources will be allocated according to the provisions of this plan as outlined in the Competing Application Flow Chart. In such cases, priority will be given to those applicants whose primary charge is the protection of life and property.

Coordination With Adjacent Regions

Coordination with adjacent regions was accomplished by sending each a copy of the completed plan along with the appropriate inter-regional concurrence and dispute resolution agreement. Adjacent regional planning committees were requested to review and comment within 21 days. These agreements are located in the Appendix. Any system or frequency that may impact a neighboring planning region must be coordinated by the respective committees of the affected regions.

APPLICATION PROCESS

Applications will be reviewed at scheduled meetings of the MPSFAC. Applicants must contact the MPSFAC chairperson with a request to include their application as an agenda item and must supply all members of the MPSFAC with a copy of the application, either electronically or via US mail, at least two weeks before the review meeting. Late

applications will be reviewed at the next scheduled meeting of the MPSFAC. Applications may be filed for committee review at scheduled meetings of the MPSFAC; however, applications so filed will be reviewed at the next scheduled meeting. The flow chart, entitled "Application Submission and Approval Flow Chart", depicts the sequence of steps the committee will use in the allocation of 800 MHz spectrum resources.

REQUIRED APPLICATION SUBMITTALS

Each applicant shall supply the following information:

- Statement of need for installing a new NPSPAC system.
- Explanation of budget commitment that has been made for the proposed system; include agency budgets and/or agency resolution(s).
- FCC Form(s) 601
- Details of engineering studies showing radio coverage will *not* exceed applicant's minimum requirements.
- An explanation of how an applicant's agency will comply with interoperability requirements of this plan.
- Proof of notification of surrounding entities of intent to seek 800 MHz channel resources and any plans or discussions to address cross-band and/or cross-agency interoperability
- An explanation of provision for future growth of agencies not involved in the initial system build out, if any.
- List of PW radio pool frequencies of all agencies migrating to new system. Provide a brief description of utilization along with dates they are to be given back to the PW pool.
- Evidence of coordination with adjacent region(s) in the event an applicant's service area or co-channel interference contour extends into the adjoining region(s). See Appendix A.

Statement of Need

Applicants are required to demonstrate need for frequencies requested. Frequency assignments will not be made so that applicants can storehouse such assignments for future use.

Budgetary Commitment

Applicants must demonstrate the financial resources to build the proposed system. Documentation in the form of resolutions for bonding or other fiscal mechanisms or agency budgets must be provided.

FCC Form 601

Applicants must submit Form 601 along with the appropriate coordination request form of the desired PW frequency coordination body. Form 601 consists of the following: Main Form (four pages), Schedule D (as appropriate), Schedule H (as appropriate), and other schedules as necessary. If the applicant has identified potential frequencies, these will appear on Schedule H. If the applicant wishes the Committee to identify frequencies, Schedule H will be blank.

Engineering Studies

Contour studies showing service area, co-channel interference and adjacent channel interference must be supplied with the application. These shall include a 40dbu(50,50) service area contour, a 25dbu(50,10) adjacent channel interference contour and a 5dbu(50,50) co-channel interference contour. Contours are discussed in detail in the section titled Coverage and Interference Considerations elsewhere in this document.

Interoperability Requirements

Applicants must demonstrate that the proposed system will provide interoperability with disparate agencies and disciplines as appropriate for their region as specified elsewhere in this document. Applicants wishing to utilize 700 MHz channels with a proposed or existing system must also comply with the requirements of the Region 21 700 MHz Plan, State Interoperability Executive Committee (SIEC) or other entity charged with managing the assignment and use of 700 MHz interoperability resources.

Applicants must provide proof they communicated an announcement of their intent to seek new 800 MHz frequencies and offered an invitation to the state, the county or counties within which the proposed system is located, local governmental units within these counties and other relevant stakeholders to participate in a discussion and formulate plans and procedures

to facilitate interoperability. Interoperability plans and procedures must be included in the application package.

Legacy Conventional Channel “Give Backs”

Applicants must give consideration to the disposition of frequencies currently being used by those agencies planning to transition to the 800 MHz system. Applicants are required to provide the committee a schedule for those agencies to return their operating frequencies to the appropriate pool. While it is recognized by the Committee that circumstances may render impossible the return of all listed frequencies, it is expected that applicants shall make a good faith effort to return the maximum number of such as possible.

