FCC REGION 19

NEW ENGLAND UPDATE PLANNING COMMITTEE

CHANNEL APPLICATION

AUTHORITY OF THE COMMITTEE

Section 90.34 of the FCC Rules and Regulations state, The Commission has established a National Plan which specifies special policies and procedures governing the Public Safety Radio Services and the Special Emergency Radio Service. The National Plan is contained in Report and Order in Gen. Docket No. 87-112. The principal spectrum resource for the National Plan is the 806-810 MHz and the 851-854 MHz bands. The National Plan establishes planning regions covering all parts of the United States, Puerto Rico, and the U.S. Virgin Islands. No assignments will be made in the 806-810 MHz and the 851-854 MHz bands until a regional plan for the area has been accepted by the Commission.

The plan for FCC Region 19, encompassing all of the New England states, except for Litchfield, Middlesex, New Haven, and Fairfield counties in Connecticut, has been approved by the Commission. Channel allocations made by the Committee constitute an amendment to the plan and require the approval of the FCC before a license application can be made. The Committee recommends that applicants not enter into an implementation contract or purchase equipment until an FCC license has been issued.

Public Safety and Special Emergency Service eligible to apply for these channels are identified by the FCC as:

Local Government	Disaster Relief Organizations
Police Service	Veterinarians
Fire Service	Handicapped Persons
Medical Service	School Buses
Forestry Conservation	Beach Patrols
Highway Maintenance	Isolated Community Standby Facilities
Rescue Organizations	Emergency Repair of Public Communications

COMMITTEE PROCEDURES

To ensure that all eligible agencies have an equal opportunity to apply for the limited 806 MHz spectrum that the Federal Communications Commission has approved the Committee's process of accepting applications only within specific periods commonly referred to as application windows. The current window period is April 1 – May 31 and October 1 – November 30 inclusive. To be considered by the Committee, the application must contain all information requested and be postmarked no earlier or later than these dates.

Mail the application and 3 paper copies and 10 CD's to:

Mr. Jerry Zarwanski, Chairman
New England Planning Committee (FCC Region 19)
c/o Office of Statewide Emergency Telecommunications
1111 Country Club Road
Middletown, CT 06457

The Committee evaluates and scores each approved application and compiles a prioritized list of those approved and the number of channels they may receive. The number may be less than the number requested. The approved channel allocations are sorted by a computer engineering program which tests all possible configuration of channels considering the proposed geographical area of operations, the topography, and the technical parameters of existing and proposed systems. The process will produce a list of available channels which may or may not be sufficient to meet the requirements of all applicants. It is possible that an applicant low on the priority list will receive an assignment of channels while none is available for an applicant with a higher priority.

FCC REGION 19 APPLICATION
821-824 MHz CHANNELS
(Section A)

(1) _____ _____
Agency name address

(2) Channels_____ (3 Trunked____ (4) Conventional____ (5) Slow_____ (6) Voice_____ (7) Data_____

(8) (9) (10) (11) (12) (13) (14) (15) (16) (17) (18)

Site	Channel	Latitude	Longitude	Ground Elev.	Power Out	ERP	Ant. Tip	Ant. Gain	Ant. Tilt	Ant.Direct
1										
2										
3										
4										
5										
6										

(19) (20)

Agency	Number of Vehicles	Number of Portables	Number of Aircraft	Number of Marine	Number of Pagers

(21) Frequencies returned _____ _____ _____ _____ _____ _____

(22) Frequencies not returned _____ _____ _____ _____ _____ _____

(23) Intercommunication Requirements

Agency	Frequencies Used		

(24) Systems justification _____

(25) Implementation time table _____

(26) Comments _____

(27) Application prepared by _____ Phone _____

This agency has a firm intention to implement 806 MHz system within the time permitted by the FCC and to return for use by other public safety eligibles existing unneeded channels. We will provide the committee copies of all progress reports submitted to the FCC. Should implementation not begin or be completed within the time approved by the FCC or channel loading projections are not achieved, the channels will be returned for re-allocation to other public safety agencies.

