

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

In the Matter of)	
)	
Use of Spectrum Bands above 24 GHz for Mobile Radio Service)	GN Docket No. 14-177
)	
)	
Amendment of the Commission’s Rules Regarding the 37.0-38.6 GHz and 38.6-40 GHz Bands)	ET Docket No. 95-183 (Terminated)
)	
)	
Implementation of Section 309(j) of the Communications Act – Competitive Bidding, 37.0-38.6 GHz and 38.6-40 GHz Bands)	PP Docket No. 93-253 (Terminated)
)	
)	
Petition for Rulemaking of the Fixed Wireless Communications Coalition to Create Service Rules for the 42-43.5 GHz Band)	RM-11664
)	

To: The Federal Communications Commission

**COMMENTS OF
McKAY BROTHERS, LLC**

McKay Brothers, LLC (“McKay”), through its attorneys, hereby submits its Comments in response to the Notice of Inquiry in the above-captioned dockets (“NOI”) examining the potential for providing mobile radio services in several bands above 24 GHz, including the 70/80 GHz bands (*i.e.*, 71-76 GHz, 81-86 GHz)¹. McKay applauds the Commission for issuing this NOI and reviewing the current use of microwave bands above 24 GHz. However, this review should not be done in a vacuum.

As the Commission explores whether mobile and unlicensed operations can coexist with fixed incumbents in the 70/80 GHz bands, the agency also should review its existing rules governing fixed licensees in these bands. The Commission should develop a complete record to

¹ See In Re Use of Spectrum Bands Above 24 GHz for Mobile Radio Service, *Notice of Inquiry*, FCC 14-154 (Oct. 17, 2014)(“NOI”).

understand the nature of incumbent operations, update its rules governing those fixed services, and introduce mobile and unlicensed services in these bands only if those services can coexist safely with existing incumbent operations.

I. Background of the 70/80 GHz Bands

The existing rules governing non-Federal use of the 70/80 GHz bands were adopted by the Federal Communications Commission (“FCC” or “Commission”) in 2003.² These rules require licensees first to secure a nationwide license from the Commission and then to register individual sites with a third-party database manager.³ The Commission established this “light-licensing” scheme after determining that the “highly directional, ‘pencil-beam’ signal characteristics permit systems in these bands to be engineered so that many operations can co-exist in the same vicinity without causing interference to one another.”⁴

These 70/80 GHz paths must be placed into operation within 12 months.⁵ The Commission’s other Part 101 microwave rules regarding the accuracy of site-specific information apply to the 70/80 GHz bands.⁶ For example, the location of antenna sites must be accurate within one second in the horizontal dimensions (latitude and longitude) and one meter in the vertical dimension (ground elevation).⁷ Priority between competing links is established based upon which link was first filed with a third-party database manager.⁸

² Allocations of Service Rules for the 71-76 GHz, 81-86 GHz, and 92-95 GHz Bands, WT Docket No. 02-146, Report and Order, 18 FCC Rcd 23318 (rel. Nov. 4, 2003)(“*Millimeter Wave R&O*”); 47 C.F.R. §101.1523.

³ Millimeter Wave R&O at ¶50.

⁴ Allocations of Service Rules for the 71-76 GHz, 81-86 GHz, and 92-95 GHz Bands, WT Docket No. 02-146, Report and Order, FCC 05-45 (rel. Mar. 3, 2005)(“*Millimeter Wave MO&O*”) at ¶3. The Commission found that the pencil beam characteristics of the band diminished the risk of interference to the extent that first-in-time registrants would receive sufficient protection.

⁵ 47 C.F.R. §101.63(b).

⁶ 47 C.F.R. §101.21(e).

⁷ *Id.*

⁸ Millimeter Wave R&O at ¶ 2; 47 C.F.R. §101.1523(b).