It is not consistent with the objectives of this Plan to allow agencies to “farm down” frequencies to other radio services within their political structure simply to take advantage of surplus equipment. The need for communications by such an agency may be outweighed by the needs of another political subdivision. “Warehousing” frequencies is not permitted under FCC rules. FCC authorized frequency coordinators will be responsible for assignment of returned channels through normal coordination procedures.

Who to contact with questions.

Any questions regarding the application process may be directed to the Michigan APCO Local Advisor or the Chairperson of the MPSFAC. Contact information for persons currently holding these positions is available in the Appendix or on the MPSFAC and Michigan APCO website at www.MPSFAC.net and www.miapco.org respectively.

FREQUENCY ASSIGNMENT CRITERIA

International Treaty Considerations

Use of certain allotted frequencies in the counties east of the 85th meridian (Line A) is subject to international treaty obligations. These frequencies are noted in the channel allotments found in the appendix. Please see Title 47 Code of Federal Regulations Part 90.7 for the complete definition of Line A.

Channel Loading

Each applicant is to certify that a minimum of 100 subscriber units for each frequency requested shall be placed into service immediately upon system completion unless said applicant is requesting a slow growth build out plan. In that case, applicants will certify that 100 subscriber units per frequency will be placed in service within five years of the initial application approval date. If either of the applicable target loading criteria is not met, less than fully loaded channels shall be returned to the allotment pool and the licensee shall modify their license accordingly. Conventional channels shall be loaded to 100 subscriber units per channel. Where an applicant does not load conventional channels to 70 mobile radios per channel, the unloaded or under-loaded channel(s) will be available for assignment to other licensees. Mobile, portable and control station units are to be counted as subscriber units.

Spectrum Efficient Technologies

Systems requiring four (4) or less channels may operate in the conventional, non-trunked mode. Systems requiring five (5) or more channels are expected to utilize spectrum efficient technologies meeting or exceeding FCC bandwidth rules.

COVERAGE AND INTERFERENCE CONSIDERATIONS

Propagation Model

The propagation model preferred for use in calculating the required contours is the corrected R-6602 model or any other methodology as provided for in TSB-88. Various software packages are commercially available to plot these contours.

Service Area

Service area for systems serving a single jurisdiction or system serving multi-disciplinary/multi-jurisdiction consortiums within the geographical boundaries of a single county will be defined as the boundaries of the contiguous geographic areas in which an applicant routinely offers public safety services plus three (3) miles. An applicant for a county-wide multi-jurisdictional/multi-disciplinary system may request to use a county-like area to define their service area. In such cases, the county-wide system applicant will be permitted to

utilize channels allotted to their county within the county like area defined above – provided the channel(s) conform to the adjacent and co-channel interference criteria of this plan.

Some applicants may require coverage that encompasses more than one contiguous county. A multiple county consortium may utilize county-like areas when determining their service area. In such cases, the service area would be considered the geographic boundaries of the contiguous counties plus ten (10) miles. In that case, and with permission of the governing board of the affected county, allocations from each affected county may be used within the other county. Should such a consortium be located in an area that lies beyond a distance of 113km from an adjacent planning region, no concurrence from that region will be necessary. If however, the consortium will operate within 113km of an adjacent region, concurrence from that region for the proposed frequency plan will be required.

The maximum “designed mean signal strength” at a contour extending three (3) miles outside of the boundary of the applicant's jurisdiction shall not exceed +40dBu (+40dB above one microvolt per meter). This contour shall be included with the applicant's submittals and shall be calculated using the corrected R-6602 at a (location,time) confidence of (50,50). In order to allow for practical system design, this three (3) mile limit may be altered on a case by case basis. In any case, the 40dbu contour shall not exceed five (5) miles beyond the boundary of the applicant's jurisdiction. Signal level may be verified using a 1/4 wave whip antenna five feet (5') above the ground.

Interference - Cochannel

Cochannel assignments will be made when it is determined that the two or more systems will create a signal of +5dbu or less anywhere within their cochannel partner's boundary. This contour shall be included with the applicant's submittals and shall be calculated using the corrected R-6602 at a (location,time) confidence of (50,50).

Interference - Adjacent Channel

As mentioned previously, channels in the NPSPAC band are spaced 12.5 kHz apart, yet they are 25 KHz wide. Many new and legacy systems require “wideband” 25 kHz channels in

which to operate while others require “narrowband” 12.5 kHz channels. Systems that operate “wideband” will tend to interfere with systems that operate “narrowband” on a 12.5 kHz adjacent channel and vice versa. Therefore, adjacent channel interference must be considered in light of the requirements of the proposed system versus pre-existing incumbent operations. Adjacent channel assignments (wideband to narrowband and vice versa) will be made when it is determined that the two or more systems will create a signal strength of +25dBu or less anywhere within the adjacent channel user’s jurisdictional boundary. The +25dBu contour shall be included with the applicant’s submittals and shall be calculated using the corrected R-6602 at a (location,time) confidence of (50,10).

