

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

In the Matter of)	
)	
Promoting Investment in the 3550-3700 MHz)	GN Docket No. 17-258
Band;)	
)	
Petitions for Rulemaking Regarding the)	RM-11788 (Terminated)
Citizens Broadband Radio Service)	RM-11789 (Terminated)

REPLY COMMENTS OF COMCAST CORPORATION

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Comcast Corporation (“Comcast”) hereby replies to the comments filed in response to the Notice of Proposed Rulemaking and Order Terminating Petitions (“*Notice*” or “*Order Terminating Petitions*”) adopted by the Federal Communications Commission (“Commission”) in the above-referenced docket.¹

I. INTRODUCTION

A broad range of stakeholders representing diverse technologies and business models continues to express significant interest in the 3.5 GHz “innovation band,” which holds great potential to support a variety of traditional wireless services while encouraging deployment of new technologies and business models. The record demonstrates that the current rules have already generated significant interest and investment activity. The record also reinforces Comcast’s position that modest rule changes would make the band even more attractive to a

¹ *Promoting Investment in the 3550-3700 MHz Band; Petitions for Rulemaking Regarding the Citizens Broadband Radio Service*, Notice of Proposed Rulemaking and Order Terminating Petitions, 32 FCC Rcd. 8071 (2017) (“*Notice*” or “*Order Terminating Petitions*,” as applicable).

wide range of potential applicants and “foster an investment environment for the band to flourish in the United States.”²

In particular, as Comcast explained in its initial comments, the Commission’s adoption of the following targeted enhancements would encourage innovation and robust investment in both the Priority Access License (“PAL”) and General Authorized Access (“GAA”) tiers:

- *License PALs by county.* County-sized licenses strike the right balance between overly granular license areas and larger license areas that could negatively affect investment in PALs and the diversity of PAL services and users.
- *Extend PAL terms to seven years, with renewal contingent on meeting performance requirements.* Longer license terms whose renewal depends on meeting appropriate buildout conditions will allow sufficient time for both deployment and return on investment, while still ensuring accountability to promote efficient use of scarce spectrum resources.
- *Make all PALs available for auction, up to the maximum of seven per license area.* There is no supportable basis to artificially constrain the supply of PALs given the Commission’s focus on investment, and auctioning all PALs would best meet the objectives of Section 309(j).³
- *Reject proposals to permit bidding on specific spectrum blocks.* Block-specific bidding would not be practical or desirable in the 3.5 GHz Band and would have unintended consequences for incumbents and other users.
- *Maintain existing technical rules.* Proposals to relax emissions rules or raise power limits could increase interference with adjacent-band operations and also disrupt the balance among various users of the 3.5 GHz Band.
- *Allow limited, non-public disclosure of Citizens Broadband Service Device (“CBSD”) registration information to Spectrum Access System (“SAS”) Administrators.* This proprietary network information should be shared among SAS Administrators to facilitate coordination and be made available in an aggregated form to help prospective 3.5 GHz

² *Id.* ¶ 3.

³ See 47 U.S.C. § 309(j)(3)(b) (directing the Commission to design systems of competitive bidding that “promot[e] economic opportunity and competition and ensur[e] that new and innovative technologies are readily accessible to the American people,” while “disseminating licenses among a wide variety of applicants”).

users plan their deployments, but it should not be disclosed to the general public due to its competitively sensitive nature.

- *Support external efforts to promote fair sharing in the GAA tier.* The Commission should support efforts to make GAA coexistence an SAS responsibility.

In these reply comments, Comcast focuses on the three following critical issues, each of which generated robust and thoughtful discussion in the initial round of comments:

- Increasing the geographic licensing area of PALs to counties;
- Permitting partitioning and disaggregation, but not relying on secondary markets to cure deficiencies of license areas that are too large; and
- Establishing seven-year PAL terms.

Adopting these targeted, middle-ground changes would help the Commission meet its goals of “keep[ing] up with technological advancements, creat[ing] incentives for investment, encourag[ing] efficient spectrum use, support[ing] a variety of different use cases, and promot[ing] robust network deployments in both urban and rural communities” to ensure global leadership in 5G.⁴

II. THE RECORD MAKES CLEAR THAT COUNTY-BASED LICENSING FOR PALS WILL ENCOURAGE EFFICIENT DEPLOYMENT OF 3.5 GHZ SERVICES AND BROAD PARTICIPATION IN AUCTIONS.

The *Notice* seeks comment on “increasing the geographic licensing area of PALs to stimulate additional investment, promote innovation, and encourage efficient use of spectrum resources,” consistent with the Commission’s goal to “encourage robust investment in network deployment.”⁵ Increasing PAL sizes to counties strikes the right balance between establishing larger geographic license areas for PALs to encourage efficient deployment of 3.5 GHz services

⁴ *Notice* ¶ 2.

