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

In the Matter of	)	
	)	WP Docket No. 07-100
National Public Safety	)	
Telecommunications Council's 4.9GHz	)	PS Docket No. 06-229
National Plan Recommendations Final	)	
Report	)	
	)	WT Docket No. 06-150

REPLY COMMENTS OF THE CITY OF NEW YORK

The City of New York ("the City") respectfully submits these Reply Comments in response to the Public Safety and Homeland Security Bureau's public notice (DA 13-2096) and Comments filed to date regarding the National Public Safety Telecommunication Council's 4.9 GHz National Plan Recommendations Final Report ("NPSTC Final Report") in the above referenced proceeding.[1] The City appreciates this opportunity to express its opinion on this important issue which affects the City's public safety communication infrastructure.

I. INTRODUCTION

The City of New York fully supports the positions expressed in Comments filed by Regional Planning Committee 8 ("RPC 8"). The City also supports the Comments filed by King County Washington and the City of Seattle Washington regarding the National Public Safety Telecommunication Council's ("NPSTC") 4.9 GHz National Plan as filed with the Commission. Furthermore, the City of New York objects to several aspects of the NPSTC 4.9 GHz National Plan.

The New York City Police Department ("NYPD") has installed numerous video links which utilize the 4.9 GHz dedicated to public safety spectrum. Other New York City agencies, as well as the Port Authority of New York and New Jersey ("Port Authority") similarly have invested

[1] Public Safety and Homeland Security Bureau Seeks Comment on National Public Safety Telecommunications Council's 4.9 GHz National Plan Recommendations Final Report

considerable time, effort and funds to install video surveillance cameras that rely upon the 4.9 GHz public safety spectrum to enhance public safety and anti-crime measures within the City of New York. In addition to video applications, New York City agencies including the NYPD utilize 4.9 GHz spectrum for hotspots, and for backhaul applications.

II. BACKGROUND

In 2002, the Commission allocated 50 MHz of spectrum in the 4.9 GHZ band, specifically 4940 – 4990 MHz, for fixed and mobile wireless services, and designated this band for use by public safety entities.[2] In 2012, the Commission issued a subsequent document, the Fourth Report and Order and Fifth Further Notice of Proposed Rulemaking regarding the licensing and use of the 4.9 GHz spectrum.[3]

On October 24, 2013, in response to the Commission's request for comments, NPSTC submitted a report and proposed a 4.9 GHz National Plan that recommended changes to the use of the 4.9 GHz spectrum, including a modified band plan and revised licensing procedures and eligibility requirements for primary users.[4]

The City currently uses the 4.9 GHz spectrum for its intended purpose, in accordance with existing FCC Rules. Other public safety entities operating within the City such as NYC Transit ("Transit") and the Port Authority also utilize 4.9 GHz spectrum in support of public safety within their respective operations. The ICTAP Frequency Mapping Tool reveals 275 licensed public safety fixed transmitter sites within New York City.[5]

---

[2] In the Matter of the 4.9 GHz Band transferred from Federal Government Use, WT Docket No. 00 – 32: Second Report and Order and Further Notice of Proposed Rulemaking, released February 27, 2002 and Memorandum Opinion and Order, released May 2, 2003.

[3] WP Docket No. 07-100, PS Docket No. 06-229 and WT Docket No. 06-150, released June 13, 2012.

[4] See NPSTC 4.9 GHz National Plan Recommendations, Final Report, filed with the Commission and available at http://npstc.org/

[5] Data was obtained from the ICTAP website using the frequency mapping tool and specifying PA as the radio service code. See http://publicsafetytools.info Data is valid as of December 1, 2013.

The NYPD utilizes 4.9 GHz to support video monitoring operations at numerous locations throughout the City. In addition, NYPD has installed fixed 4.9 GHz. hotspots at critical locations throughout the City in support of NYPD patrol mobile data operations. These hotspots operate in conjunction with the New York City Wireless network (NYCWiN), providing macro network offload at these critical locations. The New York City Department of Information Technology and Telecommunications (DOITT) utilizes 4.9 GHz public safety spectrum for backhaul in support of their land mobile radio networks and mobile deployable assets supporting NYCWiN and disaster recovery operations. The Port Authority uses 4.9 GHz spectrum in support of security operations at their facilities within NYC including the World Trade Center site, LaGuardia airport and John F. Kennedy airport.