We will comply with all applicable requirements for common channel implementation and participation as described in the application package.

The information contained in the application and attachments is true and correct.

(28) Signature _____ Title _____ Date _____
(typed) _____

Pursuant to Section 1.913 of FCC Rules and Regulations, "… applications, amendments, and related statements of fact filled on behalf of eligible governmental entities… must be signed by a duly elected or appointed official who is authorized to do so under laws of the applicable jurisdiction."

DIRECTIONS FOR COMPLETING THE APPLICATION – SECTION A

1. Although there may be a number of agencies that will use the system, the name of the licensee should be listed here. The balance of the line is for the agency's mailing address.

2. Enter the number of channels you believe you can justify. Additional information on these channels will be called for in Items 8-18.

3. If the space is to be trunked, place an (x) in the space provided. If not trunked, leave this space blank.

4. If the system is to be conventional, non-trunked, place an (x) in the space provided. If not, leave this space blank.

5. Under specific circumstances, a governmental entity may seek FCC approval for slow growth implementation of their system. Section 90.155(a) quoted on page 9 provides some guidance. Additional conditions are specified in Section 90.629 and 90.631(f) of the FCC Rules and Regulations. They are too extensive to be duplicated here. A committee member or your APCO frequency advisor can provide additional guidance. If you are seeking slow growth, place an (x) in this space. If not, leave this space blank.

6. If you system is for analog, voice only, place an (x) in this space. If not, leave this space blank.

7. If your system is intended for data transmission of information or a voice to data conversion system, place an (x) in this space. If not, leave this space blank.

8. Use a separate numbered line for each base station's geographical location. If your system will have more than (6) sites, add an additional addendum sheet using a photo copy of the chart and adding additional consecutive numbered lines. The number of sites must be consistent with your response to Item 2.

9. Starting with "A", list in consecutive letters those channels to be installed at each numbered site. Examples:

   A single channel system with one primary site and one back-up site:

Site	Channel
1	A
2	A

   A three channel system at a single site:

Site	Channel
1	A—B—C

   A five channel system. Two channels at one site and a single channel at three additional sites.

Site	Channel
1	A-B
2	C
3	D
4	E

10. Enter in degrees, minutes, and nearest second north.
11. Enter in degrees, minutes and the nearest second west.

12. Enter ground level in meters above mean sea level (AMSL).

13. Enter the transmitter output in watts.

14. Enter effective radiated power (ERP) in watts.

15. Enter the distance in feet from the ground to the top of the antenna.

16. Enter the gain of the antenna from the manufacturer's specification sheet.

17. Enter the angle in degrees that the antenna is tilted from the vertical plane. If none, enter 0.

18. If a non-directional antenna will be used, enter 360 degrees. If a directional antenna will be used, show the compass point, to the nearest degree, the direction of the main power lobe.

19. List all agencies that will use the completed system.

20. For each user agency, indicate the number of each equipment type that will be used when the new system is completed.

21. List all frequencies that will be returned for use by other agencies when the new system is completed.

22. List all frequencies that will not be returned.

23. List the intercommunication requirements of your dispatch center.

24. System Justification – explain why you require this spectrum.

25. Implementation Time Table – explain the proposed implementation schedule of your required system.

26. Comments in this space should be limited to any necessary explanation required for items one(1) through twenty (20). Detailed comments are called for in the supplemental information request in Section B of this application.

27. Provide the name and telephone number of the person who prepared this application. It may be used by the Committee to resolve any question concerning the application or to seek additional information.

28. In compliance with Section 1.913 of FCC Rules and Regulations, the application must be signed by the duly elected or appointed official who is authorized to do so under the laws of the applicable jurisdiction.