Adjacent channel assignments (narrowband to narrowband) will be made when it is determined that the two or more systems will create a signal strength of +60dBu or less anywhere within the adjacent channel user’s jurisdictional boundary. The +60dBu contour shall be included with the applicant’s submittals and shall be calculated using the corrected R-6602 at a (location,time) confidence of (50,10).

Coverage Limitations

Strict adherence for limiting area of coverage to within the service area contour bounding the applicant's jurisdiction will be observed. Overlap or extended coverage must be minimized even where systems utilizing trunked radio are proposing to intermix for cooperative and/or mutual aid purposes. Antenna heights are to be limited to provide only the necessary coverage for a system. When this is not feasible, transmitter outputs and special antenna patterns must be employed to produce the necessary coverage with an appropriate effective radiated power.

Distance between transmitters for cochannel reuse will be determined by interference to incumbent operations, the coverage needs of the applicant, natural barriers for separation, antenna patterning and limited ERP where possible. Applicants may be required to supply actual system test results and/or interference studies to ensure minimal adverse effect on incumbent operations.

INTEROPERABLE COMMUNICATIONS REQUIREMENTS

TACTICAL On Scene Communications

In the Third Report and Order in Docket 96-86, the FCC allocated twenty-four 6.24 kHz frequency pairs in the 700MHz band for low-power, on-site operations such as fireground. 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 two (2) watts ERP and antenna height is limited to 20’ above ground. Six (three 12.5 kHz pairs) of these frequencies are for nationwide itinerant usage and are not subject to regional planning. The remaining 18 (nine 12.5 kHz pairs) low power frequencies are to be administered by the 700 MHz Regional Planning Committees.

Interest has arisen from national fire service representatives to establish common channel naming and tone squelch for these channels in order to accommodate common usage on the foreground and other tactical situations. The following is a draft proposal to address this interest. Analog 12.5 kHz operation with a common tone of 156.7Hz would be used on all frequencies. Each channel has been given a discipline indicator to allow users some channels to focus on: however, all nine channels would be available for assignment as needed. Within each discipline group, frequency separation has been provided in order to reduce interference.

ALIAS	Mobile RX	Mobile TX
7FTAC1D	769.00625	769.00625
7FTAC2D	774.93125	774.93125
7FTAC3D	769.04375	769.04375
7GTAC4D	769.03125	769.03125
7GTAC5D	774.95625	774.95625
7LTAC6D	769.01875	769.01875
7LTAC7D	774.94375	774.94375
7LTAC8D	774.98125	774.98125
7MTAC9D	774.96875	774.96875
7NTAC10D	769.05625	769.05625
7NTAC11D	769.06875	769.06875
7NTAC12D	774.99375	774.99375

Figure 1 National Itinerant Channels

Interoperability

Interoperability between Federal, State and Local Governments during both daily and disaster

operations will primarily take place on the channels designated for interoperability in the 700 – 800 MHz spectrum as identified in section 47CFR90.531. Additionally, through the use of S160 or equivalent agreements, a licensee may permit Federal use of a nonFederal communications system. Such use on other than the five identified common channels, is to be in full compliance with FCC requirements governing the use of nongovernment frequencies (Title 47 Code of Federal Regulations, Sub-section 2.103).

Common Channel Implementation

The implementation of the common channels required under the National plan will utilize a two tier network.

1. The 800 MHz calling channel (8CALL90) has been implemented as a full mobile relay utilizing a CTCSS of 156.7 Hz. The locations of these wide area coverage transmitters are shown in the Appendix. A watch is maintained on this channel by the Michigan State Police regional dispatch centers. Due to the configuration of the 8CALL infrastructure, repeaters on the calling channel shall be maintained in the “Repeat-OFF” mode.
2. Tactical channels (8TAC91 thru 8TAC94) will also utilize a CTCSS of 156.7 Hz for both transmit and receive. Tactical Channel operation will primarily be on scene simplex (8TAC91D thru 8TAC94D) or mobile/portable repeater operation. The interoperability and tactical channels may be utilized by individual agencies where there is a need for in building coverage for tactical operations such as firefighting, law enforcement tactical, or similar emergency related communications that trunked system infrastructure may not provide due to coverage, loading, or specialized applications such as communicating through self contained breathing apparatus (SCBA). Any fixed mobile relay stations on the Tactical channels shall be maintained in non-repeat mode unless specifically requested by a participating agency.