⁵ *Id.* ¶¶ 23, 1.

and maintaining license areas small enough to ensure economic viability for a variety of business and technical models. This approach would encourage robust participation in auctions, attract PAL investment from entities large and small, and ensure that the 3.5 GHz Band remains accessible for non-traditional participants and innovative business models.

County-based licensing would encourage PAL investment by a wide variety of market participants and business models. As Motorola explains in advocating for counties as part of a hybrid licensing scheme, “access to smaller-sized licensing areas is essential for promoting a diversity of broadband uses in the 3.5 GHz band,” and counties would help “meet the needs of both larger service providers and cable operators.”⁶ And, as Blooston notes in support of its proposal to license five PALs on a county basis, counties are also large enough to “significantly reduce the administrative complexity of dealing with dozens, if not hundreds or thousands of census-block licenses that may be needed to provide PAL service over a larger area,” while “‘nest[ing]’ into all of the FCC’s larger geographic service areas.”⁷

County-sized license areas are appropriate for the small cell deployments that are likely to be prevalent in the band.⁸ As Ruckus succinctly argues, “guiding principles regarding

⁶ Comments of Motorola Solutions, Inc., GN Docket No. 17-258, at 5 (Dec. 28, 2017); *see also* Comments of NCTA – The Internet & Television Association, GN Docket No. 17-258, at 4 (Dec. 28, 2017) (“NCTA Comments”) (arguing that counties are “right-sized licenses – large enough to attract investment by typical mobile market participants, but small enough not to price out or otherwise exclude new entrants who plan to offer innovative services to consumers”).

⁷ Comments of Blooston Rural Carriers, GN Docket No. 17-258, at 4 (Dec. 28, 2017) (“Blooston Comments”); *see also* Comments of NTCA – The Rural Broadband Association, GN Docket No. 17-258, at 8 (Dec. 28, 2017) (“NTCA Comments”) (“Counties ‘nest’ into larger geographic service areas and operators would have the ability to secure licenses that correspond to their current footprints.”).

⁸ *See* Comments of Ruckus Networks, a Company of Arris U.S. Holdings, Inc., GN Docket No. 17-258, at 10 (Dec. 28, 2017) (“Ruckus Comments”) (“[T]he CBRS band will be utilized for small cell deployments, which typically provide coverage areas measured in tens and hundreds

propagation, intended coverage range, targeted deployments, discouragement of spectrum warehousing, license border coordination, and the overall cost-benefit of smaller licenses relative to administrative burdens” point to the appropriateness of county-based licensing in the 3.5 GHz Band.⁹ Small cell technology permits providers to target their deployments to localized areas, making efficient use of spectrum, as well as efficient use of new entrants’ existing infrastructure.¹⁰

Licensing on a county basis also is consistent with the Commission’s rural broadband goals. As Blooston notes, “County-based license areas will help to ensure that PALs in rural areas are available for businesses that seek to deploy PAL services in rural communities.”¹¹ The National Rural Telecommunications Cooperative (“NRTC”) and the National Rural Electric Cooperative Association (“NRECA”) agree, supporting the same five-PAL county-licensing structure “to promote service in rural America.”¹² NTCA – The Rural Broadband Association

of meters. There will be metrocell deployments covering kilometers, but these will be a minority of the radio nodes deployed, and even in these metrocell cases the coverage ranges will be much shorter than traditional macro cellular deployments due to the maximum radiated power limit of 50 watts.”).

⁹ *Id.* at 11.

¹⁰ See Comments of Charter Communications, Inc., GN Docket No. 17-258, at 3 (Dec. 28, 2017) (“Charter Comments”) (“Importantly, smaller license sizes will enable new entrants to more efficiently leverage their existing infrastructure in those counties that encompass their networks. Utilizing existing networks would enable new entrants such as Charter to rapidly deploy 3.5 GHz radios throughout these county-sized licensing areas for the provision of wireless broadband service. This results in more wireless service options with better throughput for more consumers in a shorter period of time.”).

¹¹ Blooston Comments at 4.

¹² Joint Comments of the National Rural Telecommunication Cooperative and the National Rural Electric Cooperative Association, GN Docket No. 17-258, at 1, 5-6 (Dec. 28, 2017).

likewise notes that county-sized licenses would give rural providers “the ability to obtain spectrum in just the rural areas they intend to serve.”¹³ Even some rural broadband providers who advocated for different-sized license areas concede that county-based licensing would be a “step in the right direction.”¹⁴

By contrast, “[t]hose in favor of increasing the PAL license size [to PEAs] have failed to provide specific service and deployment plans and explain how PEA-sized licenses are necessary to the success of those plans, and additionally how they will make efficient utilization of all the areas covered by PEA-sized licenses (i.e. urban, suburban, and rural).”¹⁵ Indeed, increasing the PAL license area to the PEA level risks foreclosing some entities from obtaining PALs.