FCC REGION 19 APPLICATION
806-810 MHz CHANNELS
DETAILED INFORMATION
(Section B)

Note: Response to all questions is mandatory. Additional pages may be attached.

(1) Attach topographical map(s) with information described in the application instructions.

(2) Provide detailed information and supporting documentation showing the budget commitments for the completion of the system within the time allowed for the conventional or slow growth indicated. (Committee action cannot be based upon speculation so a reasonable showing of the expectation of these funds must be shown).

(3) Item #21 of the application lists the frequencies that will be returned when the new system is completed. Explain how these frequencies are currently being used.

(4) Item #22 of the application lists the frequencies that will not be returned by the users of the new system. Explain the intended use of these frequencies.

(5) Explain how the users of the new system will intercommunicate with other public safety agencies operating in lower band during emergency or disaster situations.

(6) Explain the needs of your agency for a new system in the 806 MHz spectrum and why those needs cannot be served by Special Mobile Radio Service (SMR), cellular telephone, or other existing communication resources. Explain the deficiencies of your existing system which caused you to apply for the new spectrum.

(7) Provide a time schedule of all significant implementation phases including funding, licensing, initial operation, channel loading, and completion of your system.

DETAILED INFORMATION REQUIRED – SECTION B

The Planning Committee will evaluate a request for channels based upon the information in the application form and the detailed information provided in response to the following:

1. The area of coverage of the system must be limited to the user's area of responsibility plus three (3) additional miles. Provide topographical map(s) showing the 40 Dbμ contour, which shall be of sufficient quality and detail to ensure that the Regional Plan Update Committee can evaluate the applicant's intended area of coverage. Applicant provided maps shall, at a minimum, show the political boundaries of the applying organization, as well as the political boundaries of adjacent political entities. Any effected entity beyond those adjacent to the applicant will also be shown. The scale of the provided maps shall be such that sufficient map culture and detail are shown. If necessary, additional maps shall be presented to show the applicant's political boundaries in relationship to the state in which the applicant is located. Propagation plots shall be generated utilizing programs which are accepted as standards by the telecommunications community. Propagation plots/maps which are deficient and fail to meet the standard set forth in this paragraph will be rejected and the application will be returned to the applicant with an explanation of the deficiency. 40, 25 and 5 Dbμ contours required. See Attachment 1

2. Provide detailed information and supporting documentation showing the budget commitments for the completion of the system within the time allowed for the conventional or slow growth indicated. Committee action cannot be based upon speculation so a reasonable showing of the expectation of these funds must be shown, including documentation from the fiscally responsible individual of the jurisdiction.

3. Item 21 asks for the listing of frequencies that will be returned when the new system is completed. Explain how these are now used.

4. Item 22 asks for the listing of frequencies that will not be returned by the users of the new system. Explain the intended continued use of these channels.

5. Explain how the users of the new system will intercommunicate with other public safety agencies operating in lower bands during emergency or disaster situations.

6. Explain the needs of your agency for a new system in the 806 MHz spectrum, and why those needs cannot be served by Special Mobile Radio Service (SMR), cellular telephone, or other existing communication resources. Explain the deficiencies of your existing system which caused you to apply for the new spectrum.

7. Provide a time schedule of all significant implementation phases including: funding, licensing, initial operation, channel loading, and completion of your system. Failure to adhere to the submitted schedule upon licensing may have your licensed frequencies/channels to be returned to the FCC for non-compliance.

