

Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

In the Matter of	)	
	)	
Unlicensed Use of the 6 GHz Band	)	ET Docket No. 18-295
	)	
Expanding Flexible Use in Mid-Band Spectrum	)	GN Docket No. 17-183
Between 3.7 and 24 GHz	)	

**COMMENTS**

Los Angeles County, California, the City and County of Denver, Colorado, the City of Kansas City, Missouri, Ozaukee County, Wisconsin, San Bernardino County, California, the Regional Wireless Cooperative (“RWC”) and the Government Wireless Technology & Communications Association (“GWTCA”) (jointly, the “Joint Commenters”), through counsel and pursuant to Section 1.415 of the Commission’s Rules, 47 C.F.R. §1.415, hereby submits its Comments in the response to the Commission’s Notice of Proposed Rule Making in the above-captioned matter.

**BACKGROUND**

**Los Angeles County, California** - Los Angeles County, California (“Los Angeles County”), is a licensee of a microwave system in the 6 GHz band. The Los Angeles Countywide microwave network (“LANET”) consists of thirty-four (34) primary tower sites and an additional fifty-six (56) Fire Department and Sheriff’s Department stations which are provided connectivity by these primary sites.

The microwave links in service across LANET comprise of U6/L6 GHz, 10GHz, 11 GHz, 18 GHz, 23GHz as well as the unlicensed radio links in the 4.9 GHz band. In addition to providing

service to the Fire and Sheriff's Departments, LANET also provides transport services to the County Wide Integrated Radio System ("CWIRS"), a 800 MHz simulcast trunked radio system designed for disaster recovery as well as servicing the County's day-to-day operation for all the other public service agencies such as Department of Public Works, Paramedics radio systems, Department of Social Services, Parks and Recreation, Libraries, District Attorneys, Animal Controllers, etc.

To accommodate the Los Angeles Regional Interoperable Communications System ("LA-RICS"), a grant funded multi-year, multimillion-dollar project, additional microwave paths are being added to the LANET. The LANET microwave system and its supported radio systems provide first responder communications to the entirety of Los Angeles County as well as the region once LA-RICS is being implemented. The County of Los Angeles is currently holding 124 active microwave radio licenses authorized by the Federal Communications Commission to operate in this band to provide mission-critical services to a population total in excess of 10.17 million citizens and visitors.

**Kansas City, Missouri** – The City of Kansas City, Missouri ("Kansas City") is also a microwave licensee in the 6 GHz band. The Metropolitan Regional Radio System ("MARRS") consists of 47 Tower Sites and 24 Public Safety Answering Points interconnected by microwave links primarily in the upper 6 GHz band. This system also provides the data path for all regional 911 calls. These microwave links support 28,000 public safety and public service users in State, Local, and Federal levels of government to support approximately 1.8 million citizens. Each of these links are carrying dozens of calls for service at any given time.

**Ozaukee County, Wisconsin** – Ozaukee County, Wisconsin ("Ozaukee County") has 6 GHz microwave licenses. Ozaukee County's public safety radio communications system consists

of a three site simulcast with a fourth satellite site within its county boundaries that are all connected to a control point via 6 GHz and 4.9 GHz microwave technologies.

There is a connection to the neighboring county to the west, Washington County Wisconsin, through an interop subsystem interface via 4.9 GHz microwave. Ozaukee and Washington Counties interoperate extensively. Washington County operates a ten site simulcast system utilizing 4.9, 6 and 11 GHz for site connectivity.

In addition to the traffic of the two counties, the State of Wisconsin operates a state wide system that utilizes available microwave bandwidth in both counties. Considering the interop nature of the two counties, public safety and public service agencies support approximately 225,000 citizens, relying heavily on the reliability of the microwave systems operating on the frequencies in question.

**City and County of Denver, Colorado** – The City and County of Denver, Colorado (“Denver”) radio system consists of nine (9) radio site locations connected by both a 6 GHz and 11 GHz microwave network to support over 8000 Public Safety radio users. The Denver 911 center handles over 80,000 calls for service monthly. The Denver radio system is interconnected to the City of Lakewood and the City of Arvada using 6 GHz microwave links, which supports interoperability to those agencies. There are additional microwave links using 6 GHz that provide connectivity to support interoperability throughout the North Central Region (NCR) in Colorado. The NCR consists of ten (10) counties in the metro area, which includes forty-one (41) cities, towns or municipalities, which encompasses over 60% of the population of Colorado.