III. NEW YORK CITY OBJECTIONS TO THE NPSTC NATIONAL PLAN

1. The NPSTC Plan Undermines Local Control

The Commission established Regional Planning Committees to allow local control and flexibility. Establishing nationwide rules that do not address local needs is counterproductive and undermines the RPCs. New York City recognizes that each region is unique and that each RPC is best qualified to efficiently manage the spectrum under its control in the best interest of the region.

Additionally, the limited range propagation characteristics of the 4.9 GHz band lends the band to local rather than national control, as the potential interference between regions is minimal. It is unnecessary to adapt more restrictive nationwide regulations that may appeal to certain regions but limit flexibility in other regions. If the NPSTC Plan were adapted as proposed, cities such as New York and Seattle that have deployed systems in good faith and in compliance with existing rules would be forced to reconfigure their existing 4.9 GHz operations at great expense.

The NPSTC 4.9 GHz National Plan Recommendations, Final Report, Executive Summary states in part that:

> *"There is also anecdotal information indicating that some public safety users are deploying the 4.9 GHz. band without a license. These users apparently are confusing the 4.9 GHz band with the nearby and similar 5 GHz unlicensed band. The varied uses and*

lack of license structure all point to the need to modify the rules and bring more structure to the band."[6]

Contrary to this reasoning, the City contends that if public safety users are confused, perhaps education regarding existing rules is a more appropriate remedy than changing the rules.

If public safety users are misinterpreting existing rules by deploying in the 4.9 GHz band without a license, what assurance can NPSTC provide that they will abide by new rules? The various uses of the 4.9 GHz band within Region 8 comply with the spirit of the Commission's desired intent to allow robust and efficient use of the spectrum. The structure inherently provides the flexibility needed by each region to build and design for their unique needs. Adding restrictions and narrowing the scope of potential uses will serve only to limit the potential applications and thus reduce operational and spectrum efficiency.

In Regions that have not utilized the 4.9 GHz Public Safety spectrum resource, the concerns of early design processes may be more in line with the NPSTC proposal recommendations, but it is speculative to anticipate that other regions may need such tighter structure because of the potential that new issues may arise. Regardless, Region 8 has managed to act as a clearinghouse for any issues by its members and has been open to concerns and suggestions. The members of Region 8 have been able to utilize the band while maintaining good faith relationships with each other.

The NPSTC 4.9 GHz National Plan Recommendations, Final Report, NPSTC states in part that:

"Some public safety agencies even hesitate to use the 4.9 GHz band because they view the structure to be too close to that of an unlicensed band and are concerned they will receive interference".[7]

Perhaps, there is a misunderstanding of the structure in place that requires some education within certain regional planning committees rather than nationwide rules changes.

---

[6] See NPSTC 4.9 GHz National Plan Recommendations, Final Report, page2, Executive Summary, third paragraph, third and fourth sentences; available at http://NPSTC.org

[7] See NPSTC 4.9 GHz National Plan Recommendations, Final Report, page3, Background, third paragraph, last sentence; available at http://NPSTC.org

The City has abided by the regulatory structure of the 4.9 GHz band in good faith, and has acted to build out its systems knowing and understanding that it had the full authority by the issuance of its licenses by the Commission. Modifying the rules as proposed by NPSTC would serve to set back its operable and necessary public safety systems thus breaking the implied promise of authorization.

2. The NPSTC Plan Undermines Spectrum Efficiency

Spectrum utilization is enhanced by allowing regions to determine what works best within their region. Denying public safety entities within one region access to parts of the band that they currently use simply because another region uses that portion of the band for another application is both operationally and spectrally inefficient. In broadband wireless networks spectrum efficiency is gained by aggregation not fragmentation. Application specific band fragmentation mandated on a nationwide scale, as recommended by NPSTC, undermines both spectrum efficiency and local control. Adaption of a national band plan to designate a portion of the 4.9 GHz band for air mobile use, for example, would create a situation where that portion of the spectrum could effectively be inaccessible for certain localities which have critical needs for the spectrum *other than* for air mobile use. Thus, a national mandate to use the spectrum in this way would be inefficient. Regional coordination, alternatively, maximizes spectrum use for localities which have varying needs and varying existing resources.