FCC REGION 19 FREQUENCY ADVISORS FOR EACH STATE

Connecticut
Mr. Jerry Zarwanski
Dept. of Public Safety
Office of Emergency Telecommunications
Middletown, CT 06457-8157
Phone (860) 685-8157

New Hampshire
Mr. James Kowalik
NH Department of Safety
10 Hazen Drive
Concord, NH 03305
Phone (603) 271-2421

Maine
Mr. Mark Poole
P.O. Box 398
Monmouth, ME 04259.
Phone (207)933-4592

Massachusetts/Rhode Island
Mr. James Warakois
2626 Centre Street
West Roxbury, MA 02132
Phone (617)343-4214

Vermont
Ms. Angela Bean
Vermont Dept. of Public Safety
409 U.S. Route 2
Montpelier, VT 05602
(802) 229-0882

RELEVANT FCC RULES AND REGULATIONS

The FCC Rules and Regulations quoted here were selected to provide a ready reference to issues relating to the Committee's application process and the subsequent license request. The original documents should be consulted for any additional information. The Association of Public Safety Communication Officials (APCO) frequency advisor for your state can also provide additional technical assistance. They are listed above.

Section 90.633(a) – "Conventional systems of communications will be authorized on the basis of minimal loading criteria of 70 mobile stations for each channel authorized."

Section 90.631(a) – "Trunked systems will be authorized on the basis of a loading criteria of 100 mobile stations per channel. For the purpose of determining compliance with trunked system loading requirements under this subpart, the term "mobile" station includes vehicle and portable mobile units and control stations."

Section 90.155(a) – "All stations authorized under this part, except as provided in paragraph (b) of this section and in Sections 90.629 and 90.631(f), must be placed in operations within eight (8) months from the date of grant or the authorization cancels automatically and must be returned to the Commission."

Section 90.155(b) – "For local government entities only, a period longer than eight months for placing a station in operation may be authorized by the Commission on a case by case basis, where the applicant submits a specific schedule for the completion of each portion of the entire system, along with a showing that the system has been approved and funded for implementation in accordance with that schedule."

Section 1.913 – "…applications, amendments, and related statements of fact filed on behalf of eligible governmental entities such as states and territories of the United States, their political subdivisions, the District of Columbia and units of local government, including unincorporated municipalities, must be signed by a duly elected or appointed official who is authorized to do so under the laws of the applicable jurisdiction."

INTERNATIONAL COMMON CHANNELS

The National and Regional plans require the nationwide establishment of five (5) common channels for interagency communications in times of disasters and mutual aid situations. To achieve the objective, each recipient of an 806 MHz license must comply with the rules for common channel utilization per FCC Docket No. 90.53 as indicated on pages 11-14 of this application.
The area of coverage for the common channel system must be equal to the coverage achieved by the entity's own system. If it is technically feasible without additional cost, the Committee may require that the area of coverage be extended.

AMENDMENT TO THE REGIONAL PUBLIC SAFETY PLAN
DOCKET NO. 90-53, NEW ENGLAND AREA
REGION 19 PLAN

Common Channel Usage Policy
(Subject to change to 806 MHz band)

1. As used in this document, "Agency" refers to an FCC Licensee.

2. Shared use of channels by multiple agencies dictate that the least amount of power and minimum coverage to achieve spectrum efficiency by the guiding principles.

3. Any agency, or joint agencies, authorized under Part 90 of the FCC Rules and Regulations to operate five or more 821-824/866-869 MHz channels is required for each multiple of five to implement the National Mutual Aid (Common) Calling and Tactical Channels in accordance with the Regional Plan, i.e., Calling Channel, tone remote controlled, repeater/base station with talk-around receive and a Tactical Channel, four channel frequency selectable tone remote controlled, repeater/base station with talk-around receive.

4. In order to accomplish the proper use of the Common and Tactical Channels, the agency must also implement the Calling Channel, or be joined into a monitoring method of the Calling Channel, within its area, for the express Purpose of 1) to respond to non-routine inquiries as defined in paragraph 7 below, or 2) turning on its Tactical Channel upon the request of a duly authorized agent of the agency requiring its use.

5. It shall be the responsibility of every licensee of a Calling or Tactical Channel to keep its repeater function disabled at all times other than when assigned for conducting a given mission where wide-area, repeater operation is necessary. The Calling Channel shall be monitored at all times by the licensee and shall be used only to handle brief, itinerant traffic and requests for use of a Tactical Channel for an authorized, appropriate mission. The use of "talk-around" shall be preferred over repeater use where range limitations permit.