**San Bernardino County, California** - The County of San Bernardino and its fourteen (14) incorporated cities absolutely rely on 6 GHz microwave radio relay links as the backbone in providing emergency radio communications throughout the county. The microwave radio links

provide the 7x24, mission critical connections between Law, Fire and EMS emergency Dispatchers and First Responders throughout the county. Without interference free 6 GHz microwave links, emergency dispatch and responses come to a halt. As the Commission knows, Public Safety Communications systems, including the 800 MHz trunked system architecture used by San Bernardino County consists of numerous radio sites, often in rural or remote areas where no commercial carrier wirelines or fiber is deployed, thus mandating 6 GHz microwave links as the interconnectivity solution between remote radio sites and their central control systems. Frequently multiple microwave hops that span 200 plus miles are deployed to facilitate the interconnections between radios sites and control and dispatch centers. There is simply no alternative to the long haul propagation realities offered by the 6 GHz spectrum, and the spectrum's long standing coordination process which insures interference free operations amongst similar users.

Each day, the County's population of approximately 2.1 million rely on a First Responder force of nearly 3,000 to provide life-saving and property protecting services across an area greater than 20,000 square miles. The County's nearly 75 microwave sites, with the majority using 6 GHz technology, serve in the front line to enable and safeguard that mission, clearly contributing to the public good. Any interruption to the 6 GHz service breaks communication pathways which will in turn delay or in many cases halt an emergency response. The response impact means a Law Enforcement Officer is not aware of a call for help on the beat, a Fire Fighter does not hear the call for a house on fire, and the EMT cannot be immediately dispatched to a person that has stopped breathing.

**The Regional Wireless Cooperative** – The Regional Wireless Cooperative ("RWC") is a cooperative body formed under an Intergovernmental Agreement. Membership is open to all local,

county, state, federal and tribal governmental in the Phoenix, Arizona Metropolitan Region. The RWC provides seamless interoperability for twenty (20) cities, towns and fire districts in the region by operating a Public Safety Radio Network over an 11,000-square mile coverage area.

The RWC operates over eighty (80) fixed microwave paths which carry mission critical public safety traffic, of which over twenty (20) operate in the 5.925-6.425 GHz band. Large amounts of public tax dollars have been invested in these critical communications links to engineer and build the network to meet “five nines” of reliability. This high level of reliability is the standard across all of the public safety networks discussed herein.

**Government Wireless Technology & Communications Association** – The Government Wireless Technology & Communications Association (“GWTCA”), is a non-profit trade association created to advocate on behalf of government and non-government users of wireless technology and communications in the public service industries, such as public transit. GWTCA’s membership includes government agencies, manufacturers, engineers and consultants working on a variety of issues impacting represented users. As government agencies and transit operators often provide infrastructure locations for implementation of telecommunications facilities, GWTCA has a significant interest in this proceeding. Such users are also licensees and users in the 6 GHz band.

In this proceeding, the Commission is proposing to permit sharing of the 6 GHz band by unlicensed broadband services. As long term licensees in the band, operating public safety systems, the Joint Commenters have a significant interest in this proceeding. In addition, the Joint Commenters support the Comments submitted in this proceeding by the National Public Safety Telecommunications Council (“NPSTC”), and urge the Commission to give those Comments due consideration.

## II. COMMENTS

As discussed above, the Joint Commenters have microwave interests in the 6 GHz, and thus are extremely concerned about the potential of interference to these operations, which are crucial to public safety. As the Commission has discovered in the 800 MHz band, the discovering and mitigating carrier to public safety interference is a complicated, burdensome and expensive proposition. Further, since such interference is discovered after it occurs, it poses a grave danger to public safety.