Operation on the Interoperability/Tactical Common Channels

Operating Procedures

Plain ENGLISH will be used at all times on ALL interoperability channels. The use of agency specific terms, phrases or codes will not be allowed. Users will be coming from varied backgrounds and disciplines each having his/her own discipline/agency specific language; therefore, for personnel safety and clarity of communications use only PLAIN ENGLISH when utilizing the interoperability channels.

Calling Channel (8CALL90)

The calling channel shall be used to contact other users in the region that can render assistance at an incident. This channel shall not be utilized as an ongoing working channel. Once contact is made between agencies, an agreed upon tactical or interoperability channel shall be used for continued communications.

Interoperability Channels

These frequencies are designated for use by those agencies involved in multi-agency and/or multi-discipline operations requiring radio communications. Incidents requiring multi-agency participation will utilize these frequencies as directed by the incident commander or Communications Unit Leader for an incident or area of concern. These frequencies may be subdivided into use by various services of public safety as needed.

Alias	Mobile Rx	Mobile Tx	Alias	Mobile Rx	Mobile Tx
7CALL50D	769.24375	769.24375	7TRVL70D	773.25625	773.25625
7TAC55D	769.74375	769.74375	7TAC75D	773.75625	773.75625
7TAC56D	770.24375	770.24375	7TAC76D	774.25265	774.25265
7MOB59D	770.89375	770.89375	7MOB79D	774.50625	774.50325
7LAW61D	770.39375	770.39375	7LAW81D	774.00625	774.00625
7LAW63D	770.49375	770.49375	7LAW82D	774.35625	774.35625
7FIRE63D	769.89375	769.89375	7FIRE83D	773.50625	773.50625
7FIRE64D	769.99375	769.99375	7FIRE84D	773.85625	773.85625
7MED65D	769.39375	769.39375	7MED86D	773.00625	773.00625
7MED66D	769.49375	769.49375	7MED87D	773.35625	773.35625
7CALL50	769.24375	799.24375	7TRVL70	773.25625	803.25625
7TAC55	769.74375	799.74375	7TAC75	773.75625	803.75625
7MOD59	770.89375	800.89375	7MOB79	774.50625	804.50625
7LAW61	770.39375	800.39375	7LAW81	774.00625	804.00625
7FIRE63	769.89375	799.89375	7FIRE83	773.50625	803.50625
7MED65	769.39375	799.39375	7MED86	773.00625	803.00625

Figure 2 700 MHz Interoperability Channels

Use of LongRange Communications

During incidents of major proportions, public safety requirements might include the need for longrange communications in and out of a disaster area. Applicants must show, as part of the interoperability requirements of this plan, what provisions have been incorporated into system design and implementation to facilitate long-range communications. Such long distance radio communications could be amateur radio operations, satellite communications and/or longrange emergency preparedness communications systems.

APPLICATION SUBMISSION, COMPETING APPLICATIONS AND SYSTEM IMPLEMENTATION

This plan has been written to facilitate consistent evaluation of applications, resolve conflicts due to competing spectrum requests and monitor system implementation after the license has been issued. Variation outside of the parameters of this plan may require evaluation beyond the norm. Therefore, it is necessary for the MPSFAC to evaluate each situation on its own merit. The flow chart entitled Application Submission and Approval Flow Chart presents the sequence of events that will be followed in the allocation and utilization of the 800 MHz spectrum. The Competing Application Flow Chart is to be used when two or more applicants request frequencies in an area where insufficient resources exist to satisfy all requests. For the following discussion, please refer to the flow charts found in the Appendix.

APPLICATION SUBMISSION AND APPROVAL FLOW CHART (Blocks I thru IX)

Applications are received by the MPSFAC (Block I). A needs assessment review is conducted (Block II). This statement of need submitted with the application serves as an over-view of the proposed system. If the application is not in compliance with SIEC requirements and Regional Plan requirements, the application will be rejected at this point (Block III) and returned to the applicant with an explanation of the reason(s) for rejection. Applicants who chose to do so may appeal the committee's decision at this point. If there are no competing applications (Block IV) to be considered, the application will be populated

with channels (Block V) and be forwarded to the frequency coordinating body of choice (Block VI and beyond).

