

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of:)	
)	
Amendment of Part 90 of the Commission's Rules)	WP Docket No. 07-100
)	
Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band)	PS Docket No. 06-229
)	
Service Rules for the 698-746, 747-762 and 777-792 MHz Bands)	WT Docket No. 06-150
)	

**COMMENTS OF
THE NATIONAL PUBLIC SAFETY TELECOMMUNICATIONS COUNCIL**

The National Public Safety Telecommunications Council (NPSTC) submits these Comments in response to the Commission's Fifth Further Notice of Proposed Rulemaking in the above-captioned proceeding concerning proposed changes to the rules in the public safety 4.9 GHz band.¹ In these comments, NPSTC clarifies current uses of the 4.9 GHz band and encourages the Commission to support development of a national plan which NPSTC volunteers to develop in collaboration with established frequency advisory committees and regional planning committees (RPCs). NPSTC believes such a national plan would provide the proper foundation to make more efficient use of the 4.9 GHz band in a manner that best serves the needs of public safety and other critical users. In its comments, NPSTC also sets forth the type of elements that would need to be addressed as part of a national plan for the 4.9 GHz band.

¹Fourth Report and Order and Fifth Further Notice of Proposed Rulemaking, FCC 12-61, released June 13, 2012.

The National Public Safety Telecommunications Council

The National Public Safety Telecommunications Council is a federation of public safety organizations whose mission is to improve public safety communications and interoperability through collaborative leadership. NPSTC pursues the role of resource and advocate for public safety organizations in the United States on matters relating to public safety telecommunications. NPSTC has promoted implementation of the Public Safety Wireless Advisory Committee (PSWAC) and the 700 MHz Public Safety National Coordination Committee (NCC) recommendations. NPSTC explores technologies and public policy involving public safety telecommunications, analyzes the ramifications of particular issues and submits comments to governmental bodies with the objective of furthering public safety telecommunications worldwide. NPSTC serves as a standing forum for the exchange of ideas and information for effective public safety telecommunications.

The following 15 organizations participate in NPSTC:

- American Association of State Highway and Transportation Officials
- American Radio Relay League
- Association of Fish and Wildlife Agencies
- Association of Public-Safety Communications Officials-International
- Forestry Conservation Communications Association
- International Association of Chiefs of Police
- International Association of Emergency Managers
- International Association of Fire Chiefs
- International Municipal Signal Association
- National Association of State Chief Information Officers
- National Association of State Emergency Medical Services Officials
- National Association of State Foresters
- National Association of State Technology Directors
- National Emergency Number Association
- National Sheriffs' Association

Several federal agencies are liaison members of NPSTC. These include the Department of Homeland Security (the Federal Emergency Management Agency, the Office of Emergency

Communications, the Office of Interoperability and Compatibility, and the SAFECOM Program; Department of Commerce (National Telecommunications and Information Administration); Department of the Interior; and the Department of Justice (National Institute of Justice, CommTech Program). In addition, Public Safety Europe is also a liaison member. NPSTC has relationships with associate members, the Telecommunications Industry Association, the Canadian Interoperability Technology Interest Group, the National Council of Statewide Interoperability Coordinators and the Utilities Telecom Council and the Alliance for Telecommunications Industry Solutions.

Background

In its Fifth Further Notice of Proposed Rulemaking (“Notice”) in this proceeding, the Commission indicates its belief that the 4.9 GHz band has “fallen short of its potential” and therefore has issued the Notice to re-evaluate its current policies in the 4.9 GHz band. The Notice proposes a number of changes to the rules the Commission believes can help spur efficient use of the band, and seeks comment on a range of questions to help evaluate the relative merits of various proposals and options in doing so.

These proposed changes and questions fall into the following overall key areas: 1) how current 4.9 GHz licensees use the spectrum; 2) frequency coordination; 3) eligibility; 4) potential use of the 4.9 GHz band to complement the planned public safety 700 MHz nationwide broadband network; 5) changes to the 4.9 GHz channel plan; 6) technical parameters such as power limits and antenna requirements; 7) aeronautical mobile use of the band; and 8) whether standards are needed promote interoperability; and 9) deployment reports.