The Joint Commenters appreciate the Commission interest in creating even more carrier spectrum. The Joint Commenters have already been through two forced relocations to accommodate such carrier interests, including the 800 MHz reband and the 2 GHz relocation to create PCS spectrum. However, at a certain point the needs of public safety must take precedence.<sup>1</sup>

The Joint Commenters are adamantly opposed to any “sharing” of the 6 GHz band in which their microwave links exist. The risk to public safety is simply too great. While the Commission recognizes in paragraph 9 of the NPRM that these public safety links exist, the NPRM is devoid of any meaningful recognition of efforts, costs and consequences of interference to public safety operations. Indeed, footnote 47 (a “... handful of filers...”) appears to suggest that a numerical count of filers in support or opposition governs the Commission’s decisions. Of course we would all like to have additional wireless services available for a plethora of new services, as well as more efficient existing services. However, the Commission must recognize that public safety services transcend the need to stream more television shows. Entertainment needs must be

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<sup>1</sup> This is not to suggest that the Joint Commenters are not supportive of advanced communications opportunities and services. For example, GWTC serves on the Telecommunications Industries Association (“TIA”) committee seeking to create smart building standards. <https://www.tiaonline.org/what-we-do/technology/programs/smart-buildings>. Similarly, as the Commission is fully aware, Los Angeles County (through LA-RICS) was one of the first users of FirstNet.

balanced against safety. As a society, we must recognize that the continuing strain on public safety resources necessitates more efficiency in the delivery of services, and the availability of spectrum is the single most important part of that effort.

The Joint Commenters appreciate that Automated Frequency Coordination (“AFC”) systems create the potential for increased spectrum sharing. However, public safety should not be the innovation guinea pig. Interference from mobile devices is notoriously difficult to locate for mitigation and increasing the opportunities for mobile interference within the band is an unnecessarily high risk when balanced against the need to stream the next viral video. The Commission has only recently adopted final rules for the Citizens Broadband Radio Service (“CBRS”). Expansion of that system is premature, at best, particularly when the expansion is to include public safety spectrum.

However, should the Commission chose to go forward and place public safety systems at risk, there must be the ability to render interfering units inoperable. The Joint Commenters also appreciate that the Commission has attempted to identify a methodology to mitigate interference when, not if, it occurs. Despite reservations of some, if the Commission is to place public safety systems at risk, there must be a mechanism in place to identify the source of interference. However, merely having each unit transmit an occasional identification is insufficient. Even the proposed frequency identification is insufficient, as there is no proposed mechanism to determine the responsible party for the unit. Rather, unit registration with the AFC must also include inputting information tying the unit to a party responsible for the unit’s operation. In this way, the hours and hours that public safety entities spend “interference hunting” can be somewhat minimized.

The Commission has also failed to address the increased costs to public safety from having a new interference source to monitor. By way of reference, 800 MHz **post**-rebanding interference mitigation has cost the City of Oakland over a half million dollars. Unfortunately, Oakland is not alone in encountering such interference, post-rebanding. These interference problems post-rebanding have occurred despite the presence of Section 90.697 of the Commission's Rules, which was specifically designed to address post-rebanding interference. Section 90.697 is the most advanced interference rule section ever created by the FCC, yet it has failed to be effective at ensuring that interference does not occur, and has failed to inhibit the imposition of significant costs on municipalities. The Joint Commenters would support financial responsibility for such municipal efforts falling on the AFC, as it was the AFC's allocation of certain frequencies which caused the interference.

The Commission's Rules must also clearly define, with no room for a battle of the engineers, what will be considered interference, similar to what was adopted as Section 90.697 (albeit bit error rate must be included). Further, as with Part 90, it must be abundantly clear that the interfering unit must immediately discontinue operation. The AFC should also have the ability to disable units causing such interference, once properly notified.



### **III. CONCLUSION**

WHEREFORE, the premises considered, it is respectfully requested that the Commission act in accordance with the views expressed herein.

Respectfully submitted,

LOS ANGELES COUNTY, CALIFORNIA  
CITY OF KANSAS CITY, MISSOURI  
CITY AND COUNTY OF DENVER, COLORADO  
OZAUKEE COUNTY, WISCONSIN  
SAN BERNARDINO COUNTY, CALIFORNIA  
THE REGIONAL WIRELESS COALITION  
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