

**BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554**

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

COMMENTS OF THE COUNTIES OF FAUQUIER AND LOUDOUN, VIRGINIA

The County of Fauquier, Virginia (“Fauquier County” or “Fauquier”) and the County of Loudoun, Virginia (“Loudoun County” or “Loudoun”) (collectively, “the Counties”) hereby jointly submit their comments in response to the Federal Communications Commission’s (“FCC” or “Commission”) *Notice of Inquiry* (“NOI”) on issues regarding the 5.925-6.425 GHz and 6.425-7.125 GHz bands (collectively, the “6 GHz bands”).¹

I. INTRODUCTION

Loudoun County is a political subdivision of the Commonwealth of Virginia, situated in the Northern Virginia region of the Washington, D.C. suburbs. The County is home to an estimated 383,948 residents as of 2017, with an expected population of about 414,700 by the year 2020. Loudoun County encompasses a land area of 520 square miles. In addition to the nearly 400,000 residents living in the County, thousands more commute to and through the county every day. Loudoun’s economy is growing rapidly, especially in the high-tech sector; it is informally known as the “Internet Capitol of the World” due to the high prevalence of data centers and significant Internet backbone infrastructure traversing the eastern portion of the County.

¹*Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz*, Notice of Inquiry, GN Docket No. 17-183, 32 FCC Rcd 6373 (rel. Aug. 3, 2017) (“*Mid-Band MHz NOI*”).

Loudoun County operates a wide-area, P25-compliant public safety land-mobile radio system in the 800 MHz band. This system provides critical dispatch and voice/data communications services to all public safety and first responder agencies operating within the County. Users who depend on the continuous and uninterrupted operation of this critical infrastructure include the Loudoun County Department of Fire and Rescue, Loudoun County Sheriff's Office, Loudoun County Office of Emergency Management, Loudoun County Animal Services, Town of Leesburg Police Department, Town of Middleburg Police Department, Town of Purcellville Police Department, and the Loudoun County Public Schools Safety and Security division. Additionally, personnel from neighboring jurisdictions utilize the system when they are providing mutual aid to Loudoun County.

This radio system is the primary means of alerting first responders to emergency situations; any system outages could directly endanger the lives of citizens and visitors in Loudoun County, including the safety of the County's first responders.

Fauquier County is a political subdivision of the Commonwealth of Virginia, situated to the south of Loudoun County, sharing part of its norther border with Loudoun. Like Loudoun, Fauquier operates a wide-area, 800 MHz public safety land-mobile radio system and a 490-MHz wide-area voice paging system for fire and rescue personnel and station alerting. These public safety radio systems are responsible for providing the primary means of communication for all first responders in Fauquier County and the Town of Warrenton. Additionally, Fauquier County's land-mobile public safety radio system is the hub of a tri-county system, serving the Virginia counties of Culpeper, Fauquier, and Rappahannock. Together, these systems are critical to the safety of

thousands of first responders and approximately 124,900 residents covering an approximate area of 1,297 square miles across the three counties.

II. EXPANDED USE OF THE 6 GHz BANDS VIA LICENSED OR UNLICENSED BROADBAND SERVICES WOULD INCREASE RISK OF INTERFERENCE TO CRITICAL LIFE-SAFETY INFRASTRUCTURE

The Commission is soliciting comment on the feasibility of allowing licensed and/or unlicensed use of the 5.925-6.425 GHz band for the purposes of expanding commercial broadband services. In addition, the Commission is also interested in comments regarding more intensive use of the 6.425-7.125 GHz band by fixed and mobile users.

Loudoun County's unique geography illustrates the clear need for improved broadband availability, especially to underserved rural customers. While the eastern portion of Loudoun County is highly developed and has ample access to traditional wireline-based broadband connections, the County's western half remains very rural in nature. Residents in the west frequently struggle to obtain suitable broadband connectivity.

Access to broadband services in Fauquier County is even further limited due to its significantly more rural landscape.