6. Unless incidental to an approved multi-agency mission, the use of any of the Common channels, whether repeated or talk-around, for intra-agency communications, is prohibited. Use of any of the Common Channels, whether repeated or talk-around, for routine or trivial uses, even if inter-agency, is also prohibited.

7. A given mission for Common Channel operation shall be defined as "use for non-routine communications by agencies requiring interoperability for inter-agency activities only." Routine is defined as "a normal established method of message exchanging, i.e. frequent or regular use."

8. Where one or more agencies within, or subject to, a given governmental entity below the state level has an aggregate total of five or more channels of 821-824/866-869 MHz of spectrum, that entity must bear the responsibility to implement and maintain the Calling and Tactical Channels within the area of operation of those systems.

9. As established by mutual understanding between the United States and Canada, the (International) Common Channels shall be named as follows:

Name	Mobile TX	Base TX	CTCSS
ICALL	821.0125	866.0125	156.7 Hz
ICALL Talk-Around	866.0125	866.0125	"
ITAC-1	821.5125	866.5125	"
ITAC-1 Talk-Around	866.5125	866.5125	"
ITAC-2	822.0125	867.0125	"
ITAC-2 Talk-Around	867.0125	867.0125	"
ITAC-3	822.5125	867.5125	"
ITAC-3 Talk-Around	867.5125	867.5125	"
ITAC-4	823-0125	868.0125	"
ITAC-4 Talk-Around	868-0125	868.0125	"

Primary/Secondary Tactical Channel Assignments (ITAC Channels)
FCC Region 19 (Revised 10-96)

State	County	Assignment	
		Primary	Secondary
Connecticut	Hartford	4	1
	Tolland	3	2
	Windham	1	4
	New London	2	3
Massachusetts	Berkshire	3	2
	Franklin	1	4
	Hampshire	4	1
	Hampden	1	4
	Worcester	2	3
	Suffolk	3	2
	Middlesex	1	4
	Norfolk	3	2
	Essex	2	3
	Plymouth	3	2 (North)
	Plymouth	2	3 (South)
	Barnstable	4	1
	Dukes	4	1
Rhode Island	Providence	4	1
	Kent	3	2
	Bristol	1	4 (North)
	Bristol	2	3 (South)
	Newport	2	3
	Washington	1	4
Maine	Aroostook	3	2
	Piscataquis	2	3
	Somerset	4	1
	Franklin	3	2
	Penobscot	4	1
	Washington	1	4
	Hancock	2	3
	Waldo	3	2
	Knox	4	1
	Lincoln	4	1
	Sagadaloc	4	1
	Cumberland	1	4
	York	3	2
	Oxford	4	1
	Kennebec	1	4
New Hampshire	Belknap	1	4
	Carroll	2	3
	Cheshire	4	1
	Coos	1	4
	Grafton	4	1
	Hillsborough	1	4
	Merrimack	3	2
	Rockingham	2	3
	Stafford	4	1
	Sullivan	1	4
Vermont	Franklin	4	1
	Orleans	2	3
	Essex	4	1
	Caledonia	3	2
	Lamoille	1	4
	Chittenden	3	2
	Washington	2	3
	Addison	1	4
	Orange	4	1
	Rutland	2	3
	Windsor	3	2
	Bennington	4	1
	Windham	2	3

Attachment 1

CURRENT FREQUENCY ASSIGNMENT METHODOLOGY

New England Region 19 technical committee members will be responsible for channel assignment(s) in the 806/851-854MHz spectrum band. Applicant channel assignment(s) will be based on the technical parameters identified in a completed FCC region 19 Application 806-810MHz Channels (Appendix J). Spectrum Watch[1], Radiosoft Comstudy[2] Version 2.2 (APCO provided version) will be utilized to identify prospective channel(s). The applicants will be given their jurisdictional boundaries, plus 5Km to 8Km, to ensure adequate signal strength. Adequate interference protection must be taken into design consideration to protect co-channel and adjacent channel licensees.