II. McKay's use of the 70/80 GHz Bands

McKay is a specialty microwave telecommunications company that operates a low latency network connecting sites in Illinois and New Jersey. McKay's subsidiary, Geneva Communications LLC ("Geneva"), holds a nationwide millimeter wave license for the 70/80/90 GHz band under which it has registered approximately 2,000 individual sites connecting financial institutions in and around major metropolitan areas in northern New Jersey and Chicago.² Geneva has placed a substantial number of its links into operation, while others remain within the initial 12-month buildout period.

Geneva's 70/80 GHz network is deployed on a host of structures: communications towers, rooftops, masts built atop rooftops, monopoles, and water towers. The transmit height of equipment on its network varies widely, ranging from 1,100 feet atop a large building to as low as 20 feet. When possible, Geneva prefers to deploy its equipment atop communications towers at approximately 200 feet.

The 70/80 GHz bands are heavily-used in the areas where Geneva operates its network and the company has experienced significant interference on its 70/80 GHz links. Point-to-point spectrum options are limited in these urban areas and Geneva – along with its competitors – use the same bands to connect the same data centers. This has led to several entities filing dozens of identical registrations. Though Geneva was the first to register many of its 70/80 GHz links, it can use only a fraction of the spectrum because of interference concerns. The attachments illustrate the congestion in the 70/80 GHz band in these major markets.

² Call Sign WQOF 357.

III. The NOI Seeks Information on the 70/80 GHz Bands

The NOI reports that as of June 2014, there were 270 active nationwide licenses and approximately 10,240 registered fixed links in the 70 GHz band and 8,620 registered fixed links in the 80 GHz band.¹⁰ According to one third-party database manager, there currently are a total of 23,304 fixed links registered nationwide and more than half – 12,622 – are located in New Jersey.

The NOI seeks comment on the general use of the 70/80 GHz bands and also on several specific aspects of the bands, including:

1. Whether mobile operations could coexist with existing Federal and non-Federal fixed operations in the 70/80 GHz bands.¹¹
2. Whether the existing licensing model could be adapted to facilitate coordination with advanced mobile service.¹²
3. Whether it is advisable to allow unlicensed Part 15 operations in the 70/80 GHz bands.¹³
4. How its rules must be revised to limit interference from mobile subscribers.¹⁴

McKay respectfully suggests that the Commission's review of whether the 70/80 GHz band is suitable for mobile or unlicensed operations should also include a review of the existing rules governing fixed services in these bands. As discussed below, the rules governing fixed operations in these bands can be improved and those improvements may help the Commission introduce mobile and unlicensed services in these bands in the future.

IV. The FCC Should Only Permit Mobile or Unlicensed Operations in the 70/80 GHz Band if Incumbent Fixed Users are Protected

¹⁰ See, NOI at ¶ 76.

¹¹ *Id.* at ¶ 81.

¹² *Id.*

¹³ *Id.*

¹⁴ *Id.* at ¶82.

McKay urges the Commission to develop a complete record in this proceeding so that it can understand how incumbents currently use the 70/80 GHz bands. Introducing mobile or unlicensed users into these bands without first obtaining a full understanding of existing fixed operations could create significant interference and undermine the reliability of existing incumbent operations in the bands.

The Commission relied on the “pencil-beam” signal characteristics in adopting its relaxed regulatory framework for the 70/80 GHz bands more than a decade ago, and the NOI likewise refers to “pencil beams.”¹⁵ As technology has advanced, however, the signal characteristics in these bands can no longer be described as “pencil beams.”

When the millimeter rules were adopted in 2003, the Commission noted that “we are in the early stages of development of equipment for these bands...”¹⁶ As the Commission predicted, technology has advanced rapidly in these bands. Today, many of the paths in the 70/80 GHz bands are not “pencil beams” connecting neighboring rooftops. Instead, they are often 10 miles or longer. As a result, the beamwidth on these longer paths can be several hundred feet – hardly a “pencil beam.”

