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

In the Matter of	)	
	)	
Creation of a Spectrum Sharing Innovative Test-Bed	)	ET Docket No. 06-89
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COMMENTS OF THE NATIONAL PUBLIC SAFETY TELECOMMUNICATIONS COUNCIL

The National Public Safety Telecommunications Council (NPSTC) submits these Comments in response to the Commission's *Public Notice* addressing methods for sharing spectrum between federal and non federal users.[1] NPSTC recommends that initial sharing opportunities be grounded on pragmatic considerations reflecting compatibility of use, equipment and applications and be focused on the VHF and UHF bands.

The National Public Safety Telecommunications Council

NPSTC serves both as a resource and advocate for public safety organizations in the United States on matters relating to public safety telecommunications. NPSTC is a federation of public safety organizations dedicated to encouraging and facilitating, through its collective voice, the 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 agencies, analyzes the ramifications of particular issues, and submits comments to governmental bodies with the

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[1] *Public Notice*, Creation of a Spectrum Sharing Innovative Test Bed, ET Docket No. 06-89, FCC 06-77 (June 8, 2006)

objective of furthering public safety communications worldwide. NPSTC serves as a standing forum for the exchange of ideas and information for effective public safety telecommunications. The following 13 organizations participate in NPSTC:

American Association of State Highway and Transportation Officials

American Radio Relay League

American Red Cross

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 Association of Fish and Wildlife Agencies

International Municipal Signal Association

National Association of State Emergency Medical Services Officials

National Association of State Telecommunications Directors

National Association of State Foresters

Several federal agencies are liaison members of NPSTC. These include the Department of Agriculture, Department of Homeland Security (SAFECOM Program and the Federal Emergency Management Agency), Department of Commerce (National Telecommunications and Information Administration), Department of the Interior, and the Department of Justice (National Institute of Justice, CommTech Program).

The Commission's Public Notice and the National Telecommunications and Information Administration Notice of Inquiry

The Commission and the National Telecommunications and Information Administration ("NTIA") seek to evaluate innovative methods for spectrum sharing among disparate users to enable more intensive use of the finite radio spectrum. The Public Notice issued by the Commission and the Notice of Inquiry commenced by NTIA seek to explore and promote the creation of test-beds where both federal and non-federal users can undertake one or more studies and experiments addressing spectrum sharing.[2] The Commission asks for comment in three areas: A) Goal and Scope of the Test-Bed program; B) Logistics to create and implement the Test-Bed program; and C) Conclusion and evaluation of the Test-Bed program.

A Test-Bed Should Initially be Based on Pragmatic Needs of the Users, the Resources Available and the Compatibility of Purpose and Technology

NPSTC believes that the potential for more effective sharing of spectrum between federal and non federal users will be greatest where it initially commences in an environment of similar purpose. It is under these circumstances where the technical parameters will be best understood and the compatibility of uses evaluated. Such a foundation will promote broadened and more challenging sharing environments that will encompass diverse and varied uses and technologies. Unless there is an initial embrace by both sectors so that each has a stake in the success of the initiative, spectrum sharing will meet resistance and continued delays.

NPSTC believes that the greatest initial prospect for effective sharing with the public safety service regulated by the Commission and entities under NTIA authority emanates from the VHF band. The VHF band is the overwhelming spectrum resource for local public safety agencies- emergency medical services, fire and law enforcement. It will remain vital because of

[2] A similar comment will be submitted in response to NTIA's *Notice of Inquiry*.

its propagation character, its universal embrace and the lack of realistic alternatives. It is an environment where a sharing arrangement can be readily envisioned as a positive benefit to operations at a reasonable cost. These attributes also apply in many respects to the many federal users of the VHF band.

NPSTC's analysis of high band VHF (150-170 MHz) supports its relevance to any sharing consideration. A combination of fair immunity from impulse noise and good propagation characteristics makes high band VHF the most popular band for general use. Large area, low density subscriber regions such as occurs in the western half of the country cannot support the number of sites per subscriber that higher frequency bands such as 800 MHz demand, making high band VHF much more practical. Much of the popularity of VHF high band is also related to the degree of embedded historical systems in the band. Multiple agencies and jurisdictions on this common band greatly reduce the technical difficulties associated with interoperability.[3]

Similarly, NPSTC believes that there are sharing opportunities in the UHF band. There are a number of large metropolitan areas where the UHF band is the prominent spectrum resource for public safety agencies. There are significant federal public safety operations that use the UHF band. As federal users do not operate in the 800 MHz band, nor are assigned an allocation in the 700 MHz band, the UHF band provides a tangible sharing opportunity.

NPSTC recommends that the federal users examine the VHF and UHF bands for compatibility with local and state public safety use in particular regions. There likely exist areas where a jurisdiction adjacent to a federal facility and the federal agency can conduct operations

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[3] Ron Haraseth, Director, Automatic Frequency Coordination, Association of Public Safety Communications Officials, International (APCO), *High Band VHF*, set forth on the Attachment to this Comment

sharing VHF or UHF without presenting interference challenges. At a minimum the important objective of promoting interoperable communications between federal and local authorities can be served. Both agencies typically coordinate and assist their respective public safety responsibilities. Similar relationships and opportunities exist along the border with Mexico and Canada.

Any analysis of possible test-bed circumstances should be flexible in terms of the amount of spectrum that can be shared, a rigid 10 MHz per operation will reduce the number of opportunities. What also must be comprehended are the limited resources of public safety agencies and that no central file of federal government licenses is publicly available to assist local agencies in obtaining the details to determine if sharing is possible.