NPSTC appreciates the Commission’s diligence in addressing these important questions. In the remainder of these comments, we address these key issues and recommend a plan to move forward.

NPSTC Comments

1. Current Usage of the 4.9 GHz Band

While not as heavily used as public safety mobile bands in the VHF, UHF, T-Band and 700/800 MHz spectrum where wide area coverage is possible, the 4.9 GHz band has been implemented in key areas to support the operational needs of public safety on a more localized basis. NPSTC examined Commission licensing statistics as of August 30, 2012 on a region-by-region basis. In other words, NPSTC took the FCC license info and characterized the statistics for each of the 55 planning regions in the U.S. NPSTC's analysis yielded the following summary information:

- Aggregating licensing statistics on a region-by-region basis, the 4.9 GHz band has 2530 licenses in total.
- Of the 2530 licenses, 560 licenses are for fixed operations
- These 560 fixed licenses represent 1706 transmitter sites
- Licensees with permanent fixed facilities are required to notify FCC when the system is constructed. To date, construction notifications have been filed for 75% of the fixed transmitter sites (1278 of 1706 fixed sites). Some licensees have not yet reached a construction deadline.

In interpreting such data, it is important to note that under the existing Commission rules for 4.9 GHz, details on usage for some types of operations cannot be extracted from the license database. While fixed sites are required to be registered specifically in the database, hotspot and other base/mobile or temporary fixed operations are administered under a jurisdictional license that covers the entire band for the full geographical area of the applicant's jurisdiction. For those jurisdictional operations full information does not exist in the database and construction notification is not required under the rules.

The Commission requested information on how public safety uses the 4.9 GHz band. The band is used in a variety of scenarios to support public safety. For example, in region 51 (the Houston area), most of the licenses have registered sites as fixed links. Region 54 (Chicago area) uses the band extensively for video surveillance. In western states, deployable 4.9 GHz systems are used to support operations in addressing wildfires. While improved frequency coordination can support additional use in 4.9 GHz band, it is important to recognize that beneficial uses are already occurring across the country and these uses must be considered in any plan to revise the rules.

2. Frequency Coordination

NPSTC believes that improved frequency coordination is one of the most significant steps that can be taken to develop policies that enable more efficient use in the 4.9 GHz band. Accordingly, we encourage the Commission to support development of a 4.9 GHz national plan which NPSTC volunteers to develop in collaboration with established frequency advisory committees, regional planning committees (RPCs) and the public safety community. In conjunction with the development of this plan, NPSTC recommends that a 4.9 GHz license database reside with the Commission. Just as it does in other bands, an FCC-maintained database can be accessed by frequency advisory committees, applicants and their equipment suppliers and consultants to form the basis for frequency selection and coordination in the band. NPSTC also notes that once the plan is developed, existing 4.9 GHz licensees would need to submit additional information regarding their operations and comply with the provisions of the national plan. This would be a necessary step to ensure protection of these important operations. The sooner the additional information is provided the faster these operations can be protected in the frequency coordination process. However, NPSTC is aware that if any changes are needed to comply with the national plan, some reasonable period of time, e.g., up to one year, may be required to do so.

Given the issues that need to be deliberated as part of such a national plan and the multiple stakeholders involved, NPSTC recommends the Commission provide a six month period of time for

the draft plan to be developed, followed by an appropriate period of time, e.g., 3 months, to seek and resolve public comments and finalize the plan. The following provides NPSTC's rationale and additional detail regarding these recommendations.

The current rules for the 4.9 GHz band incorporate a requirement that licensees cooperate in the selection and use of channels, but beyond that, do not impose any specific coordination requirements. Regional planning was also incorporated into the rules as an option, in contrast to rules at 700 MHz and 800 MHz where regional planning is a requirement. To date, nine of the fifty-five regions have developed a regional plan at 4.9 GHz.

As noted in the previous section of these comments, the 4.9 GHz band supports a variety of uses, some of which are licensed on a jurisdictional basis. Under that approach, a public safety applicant receives a license that covers the entire band for the full geographical area of its jurisdiction. For those operations full information does not exist in the database.