McKay and other companies operating in these bands have recently made substantial investments in equipment to support longer path lengths.¹⁷ In making these investments, these companies relied heavily on the Commission’s existing rules. McKay is not opposed to introducing mobile or unlicensed users in these bands, but before any new users access the bands the Commission should ensure they do not unduly impact existing fixed licensees. To do that, the Commission must develop a complete record to understand the nature of incumbent

¹⁵ *Id* at ¶78.

¹⁶ *Millimeter Wave R&O* at ¶96.

¹⁷ The equipment in this band has only become available in the past few years (*See, e.g.*, FCC ID No. CFDGX4000; *see also*, FCC Id No. RY7HYBRID4GIGE80G).

operations on these frequencies and consider revisions to its existing rules governing fixed services.

Modest revisions to the Commission's rules for fixed operations in these bands may help the agency gain a more thorough understanding of how incumbent licensees currently rely on the bands and enable the agency to protect incumbents while introducing mobile and unlicensed services in the bands.

A. Permitting Registrations to be Updated Will Encourage Innovation

The 70/80 GHz bands are being put to important, sensitive uses in reliance on current rules. The existing rules offer protections to first-in-time registrations, but do not allow those registrations to be amended to, for example, upgrade equipment to more spectrally-efficient technologies. Registrants may elect to continue using less efficient technology to avoid forfeiting their first-in-time protections under the Commission's existing rules.

By permitting registrations to be amended for minor modifications, such as equipment upgrades, the Commission would provide an incentive for fixed users in the 70/80 GHz bands to adopt the most technologically-advanced equipment while preserving their first-in-time protections. This ultimately may help the Commission to bring additional mobile or unlicensed users into the 70/80 GHz bands.

Over time, new equipment may be developed to enable incumbent users to coexist with mobile or unlicensed users in this band. Modifying the existing rules governing fixed services to permit registrations to be amended while preserving first-in-time protections would encourage fixed users to adopt these new technologies.

B. Construction Notification Should be Required

The Commission does not require licensees to file a notification with the third-party database manager certifying that links have been constructed within the twelve-month buildout period.¹⁸ Rather, registrants are urged to “notify a database manager to withdraw unconstructed links from the database.”¹⁹

In the *Millimeter Wave R&O*, the Commission reserved discretion to revisit this issue if experience indicated additional measures were necessary.²⁰ The Commission should revise its rules to require construction notifications for links in the 70/80 GHz band, because it is otherwise difficult for registrants to determine which links may or may not have been constructed.

There are two main benefits of such a revision to the rules. First, it will help the Commission determine the incumbent use of the 70/80 GHz bands before considering additional uses and users. Instead of gauging incumbent use by the number of links that have been registered, the Commission could determine the number of links that actually are operational.

Second, the NOI asks whether the Commission should consider adopting a system of dynamic access control using databases for mobile or unlicensed use in the 70/80 GHz bands similar to those used to control access to TV White Spaces.²¹ Any dynamic access control system needs to rely on a database that includes the operating parameters of fixed incumbent users. Requiring registrants of fixed sites to confirm that links have been constructed would improve the accuracy of any dynamic access control system database and improve reliability.

¹⁸ *Millimeter Wave R&O* at ¶80.

¹⁹ *Id.*

²⁰ *Millimeter Wave R&O* at ¶80.

²¹ *NOI* at ¶82.

V. Conclusion

McKay applauds the Commission for issuing this NOI and reviewing the current use of microwave bands above 24 GHz. As the Commission gathers information regarding potential mobile uses of these bands, however, we urge first and foremost that the incumbent users who relied on the existing rules be protected. To do that, the Commission should take its time to establish a complete record to understand the nature of fixed incumbent operations. After reviewing this record, the agency may need to revise its existing rules governing fixed service in the 70/80 GHz bands. Only when the Commission has protected those incumbent users should it consider introducing mobile or unlicensed use in the bands.