The City of New York is not alone in this opinion as illustrated below.

> *"…The City of Seattle is demonstrating that there is much benefit to the 4.9 GHz spectrum as it exists today for use in voice, data and video sharing. The NPSTC proposal would scale back the bandwidth available on the 4.9 GHz spectrum and will push back regions like Seattle and King County who are on the cusp of taking full advantage of its bandwidth, security and reliability."*[8]

[8] See Comments of King County, Washington and the City of Seattle, Washington, page 4, filed in response to public notice DA 13-2246, regarding the NPSTC 4.9GHz National Plan, under Dockets WP 07-100, PS 06-229 and WT 06-150; available at http://fcc.gov .

"The City of Seattle uses 4.9 GHz for the transport of video, which requires 20MHz channels to provide the necessary throughput. The (proposed) channels limitations would not be sufficient for this use. "[9]

"Significant amount of planning and design has gone into current network deployments in RPC8 that utilize all 50 MHz of spectrum under the current rules. Any deviation or modification to the current plan that necessitates any changes to frequencies and bandwidths will incur un-forecasted technical, operational and financial changes. Decreased throughput, redundancy, and resiliency will all be affected. Coexistence of current governmental systems re-banded into a condensed portion of the band will not be feasible. 4.9 GHz. spectrum is allocated to governmental entities. No changes to the current eligibility requirements to access this spectrum should be mandated.[10]

3. **The NPSTC Plan Would be Disruptive to Existing Public Safety Operations**

The NPSTC Plan if implemented would require a massive reconfiguration of existing 4.9 GHz networks, disrupting public safety operations for an extended period of time with little or no benefit. In this regard, New York City fully supports the position of RPC8 as expressed below in their Comments.

"Unless reconsidered, requiring public safety to reband the 4.9 GHz spectrum prematurely will cause immeasurable harm to public safety communications and is not in the public's best interest. The potential costs as well as the issues related to rebanding in the 4.9 GHz spectrum far exceed any perceived benefit. Accepting the NPSTC proposal creates unacceptable risks to emergency response. The fact remains, (that) forcing all existing applications onto even narrower channels will create an unstable situation which will immediately impact current network capabilities. Rebanding in any form requires years of planning, industry development and testing both on and off the field

[9] See Comments of King County, Washington and the City of Seattle, Washington, page 5, filed in response to public notice DA 13-2246, regarding the NPSTC 4.9 GHz National Plan, under Dockets WP 07-100, PS 06-229 and WT 06-150; available at http://fcc.gov .

[10] See "Comments on Behalf Of Regional Planning Committee 8", Executive Summary, page 4, filed in response to public notice DA 13-2246, regarding the NPSTC 4.9GHz National Plan, under Dockets WP 07-100, PS 06-229 and WT 06-150; available at http://fcc.gov .

before full deployment. The proposal lacks definition related to all of these areas. The proposal introduces significant risks to public safety officers, firefighters and overall emergency response. The proposal does not provide public safety agencies with a reasoned migration and implementation strategy consistent with public safety requirements." [11]

The City of New York fully supports the Comments of King County Washington and the City of Seattle Washington, as expressed in their Comments, excerpted below.

"The proposed band plan in the NPSTC Report for critical infrastructure is unusable for point to multipoint (aka wan) with only two adjacent 10MHz channels. The proposed constraints would have several negative impacts for the deployments in Seattle and King County:

1. The City of Seattle uses 4.9GHz. for the transport of video, which requires 20MHz channels to provide the necessary throughput. The channel limitations would not be sufficient for this use.

2. The current, pre-interoperability deployment of 4.9 GHz by King County does use 5MHz channels, but to accommodate a larger number of simultaneous connections at transit bases more than two 5 MHz channels (would be required). The channel limitations would not provide sufficient bandwidth for King County requirements.