III. A BROAD RANGE OF COMMENTERS AGREE THAT SECONDARY MARKET OPPORTUNITIES WILL NOT CURE DEFICIENCIES OF LARGER LICENSE AREAS.

“[T]he ability of a PAL licensee to partition or disaggregate its license on the secondary market could be a useful tool to ensure robust and targeted use of the spectrum throughout the

¹³ NTCA Comments at 8.

¹⁴ Joint Comments of Frontier Communications Corporation, Windstream Services, LLC, and Consolidated Communications, Inc., GN Docket No. 17-258, at 9 (Dec. 28, 2017). The claim by Frontier, Windstream, and Consolidated that county-based licensing could “unfairly favor just one type of competitor” lacks merit, however. *See id.* at 9-10. Although some cable franchise areas may coincide with county-based PALs, there is no set geographic area for cable franchising, which is administered differently throughout the country: sometimes by municipality, sometimes by county, and sometimes by state. According to the National Conference of State Legislatures, about half of the states have adopted some form of state-level video franchising administered by a public utilities commission or other state agency. National Conference of State Legislatures, *Statewide Video Franchising Statutes* (Nov. 2014), <http://www.ncsl.org/research/telecommunications-and-information-technology/statewide-video-franchising-statutes.aspx>.

¹⁵ Ruckus Comments at 12-13.

license area,” as the Commission suggests.¹⁶ However, there is broad agreement from a multitude of interests that promoting more secondary market activity, while a worthy policy goal, will not cure the negative consequences of an initial PAL license area that is too large for the unique characteristics of the 3.5 GHz Band. Adopting somewhat smaller license areas while permitting large-scale operators to aggregate the areas they need is a more realistic approach.

While the great majority of commenters support the Commission’s proposal to allow partitioning and disaggregation of PALs, there is also widespread consensus that the Commission should not rely entirely on secondary market transactions instead of smaller license areas to facilitate the targeted 3.5 GHz deployments that many stakeholders are interested in pursuing. As NCTA observes, partitioning and disaggregation are “not an adequate substitute for right-sized licenses in this band.”¹⁷ Blooston concurs that, “[w]hile secondary market transactions such as leases and partitioning/disaggregation could be a useful tool to ensure robust and targeted use of the spectrum throughout the license area, the Commission should not view secondary market transactions as a replacement for licensing smaller geographic areas in the first instance.”¹⁸ Southern Linc adds that “[s]econdary market transactions (to the extent they are

¹⁶ Notice ¶ 30.

¹⁷ NCTA Comments at 10; *see also* Comments of the General Electric Company, GN Docket No. 17-258, at 4 (Dec. 28, 2017) (“The Commission cannot count on its secondary market mechanisms to avoid the harms from PEA-based licensing.”); Comments of Google, Inc., GN Docket No. 17-258, at 18 (Dec. 28, 2017) (stating that secondary market rules “are no substitute for right-sized PALs,” and that “PAL areas that better match actual patterns of investment and deployment would more efficiently achieve the same goals as these additional regulations”).

¹⁸ Blooston Comments at 12; *see also* NTCA Comments at 6 (“The secondary market cannot be relied on to ensure that small businesses and rural carriers have access to spectrum or that rural areas will see the benefit of spectrum based services in the CBRS band.”). Economist William Lehr similarly argues that “the performance of CBRS secondary markets is purely hypothetical,” and that the mere existence of such markets “is not a valid reason to favor large

even available) would also impose significant transaction costs that would serve as an economic barrier to smaller entities and endanger the economic viability of smaller-scale, localized deployments.”¹⁹

The record also indicates that the option to combine smaller PALs for large-scale 3.5 GHz deployments would be more effective and efficient than partitioning or disaggregating PEA-based PALs to accommodate more targeted deployments. The Wireless Internet Service Providers Association (“WISPA”) argues that a better alternative to “[d]ivesting large, unwanted swaths through secondary market transactions” would be to “enable PAL holders to aggregate licenses in smaller areas if they so desire.”²⁰ As the *Notice* acknowledges, “counties nest into PEAs, which in turn nest into EAs,” suggesting that county-based PALs would provide appropriate building blocks for larger deployments while retaining the advantages of smaller license areas as discussed above.²¹ Consistent with these points, the Commission should adopt its proposal to allow secondary market transactions for PAL rights, but it should not assume such transactions will effectively mitigate the risks of larger license areas.

license territories since the availability of *efficient* secondary spectrum markets could also serve to allow those seeking to acquire larger spectrum territories to acquire spectrum if the license territories are small.” William Lehr, *Analysis of Proposed Modification to CBRS PAL Framework*, at 12 (Dec. 28, 2017) (emphasis in original), *available at* <https://ecfsapi.fcc.gov/file/1228227728544/Lehr%20CBRS%20Comments%2017-258.pdf>.