Frequency Selection and Modeling Tools

SpectrumWatch is a FCC authorized, web base database for the selection of land mobile licenses. Spectrum Watch enables frequency sorts based on existing transmitters/mobiles latitude and longitude to prospective frequency(s) latitude and longitude and identifies in a database format the licensed entity(s) parameters (distance, Lat. And Long., station class, power, ERP, ect.). Prospective frequencies are evaluated based on the application that was submitted to Region 19. Frequencies with a maximum offset of 12.5 KHz will be considered for assignment. Once a prospective frequency(s) is identified, co-channel and adjacent channel licensee's site parameters are collected and exported to Comstudy.

Comstudy software is a windows-base program providing radio frequency propagation and interference predictions. Comstudy enables the technical committee of Region 19 the ability to virtually engineer, radio tower sites and antenna patterns to anticipate the potential for harmful RF (radio frequency) interference to co and adjacent incumbents when selecting prospective frequency(s) for an applicant. Region 19 utilizes the following parameters for propagation prediction:

Model: Okumura-Hata
Area Type: Open
Contour: Matrix Based
Contour Type: Median
Land Use Attenuation: Does not apply
Mobile Receiver Height: 1.5m above ground elevation
Size of FS Matrix Cell: 30" 1Km (size by area)

[1]SpectrumWatch, a Division of SiteSafe, Inc.
[2]RadioSoft®, A Division of Mountain Tower Ltd., Version 2.2, US Easter Terrain and Mapping

The Region 19 technical committee members evaluate frequency(s) based on the 40dBu V/m, 25dBu V/m and 5dBu V/m contours for each proposed site. The 40dBu V/m service contour will extend an additional 5Km to 8Km beyond the applicant's jurisdictional boundaries to ensure sufficient RF coverage. The following data is taken into account when calculating the contours:

- AGL (Above Ground Elevation)
- AMSL (Above Mean Sea Level)
- ERP (Effective Radiated Power)
- Longitude and Latitude in NAD83
- Antenna specifications[3]
- HAAT (Height Above Average Terrain)
- Terrain Data
- Analog/Digital/Trunked
- Modulation Emission

Modulation Type	Usage Type
FM UHF/800 +/-5kHz	800 Wideband Mode
FM 821 +/-4 kHz	NPSPAC/Analog
FM 821 DVP	NPSPAC/Digital
C4FMall =/-2.8kHz	Project-25
EDCAS @ 12.5 all	Ericsson Narrowband

Co-channel Analysis

Current licensees within a radius of 150Km of the proposed site(s) will be considered in the co-channel interference evaluation. The proposed site(s) calculated 5dBu V/m contour must not overlap a co-channel incumbent's 40dBu V/m service contour within their licensed jurisdictional area or area of operations. Frequency(s) are evaluated on a site by site basis.

[1]The proposed site(s) antenna specification must include vertical and horizontal beamwidth, make and model, gain, antenna height and azimuth.

Adjacent Channel Analysis

Current licensees within a radius of 60Km of the proposed site(s) will be considered in the adjacent channel interference evaluation. The proposed site(s) calculated 25dBu V/m contour must not overlap an adjacent channel incumbent's 40dBu V/m service contour within their licensed jurisdictional area or area of operations. Upper and lower adjacent channels incumbents with 12.5 KHz offset will be subject to an interference study. Frequency(s) are evaluated on a site by site basis. Adjacent channel analysis may not be required based on the RF bandwidth of the channel under analysis.

Approval

New England Region 19 committee members will provide to the Region 19 committee its selection of frequencies for submission to the FCC on behalf of the applicant.