POST LICENSING SYSTEM IMPLEMENTATION (Blocks X thru XVI)

Should system implementation not begin (award of contract) within a two-year period or if projected channel loading is not attained within four years after the granting of a license(s), the channel(s) will be returned for reassignment to others. A one-year extension may be supported by the MPSFAC depending upon circumstances that are beyond the control of the applicant. The applicant will be responsible to contact the FCC to request an extension from the Commission. Any applicant must be doing all in their power to implement the project within their authority.

The MPSFAC will determine if progress is being made on the implementation of the system (Block X). Monitoring of systems implementation by the MPSFAC will take place at a minimum of one-year intervals. If progress is made the system is implemented (Block XI). If progress is not made, the licensee is advised that the FCC and the PW frequency coordinator will be informed of the situation (Block XII). The MPSFAC continues to monitor progress on the implementation of the system (Block X). If progress is still not being made, the licensee is notified of the pending action of the MPSFAC to advise FCC of lack of progress and request the license be withdrawn (Block XIII). The notified licensee can appeal this action (Block XIV) or can allow the license to be withdrawn (Block XV). If the authorized frequencies are withdrawn they are added back to the frequency allotment pool (Block XVI) and the process starts a second iteration at Block I.

APPEAL PROCESS

Applicants so disposed shall initiate an appeal to MPSFAC within ten (10) business days of the rejection of their application. Appeals will then be decided based on the Region 21 Appeal Procedure as given in the Appendix. In the event that an appeal reaches the FCC, the decision of the FCC will be final and binding upon all parties.

COMPETING APPLICATION FLOW CHART (Blocks 1. thru 8.)

The implementation of the Competing Application Evaluation Flow Chart will result in the award of a score for each application. The application score is the total number of the points awarded in eight categories. The applicant with the highest total score will have their application processed and supported for frequency coordination. Others will be returned to the applicant if no spectrum is available. The eight categories are as follows:

Service and Use

1. Service and Use (Block #1) – maximum score 375 points.
Who will make routine use of the proposed system? Score points for each individual discipline. Total points for this block will be the sum of the point assignments for each discipline and use the system is to support.

Service and Use Points:

Local Gov	25
Police	50
Fire	50
EMS	50
Schools	50
Road Commission	<u>25</u>
	250

Multiple Jurisdiction/Discipline Multiplier = 1.5 (1.5 X 250 = 375 Maximum)

Interoperability Diversity

2. Interoperability Diversity (Block #2) – maximum score 200 points, minimum score 0 points.
The application is scored on the degree of interoperability that is demonstrated, with range of points from 0 to 200. This category does not rate the application on the inclusion of the mandated interoperability channels. This category does rate the application on its proposed ability to communicate with different levels of government and services during times of emergency.

Interoperability Points:

Each applicant is encouraged to have direct communications among the following applicable agencies:

Federal	20
State	20
Tribal Nations	20
Local Police	20

Local EMS	20
Local Fire	20
Local DPW	20
Highway Maintenance/ Road Commission	20
Non Governmental Organizations	20
Public Utilities.	<u>20</u>
	200 (Max)

Cooperative Use

3. Cooperative Use (Block #3) – maximum score 300 points. Those applications that have demonstrated that they are part of cooperative, multi-organization systems will be scored depending upon the extent of the cooperative system.

Cooperative Use Points:

Multi jurisdiction trunked system	150, or
Multi jurisdiction Conventional system	75

Expansion of Existing Systems

As it is the intent of this plan to promote cooperative use of the spectrum, expansion of an existing system will be given greater competitive weight than a new system. Therefore, the point award from the aforementioned category will be doubled as;

$$\text{Cooperative Use Points} \times 2 = \text{Score (Max 300)}$$

Spectrum Efficient Technology

4. Spectrum Efficient Technology (Block #4) - maximum score 200 points. This category scores the application on the degree of efficiency of spectrum use that the system demonstrates. A point value range of 0 to 100 points can be awarded for this category.

Spectrum Efficiency Points:

Description	Points
Trunked voice only	200, or
Trunked voice and data	100, or
Conventional voice and data	50, or
Conventional voice only	25

Urban Sprawl

5. Urban Sprawl (Block #5) – maximum score 150 points. If the applicant has recently established or plans to establish (applicant must show approved funding) a public safety agency, the applicant has no legacy frequency resources and

the proposed system will support this new agency, the application will be credited 150 points.

Urban Sprawl Points: 150

System Implementation

- 6. System Implementation Factors (Block #6) – maximum score 200 points.
This category scores the application on two factors, budgetary commitment and planning completeness. The degree of budgetary commitment and planning completeness are scored individually as a percentage with a maximum per category of 100 points. Applicants who demonstrate a high degree of commitment in funding and planning completeness will receive a higher score. Applicants will be required to submit a timetable for the implementation of the communications system or systems.