Despite the clear need for improved access to broadband in rural and semi-rural communities across the nation, the Counties must take the position that allowing the liberal use of the 6 GHz bands by broadband carriers is not in the general interest of public safety.

Loudoun County, like many localities in the Commonwealth of Virginia and the nation, relies exclusively on a 6 GHz microwave backbone infrastructure to operate its county-wide public safety radio system. The County's network is comprised of nine remote radio-frequency transceiver sites and one master site. These sites are

connected through a microwave network in a logical ring configuration; this ring is comprised almost entirely of 6 GHz microwave paths, ranging from 5.9 GHz up through 6.8 GHz.²

Similarly, Fauquier County relies exclusively on a microwave backbone comprised primarily of 6 GHz paths to enable the reliable operation of its public safety radio systems.³

The Counties are concerned that the introduction of unlicensed and/or licensed broadband transmitters in the 6 GHz bands, which the Commission acknowledges have been traditionally reserved for fixed service, point-to-point microwave operations that “support a variety of critical services such as public safety (including backhaul for police and fire vehicle dispatch),” could create a an unmanageable level of interference that would wreak havoc on critical life-safety communications networks, like the Counties’ land-mobile radios systems that depend on highly-reliable microwave backhauls in order to achieve the 99.999% uptime required by first responders and the citizens of the Counties.

The memories of the 800 MHz “rebanding” initiative are still fresh in the minds of many telecommunications professionals in the public safety industry. The Counties are concerned that allowing broadband users access to a band historically designated for fixed, point-to-point operations could cause an unacceptable rise in the noise-floor across the band, in addition to the possibility of more localized interference problems.

²Loudoun County holds eleven (11) FCC licenses containing one or more 6 GHz microwave paths used for mission-critical backhaul connectivity in its 800 MHz P25 public safety land-mobile radio system. Call signs are as follows: WPQP306, WPQP307, WPQP308, WPQP309, WPQP310, WPQP311, WPQP312, WPVQ924, WQHR222, WQKK688, WQKK721.

³Fauquier County holds seven (7) FCC licenses containing one or more 6 GHz microwave paths used for mission-critical backhaul connectivity in its 800 MHz public safety land-mobile radio system. Call signs are as follows: WPKY380, WPKY388, WPKY536, WPKY540, WPKY547, WQJM395, WQZP778.

If widespread interference were to occur, the remedy could be financially and operationally prohibitive for all parties involved. Furthermore, if unlicensed operation were permitted, it would be impossible to predict the interference impacts of these new users until it was already too late, and the costs and difficulty in tracking down interference to incumbent, mission-critical licensees by unlicensed users would be monumental.

Loudoun County relies on the properties of the 6 GHz bands to link several remote sites over long, 20+ mile hops, while achieving the necessary “five nines” (99.999%) uptime required for public-safety grade infrastructure. Should the County be forced to relocate to a different band – financial prohibitions excluded – the higher fixed-service, point-to-point bands might not offer the technical characteristics necessary to provide reliable service over such long distances.

III. CONCLUSION

The Counties propose that is not in the public’s best interest to allow licensed and/or unlicensed wireless broadband carriers access to the 6 GHz bands traditionally reserved for fixed-service, point-to-point microwave networks. The successful, reliable operation of the incumbent microwave networks operating on the 6 GHz bands is made possible only due to the Commission’s existing licensing and prior frequency coordination requirements.

The Counties are concerned that the introduction of broadband services onto the 6 GHz spectrum would have far-reaching economic and life-safety effects for incumbent licensees. Furthermore, the Counties believe that a proposal of this nature could lead to unintended consequences, resulting in widespread interference and potentially a situation similar to the Sprint/NEXTEL 800 MHz “rebanding” scenario.

The Counties appreciate the Commission's desire to expand broadband access to citizens in underserved areas; therefore, the Counties would support the development of proper measures that allow for the safe and flexible use of the bands adjacent to the 6 GHz bands; so long as these measures ensure there is no harmful interference to 6 GHz licensees and there are no additional financial burdens placed upon public bodies as a result.

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

Respectfully submitted,

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