NPSTC analysis of the FCC license database for the 4.9 GHz band indicates that approximately 78% of the licenses in the 4.9 GHz band fall into this jurisdictional category. The original basis for the jurisdictional licensing structure in which each applicant received authority for the entire band was to provide public safety flexibility to accommodate 4.9 GHz usage as needed at an incident scene or at pre-planned but temporary events without the need to get specific FCC authority to use certain channels in certain locations each time such an event occurs. The structure was also applied to enable rapid deployment of more permanent hotspot systems.

While the original intent of that approach was sound, NPSTC believes the results have also unintentionally contributed to the Commission's view that the 4.9 GHz band has fallen short of its potential. Also, some in public safety entities view the current situation at 4.9 GHz to be too close to an "unlicensed" approach. Accordingly, they lack confidence in investing in the deployment of 4.9 GHz systems, for fear that they will not be protected sufficiently against interference from nearby systems deployed in the future.

NPSTC believes a national plan framework incorporating provisions for frequency coordination would provide a greater level of comfort in the public safety community regarding the viability of the band to support short range mission critical operations. Therefore, NPSTC views the investment in time and resources to lead the development of such a plan, in collaboration with frequency coordinators and regional planning committees, as time that will be well spent. Therefore, NPSTC encourages the Commission to endorse this approach. Ultimately, of course, the national plan would also need Commission approval and incorporation by reference into the rules so there is clarity regarding compatibility with the plan.

NPSTC views reaching decisions on the following key elements as part of the 4.9 GHz national plan development:

- An efficient and effective mechanism under which applicants' license requests are coordinated and processed. Development of this step at 4.9 GHz requires deliberating and deciding a clear and consistent set of steps to harness both frequency advisory committees' coordination tools and expertise and relevant local/regional knowledge from active regional planning committees (RPCs).

- As part of the process, established average processing times that frequency advisory committees strive to meet or exceed in other bands need to be considered at 4.9 GHz. For example, addition of RPC input to the overall frequency coordination process would be beneficial but is likely to require some adjustment to those processing time guidelines for the 4.9 GHz band. This issue has been discussed among NPSTC, frequency advisory committees and some RPCs on a preliminary basis, and additional deliberations are needed to help ensure a workable, effective and efficient process.

- Provisions for sharing of application information across both multiple frequency advisory committees and RPCs in the region, or where applicable, in an adjacent region. Currently in other bands, frequency advisory committees share such information with each other. Provisions would need to be made for 4.9 GHz to expand the information sharing to and from RPCs in an efficient and timely manner.

- Technical requirements to be applied. As the Commission recognized in its NPRM, NPSTC previously opposed application of full Part 101 procedures to the 4.9 GHz bands given the cost and complexity of that process, together with the variety of types of operations at 4.9 GHz. NPSTC remains concerned that application of full Part 101 procedures could add undue complexity and cost for public safety licensees. However, preliminary discussions with frequency advisory committees, RPCs and others in the public safety community indicate that the national plan needs to include decisions/guidelines on applying some of the technical

parameters from Part 101, e.g., power limits for short paths and/or more stringent antenna requirements in spectrum impacted areas.²

-Further, if more stringent antenna requirements were judged to be necessary in urban but not rural areas, the definition of rural areas and coordination procedures applied to put such an approach in place would need to be addressed as part of the national plan development.

-The “rules of the road” on how input from another coordinator or RPC relevant to the applicant’s proposed location of operation will be addressed expeditiously.

-The degree to which the national plan needs to incorporate any provisions for variations across regions to met public safety operational requirements.

In addition to the frequency coordination process, NPSTC believes the following issues raised by the Commission also have impact on development of a national plan. As addressed in the following sections decisions on some of these issues should be part of that plan development.