Respectfully submitted,

McKay Brothers, LLC

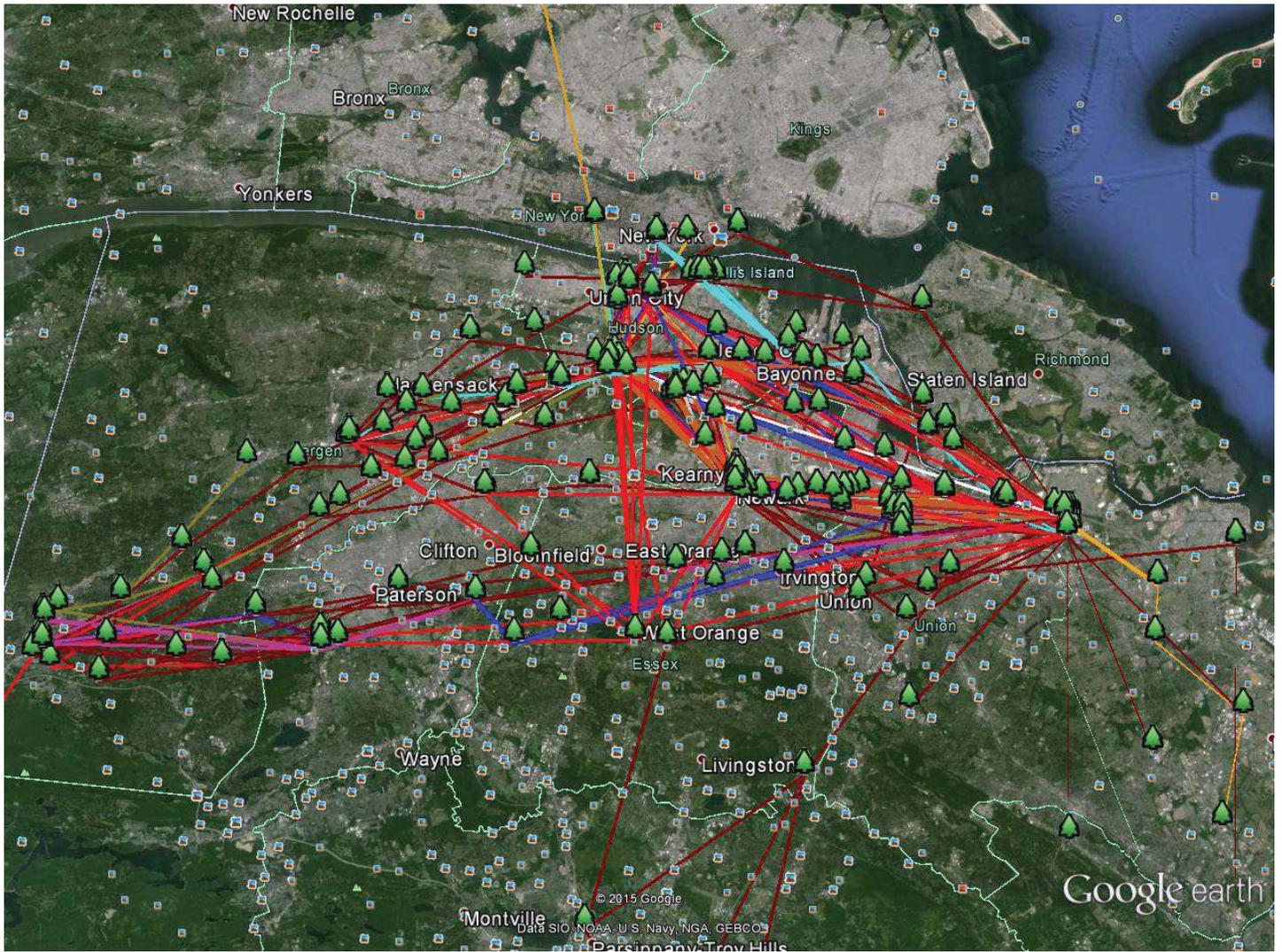
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