System Implementation Points:

Funding commitment

(% funding X 100)

Planning Completeness

+ (% complete X 100)

200 points Max

Resolutions or letters of intent verifying financial commitment shall be included with each application.

System Density

7. System Density (Block #7)

Each application will be scored on the ratio of subscriber units to the coverage area of the individual sites. For wide area or consortium systems, only count subscriber units permanently assigned within the boundary of the political subdivision where each site is located. Do not count itinerant units.

System Density Points:

$\{(\text{Number of units assigned to jurisdiction}) / (\text{Area of jurisdiction in square miles})\}$
= Score. (Ratios less than one score zero points.)

Givebacks

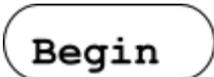
8. Givebacks or Relinquished Frequency(s) (Block #8) – maximum score 200 points. The applicant is scored on the number of channels given back. (UHF repeater pairs score as 1; VHF repeater pairs score as 2.)

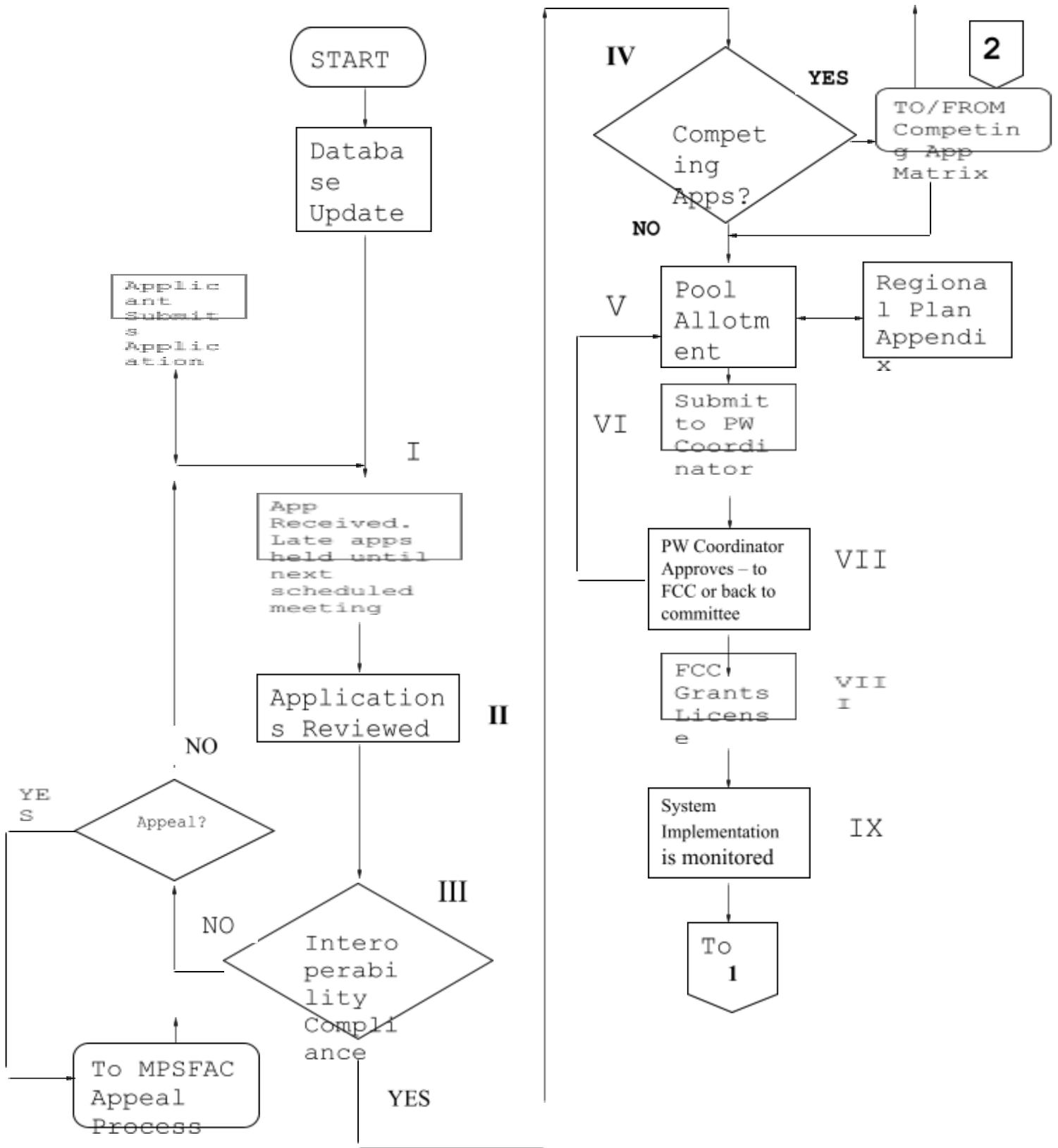
Give Back Points:

$(\text{Number frequencies to be relinquished}) \times 10 = \text{Score}$

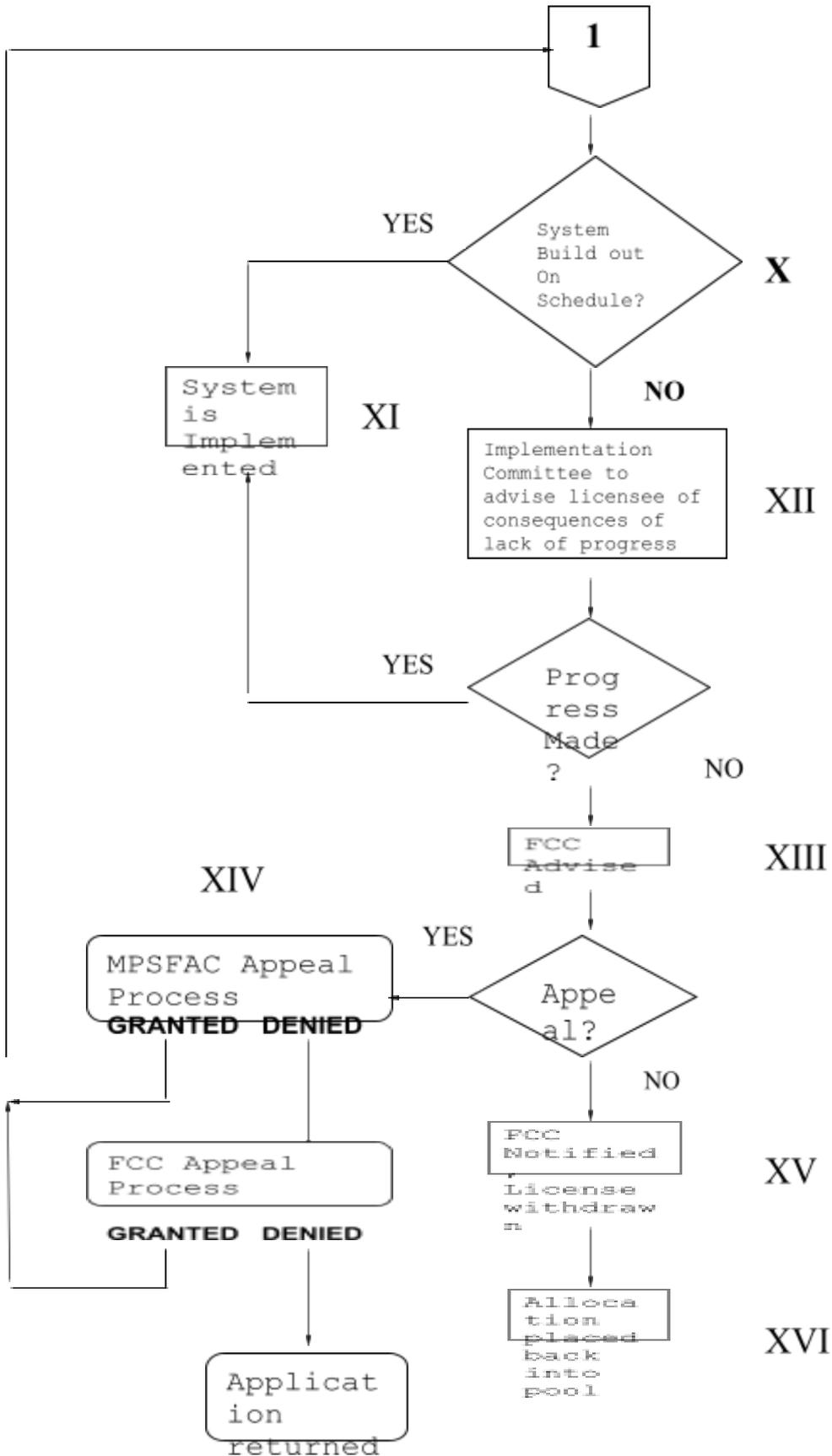
Matrix points are totaled for each application (Block #SUM).