3. Eligibility

In the Notice, the Commission poses a number of questions concerning expanding the eligibility in the 4.9 GHz band. The Commission seeks comment on extending eligibility to commercial use on a secondary basis and on whether critical infrastructure industry (CII) entities, including utilities, should be eligible for licensing on a primary basis. As part of the Notice, the Commission did state its belief that “all primary uses of the 4.9 GHz band should remain limited to operations in support of public safety ...”³

NPSTC has concerns about opening the band to commercial use and we want an opportunity to more closely examine the issues in the context of developing a national plan before we finalize our position on commercial access. Opening the 4.9 GHz band to general commercial use, could impact the capacity available for public safety operations, set the stage for increased security problems and

² For example, Section 101.113(a) specifies a maximum power of +55dBw EIRP for spectrum in the 3.7 to 4.2 GHz band that needs to be examined further for applicability at 4.9 GHz. Also, Section 101.143 includes a formula to reduce power for short paths, and the applicability of that approach or some variation would be part of decisions NPSTC proposes in developing the national plan. Finally, there has been considerable discussion on the relative tradeoffs regarding the potential applicability of minimum antenna specifications to the 4.9 GHz band and a decision on the approach to use would be part of the national plan development.

³ Notice at paragraph 43.

further complicate the frequency coordination process. Therefore, before opening the band to commercial use, there would need to be development and testing of viable solutions to these issues to avoid any negative impact to public safety. At the same time, commercial licensees do already have a number of options in other spectrum bands to meet their needs.

Based on preliminary discussions, NPSTC does see value in providing access for other critical infrastructure uses that would be conducted in partnership with a public safety entity or entities. NPSTC recommends the specific conditions and rules applicable be decided as part of the national plan development. For example, use of the band to expeditiously shut of electric, gas or water lines as needed at an incident or to support restoration of critical services such as power, water and sanitation to citizens during a disaster or other event would be beneficial. If eligibility is broadened to include critical uses deployed in partnership with public safety, or for potential public/private partnerships in deploying the FirstNet network, the mechanism for effective and efficient frequency coordination addressed previously in these comments also would need to incorporate provisions relevant to that broadened eligibility.

4) Use of the 4.9 GHz Band to Complement the 700 MHz Public Safety Broadband Network

In the Notice, the Commission seeks comment on the use of the 4.9 GHz band for fixed, backhaul and mobile uses in support of the 700 MHz band public safety broadband network, on any appropriate changes to the rules and on FirstNet's eligibility to hold licenses in the 4.9 GHz band. NPSTC recognizes the need for backhaul to connect 700 MHz broadband sites and the benefit of spectrum to do so in areas that do not have adequate alternatives such as fiber or other appropriate connections to transmit sites. NPSTC also recognizes the potential for the 4.9 GHz band to provide supplemental capacity to the 700 MHz mobile network, particularly for localized applications where the 4.9 GHz band would serve as more efficient spectrum use. As part of developing a national plan, NPSTC would welcome discussions with FirstNet, especially on how best to prioritize where access to the 4.9 GHz band would be needed. As part of the plan development, NPSTC would need to strive

to meet multiple public safety needs relevant to the 4.9 GHz band, including those related to complementing the 700 MHz public safety broadband network. Therefore, key discussions and decisions that would need to be part of the plan development include whether there should be limits on the portion of available bandwidth assigned for any use, including but not limited to, the nationwide public safety broadband network to be implemented by FirstNet.

5) Changes to the Channel Plan

The Commission seeks comment on designating certain channels in the 4.9 GHz band for specific uses, such as fixed point-to-point or mobile operations. In general, NPSTC recommends that such designations be made a part of developing a national plan to provide as much clarity and commonality as possible for improved frequency coordination and public safety usage. As that discussion advances, NPSTC, in collaboration with frequency coordinators and RPCs will need to assess more fully whether the benefits of providing the option for any regional variations outweigh the benefits of defining any specific use types by channel on a strictly nationwide basis.

6) Technical Parameters

As noted above, the application of technical parameters for deployment would be part of decisions to be made as part of the National Plan development. These include primarily power and antenna parameters. However, NPSTC recognizes that during the course of the National Plan development, other issues might arise that need to be addressed.

7) Aeronautical Mobile Use of the Band

The use of low flying helicopters and aircraft provide a tool that some public safety entities deploy to help fight crime and/or capture suspects as part of the response to a crime that has occurred. Helicopters and small aircraft also are instrumental in fighting wildfires that can cover a wide geography and spread quickly as time passes. Further, helicopters serve a critical need in the emergency medical community for evacuating and/or transporting patients in critical condition.