3. King County and the City are developing an interoperability agreement, which will allow both agencies to use both networks, thereby extending the value of each jurisdiction's investment, and provide both agencies with more coverage than they could build on their own. In order to achieve interoperability, King County must reconfigure its network to use 20 MHz channels. The channel limitations in the proposal would not provide sufficient bandwidth for interoperability to work.

4. Because the regional plan is to have the Seattle and King County 4.9 GHz networks interoperable, loss of Seattle's partnership would eliminate coverage for Transit

[11] See "Comments on Behalf Of Regional Planning Committee 8", Executive Summary, page 5, filed in response to public notice DA 13-2246, regarding the NPSTC 4.9GHz National Plan, under Dockets WP 07-100, PS 06-229 and WT 06-150; available at http://fcc.gov .

throughout the Seattle Central Business District. Conversely, Seattle would lose access to coverage on more than miles of urban arterials.

5. Additionally, if the Seattle and King County networks are not able to be interoperable, two channels are insufficient for both networks to manage interference between the systems while providing seamless coverage in the same geographic area.

4. The NPSTC Plan will impose an undue financial burden on Public Safety

The NPSTC Plan recommends incorporating elements of Part 101 rules and adding frequency coordinating requirements for point to point ("PTP") links that support either broadband or narrowband operations. The NPSTC national plan if adapted will add significant cost for planning, design, engineering analysis, licensing and frequency coordination. Adapting the NPSTC plan would force public safety entities that have already deployed 4.9 GHz systems per Regional coordination and approval, and in compliance with existing rules, to replace or reconfigure these networks at considerable expense.

5. The NPSTC Plan Is Inconsistent with Current Wireless Broadband Technological Trends

Multiple Input Multiple Output (MIMO) technology is a key element of both the 802.11n standard and LTE standards. Rather than being less spectrally efficient, it is more, so as it provides for increased throughput and range. The assignment of specific channels to specific applications is grossly spectrally inefficient since jurisdictions may not use these applications and will be prohibited from accessing portions of the 4.9 GHz band for purposes that are relevant to them. Application specific channel allocation is spectrally inefficient. It is a throwback to narrowband thinking and inappropriate in a modern broadband wireless network environment. Consolidating current systems into tighter channel spacing is not feasible and lowers overall throughput and capacity of existing deployed systems, increases the noise floor and significantly limits spectrum reuse in highly congested areas.

IV. CONCLUSIONS AND RECOMMENDATIONS

New York City is actively reliant on 4.9 GHz infrastructure for mission critical communications and has invested substantially in the current infrastructure. Rebanding would impose operational disruption and interject technological uncertainty into the infrastructure. Also, the City strongly opposes coordination at the national level rather than the regional level. Coordination must continue to be managed by local RPCs as such entities maintain an in depth knowledge of the area's needs and resources, and can maximize spectrum efficiency for users. The short range nature of the 4.9 GHz band further underscores the point that regional, rather than nationwide coordination is most appropriate. In this past decade, within RPC 8, the regional plan has worked well locally, as there have been no instances requiring the FCC to mediate conflicts, thus allowing the Commission freedom from imposing regulation on trivial regional issues.

New York City maintains that rather than changing the rules on a nationwide basis, requiring regions that do not agree with the rule changes to file plan amendments, the rules should not be changed, since numerous public safety entities, particularly in major cities, have invested millions of dollars to construct and deploy 4.9 GHz systems in good faith, in accordance with existing rules. These jurisdictions should not be penalized for their accomplishments. Rather, regions that feel constrained by existing rules that have been in effect for many years should file plan amendments in the event that their requirements cannot be accommodated by existing rules. The Commission should maintain the existing rules but be flexible in its approach and approve needs based waivers and plan amendments that enhance public safety communications for Regions whose requirements are not met by current rules.

Respectfully Submitted,

New York City Police Department

By: James Hassett

Title: Manager, Radio Repair Operations

NYC DoITT

By: Steven Harte

Title: Associate Commissioner

December 13, 2013