Application Submission and Approval Flow Chart

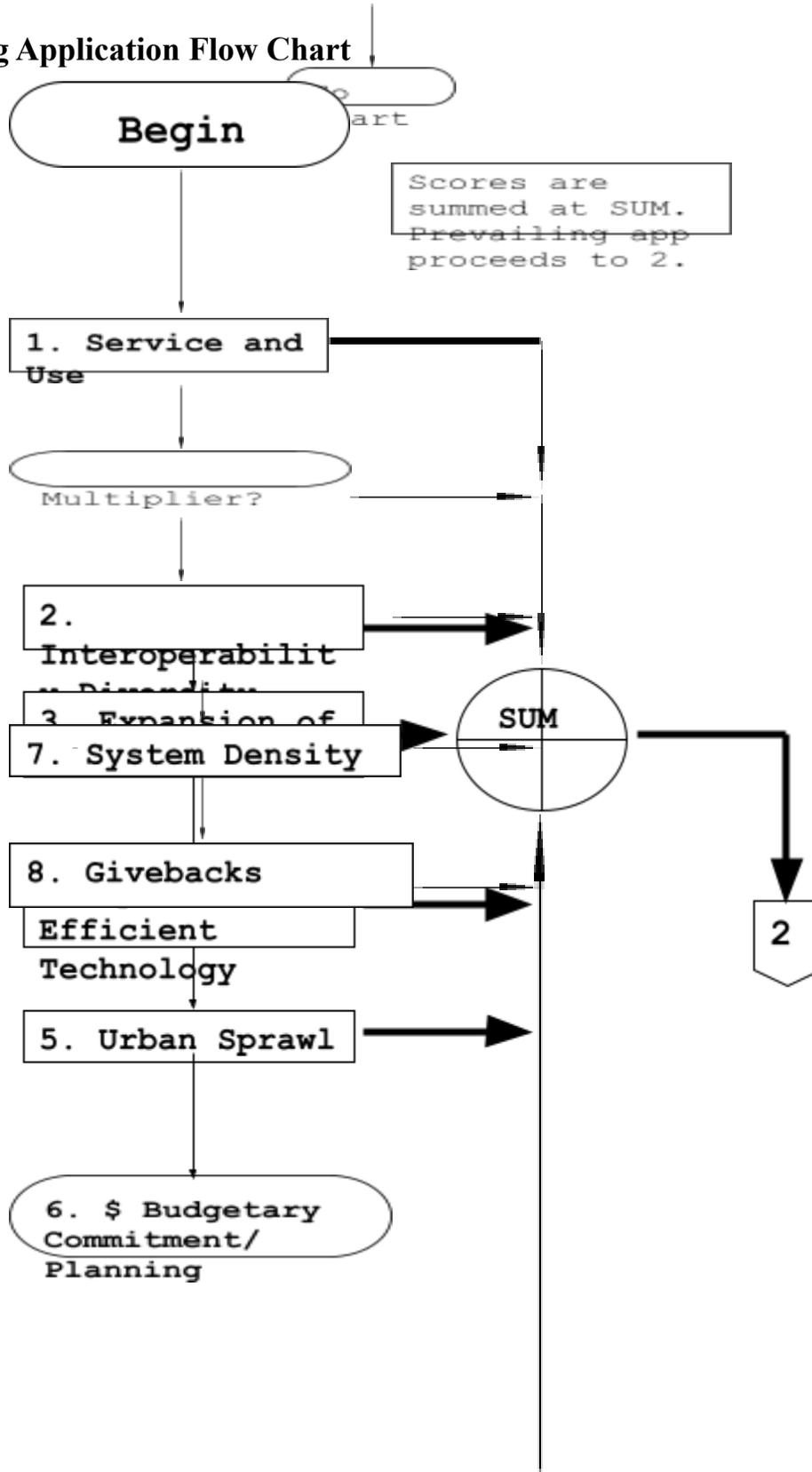




Application Submission and Approval, cont



Competing Application Flow Chart



INTER-REGIONAL DISPUTE RESOLUTION

Disputes between adjoining regions arising due to competing applications or interference situations will be resolved through the use of the appropriate inter-regional coordination procedures. These procedures may be found in the Appendix.

REGIONAL PLAN UPDATE COMMITTEE

The Michigan Public Safety Frequency Advisory Committee (MPSFAC) shall be the Regional Plan Update Committee. This committee will remain in place to process applications, recommend changes to this Regional Plan and provide a mechanism for interregional problem resolution.

APPENDICES