One of the challenges public safety has always faced is a lack of spectrum to support video or high speed data operations involving these aeronautical tools. On occasion, public safety entities in some jurisdictions have “borrowed” an auxiliary broadcast channel on a temporary ad hoc basis from television stations to use in such operations. However, that is not an ideal solution as it often is not available. Furthermore, a portion of the auxiliary broadcast spectrum has been auctioned for commercial use, and therefore the potential option for public safety to “borrow” a channel may be even less likely.

NPSTC therefore views potential public safety aeronautical use at 4.9 GHz as beneficial, if appropriate steps can be taken to limit interference to ground-based 4.9 GHz operations. NPSTC envisions some approaches that may be helpful in that regard, for example, height limits for air-to-ground video feeds, bandwidth limits to ensure both aeronautical and ground-based operations could have access to the band, and steerable directional antennas on the aircraft for video feeds to remote receive sites. Additional deliberations and decisions on this issue should be part of the national plan development.

8) Whether Required Standards Should Be Adopted to Promote Interoperability

NPSTC supports interoperability across all public safety communications bands so that public safety users from neighboring jurisdictions can easily work together. The Project 25 standard has encouraged the development of regional systems that has increased interoperability. The 700 MHz public safety broadband network will incorporate a nationwide level of interoperability from the start, given the adoption of the LTE standard and a nationwide governance structure embodied in FirstNet.

However, no standard has been developed for 4.9 GHz. As recognized in the Notice, when the rules for the 4.9 GHz band were originally developed in 2003 and 2004, the variety of public safety services at 4.9 GHz did not lend themselves to standardization or interoperability, a situation which continues today. Yet despite the variety of uses of the band, NPSTC believes that having a standard would help to make 4.9 GHz networks and equipment more interchangeable, thereby

promoting interoperability among 4.9 GHz users and between 4.9 GHz and other networks, such as the nationwide 700 MHz broadband network. Further, as demonstrated in other spectrum bands where standards do exist, such as the Wi-Fi bands, standards have led to decreased costs. NPSTC suggests at this point that the Commission and the public safety community monitor the extent to which standards can emerge from efforts to develop the National Plan and then reevaluate future actions that may be necessary to ensure standards development. NPSTC believes that the issue should be addressed in the development by NPSTC, frequency advisors, and regional planning committees of a National Plan for 4.9 GHz.

9) Deployment Reports

The Commission seeks comment on whether to impose a periodic reporting requirement on 4.9 GHz licensees. NPSTC agrees that some additional step is needed to help ensure efficient use of the spectrum. However, rather than a reporting requirement at various point of progress as described in the Notice, NPSTC recommends application of a construction deadline to all 4.9 GHz licensees, with a corresponding construction reporting requirement.

As noted previously, the current rules impose a deadline only on fixed operations. Hotspot, temporary fixed and other operations have no requirement for construction reporting. NPSTC believes that one year construction deadline and corresponding reporting of construction would be less burdensome and have the same benefit. Given implementation of a specific frequency coordination requirement as part of a national plan, those licensees who fail to construct by the deadline would not receive protection from future applicants.

Conclusion

In summary, the 4.9 GHz band currently supports a variety of operations beneficial to public safety, but use of the band could be significantly enhanced by implementing more specific frequency coordination requirements. NPSTC encourages the Commission to support development of a

national plan, which NPSTC volunteers to develop, in collaboration with established frequency advisory committees and regional planning committees (RPCs). NPSTC believes such a national plan would provide the proper foundation to make more efficient use of the 4.9 GHz band in a manner that best serves the needs of public safety and other critical users. Many of the elements discussed in the Fifth Further Notice of Proposed Rulemaking should be decided as part of the development of this National Plan.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Ralph A. Haller", with a long horizontal flourish extending to the right.

Ralph A. Haller, Chairman

National Public Safety Telecommunications Council
8191 Southpark Lane, Suite 205
Littleton, Colorado 80120-4641
866-807-4755

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