NPSTC's pragmatic approach emanates from experience. In the Defense authorization legislation for fiscal year 2001, the Department of Defense (DoD) was asked to provide a technical report assessing the feasibility of sharing the 138-144 MHz band with public safety users. Congress directed the DoD, in cooperation with the Justice Department and the NTIA, to provide an engineering study with regard to spectrum sharing.[4]

On February 5, 2002, a DoD press release stated that it had identified ways sharing would be possible without interfering with DoD operations. The statement stated that the Department believed "it is possible to share portions of the 138-144 MHz band with public safety users on a limited, coordinated basis." DoD committed to work with the NTIA, state and local governments and first responders on a case-by-case basis to explore sharing the band for the common good.

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[4] House Report 106-945 - H.R. 5408, The Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001, Pub. Law 106-398 (October 30, 2000)

The release noted that large distance separations would be required to prevent co-channel and adjacent-channel interference between DoD equipment and potential state and local public safety systems, particularly in the case of DoD air-ground-air radios.[5] No details were provided. The classified study precluded any analysis by local public safety agencies. NPSTC is aware of no actions that flowed from the study.

Summary

NPSTC urges the Commission and NTIA to examine sharing opportunities between federal users and local and state public safety agencies that encompass the VHF and UHF bands. Initial opportunities should focus on compatible uses and technologies and evolve to more diverse formats and technologies.

Respectfully submitted,

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[5] http://www.defenselink.mil/releases/2002/b02052002_bt056-02.html

HIGH BAND VHF

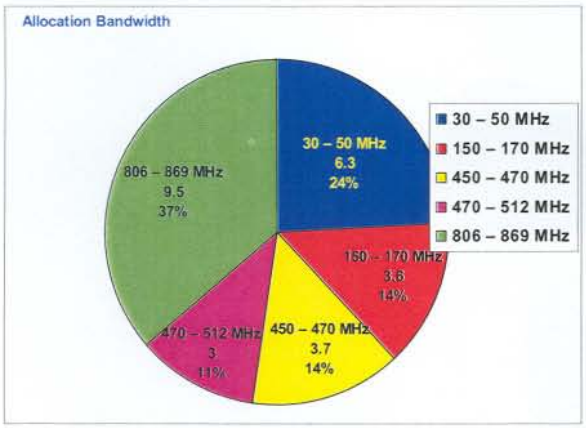
Ron Haraseth, Director, Automatic Frequency Coordination, Association of Public Safety Communications Officials, International (APCO)

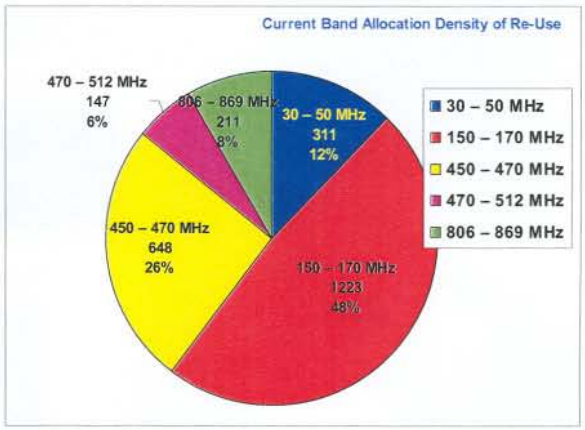
Commonly referred to as high band VHF, the 150-170 MHz band is slightly higher in frequency than the FM broadcast band (between 88 MHz and 108 MHz) A combination of fair immunity from impulse noise and good propagation characteristics make this the most popular band for general use. Several regions have analyzed the technical differences in propagation between high band VHF and 800 MHz for new large area systems. The results indicate as much as a three fold increase in the number of 800 MHz base station sites required to cover the same amount of terrain. While the reuse factor associated with the 800 MHz deployments allows more channel reuse and therefore more efficient frequency to subscriber statistics, large area, low density of subscriber regions such as occurs in the western half of the country can not support the number of 800 MHz sites per subscriber making high band VHF much more practical. Much of this popularity is also related to the degree of imbedded historical systems in this band. Multiple agencies and jurisdictions on a common band greatly reduce the technical difficulties associated with interoperability.

150 – 170 MHz
3.6 MHz allocated bandwidth
<u>352,280</u> Site licenses granted by the FCC

The overall congestion and licensing within this band extends to most locations in the country. Along with the congestion, the unpaired structure of the band plan makes assignment and coordination of this band highly problematic when trying to coordinate and assign interference free operation from other users. This band is subject to "Refarming" which adds narrowband channels in between existing channels, but the new channels are rarely assignable due to conflicts with incumbent operations on the wideband adjacent channels There are approximately 490 discrete high band VHF channels including the narrowband refarming channels. Coordination of the new offset channels is problematic based on the channel centers specified for high band VHF. While UHF rebanding is based on 25 KHz wide channels on 25

kHz spacing, VHF is also 25 kHz wide, but set on 15 kHz spacing meaning there is overlap with adjacent channels. This makes assigning a 12.5 kHz channel on one of the new 12.5 kHz centers offset from the primary channel by 7.5 kHz difficult where the 25 kHz assignments are saturated. Based on FCC license statistics, virtually the entire country has some level of saturation.





High band VHF accounts for 14% of the FCC allocated public safety mobile radio bandwidth, yet, its popularity and imbedded presence accounts for 48% of all licensed use when compared to the other common bands. This statistic is interesting as it points out the popularity and demographics of the entire public safety land mobile market. It also indicates that the majority of systems deployed are minimal advanced systems as compared to the type of systems deployed in 800 MHz (trunking type systems). Essentially 3/4s of all public safety users are operating in VHF and UHF bands employing less sophisticated radio systems and would have the most to gain from emphasis on promoting reform of spectrum policy associated with high band spectrum.