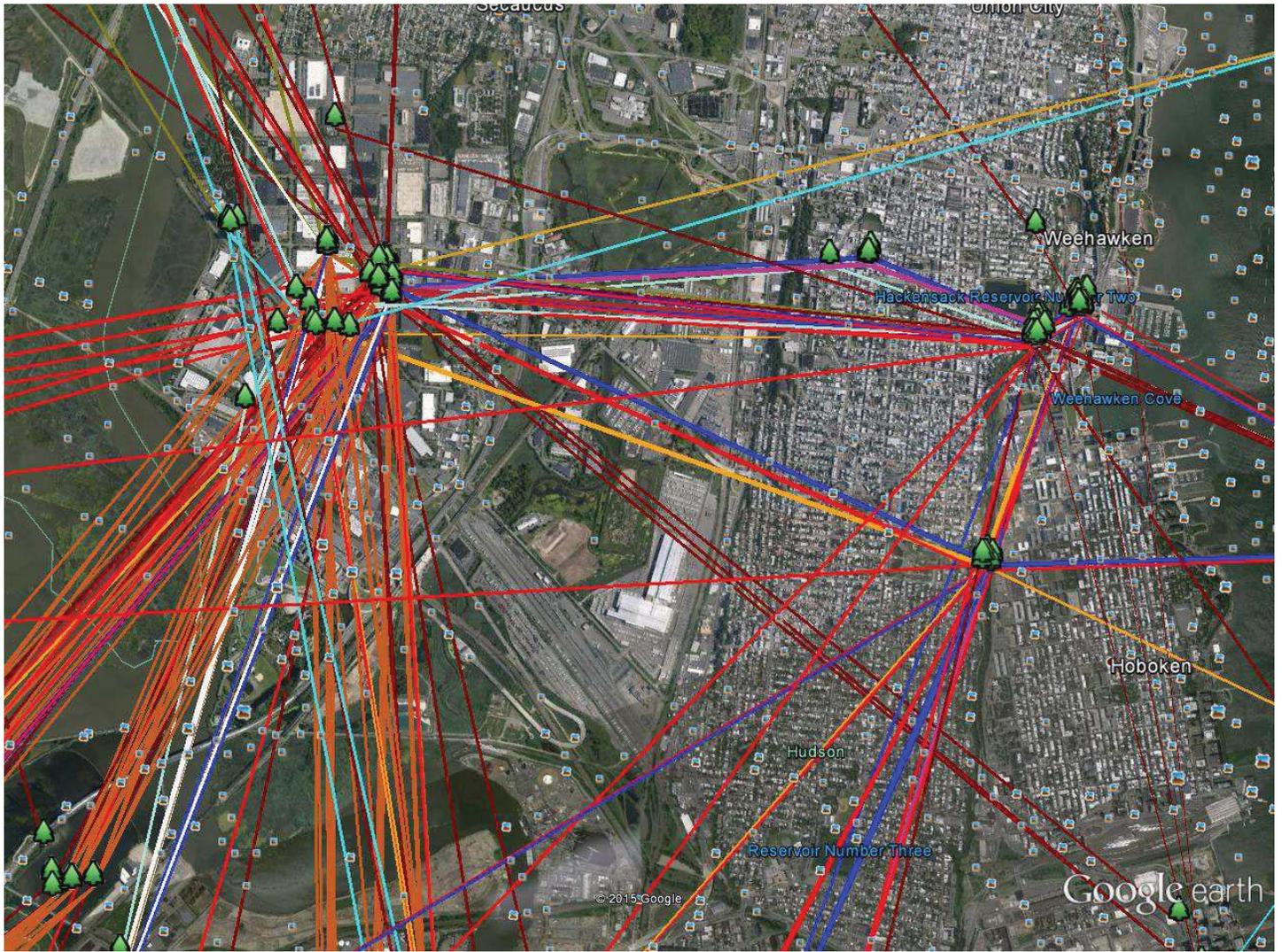
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