¹⁹ Comments of Southern Linc, GN Docket No. 17-258, at 16 (Dec. 28, 2017) (“Southern Linc Comments”).

²⁰ Comments of the Wireless Internet Service Providers Association, GN Docket No. 17-258, at 44 (Dec. 28, 2017) (“WISPA Comments”).

²¹ *Notice* ¶ 24.

IV. THE RECORD REFLECTS WIDESPREAD SUPPORT FOR A MIDDLE-GROUND LICENSE TERM; A SEVEN-YEAR TERM WILL PROMOTE INVESTMENT AND FACILITATE INNOVATION.

License terms longer than three years would significantly strengthen the business case for an upfront investment in PALs and in the 3.5 GHz Band in general, while mitigating concerns about warehousing and high barriers to entry that could limit the potential for new uses of the band.²² The Commission should heed the numerous calls for compromise on license term length by adopting PAL terms of seven years, thereby facilitating PAL ownership by a variety of licensees pursuing a range of business models, while still ensuring adequate time for a return on investment.

Many commenters favor the Commission’s proposal to lengthen PAL terms so that both initial and subsequent terms last longer than three years.²³ In particular, a diverse array of interests support middle-ground PAL terms of more than three years, but less than ten years, for a variety of reasons. For example, Charter and NTCA agree with Comcast’s assessment that deployment of the nascent technologies that will be used in the 3.5 GHz Band is likely to take longer than three years.²⁴ In addition, Microsoft and NCTA agree with Comcast that license terms must allow providers a sufficient period of time not just to deploy, but also to recoup their investments.²⁵ And, as NCTA notes, a seven-year term “strikes a good balance between the

²² See *id.* ¶ 12.

²³ *Id.* ¶ 13.

²⁴ Comments of Comcast Corporation, GN Docket No. 17-258, at 16, 18-19 (Dec. 28, 2017) (“Comcast Comments”); Charter Comments at 4; see also NTCA Comments at 9-10.

²⁵ See Comcast Comments at 19; Comments of Microsoft Corporation, GN Docket No. 17-258, at 3 (Dec. 28, 2017); NCTA Comments at 11-12.

positions of the advocates in this proceeding, falling squarely between the existing three-year terms and the ten-year terms proposed by the carriers.”²⁶

The Commission has also heard from commenters who join Comcast in generally recognizing the importance of compromise on license terms.²⁷ Blooston, Ruckus, and Enterprise Wireless Alliance agree that a license term between the current three-year term and proposed ten-year term would balance competing objectives by keeping barriers to entry low for smaller entities while also helping to facilitate investments by larger companies seeking the added certainty that longer terms can provide.²⁸ Such robust, yet diverse, investment would advance the Commission’s goal – rooted in Section 309(j) – of facilitating participation by a wide variety of applicants, business models, and technologies.²⁹

The record reflects neither a widespread consensus nor a clear rationale for adopting ten-year PAL terms. Instead, commenters supporting ten-year terms present vague and non-evidence-based arguments that would appear to equally support the adoption of seven-year terms.³⁰ As noted above, a seven-year term is a much more balanced approach that will support

²⁶ NCTA Comments at 12.

²⁷ See Joint Comments of the Telecommunications Subcommittee of the American Petroleum Institute and the Regulatory and Technology Committee of the Energy Telecommunications and Electrical Association, GN Docket No. 17-258, at 3-4 (Dec. 28, 2017) ; Southern Linc Comments at 13; WISPA Comments at 40; Comments of Rural Wireless Association, GN Docket No. 17-258, 9-10 (Dec. 28, 2017).

²⁸ See Comcast Comments at 16-17; Blooston Comments at 9-10; Ruckus Comments at 7-8; Comments of the Enterprise Wireless Alliance GN Docket No. 17-258, at 5-6 (Dec. 28, 2017).

²⁹ See Notice ¶ 14; *First Report and Order* ¶ 107; 47 U.S.C. § 309(j)(3)(B).

³⁰ See, e.g., Comments of CTIA, GN Docket No. 17-258, at 4-5 (Dec. 28, 2017) (arguing that “shorter terms” fail to account for development, certification, deployment and siting); Comments of T-Mobile USA, Inc., GN Docket No. 17-258, at 4 (Dec. 28, 2017) (same); Comments of Mobile Future, GN Docket No. 17-258, at 5-6 (Dec. 28, 2017) (arguing that ten-

investment in traditional wireless services while encouraging deployment of new technologies and business models.

V. CONCLUSION

As numerous commenters representing multiple technologies and business models attest, the 3.5 GHz Band provides the Commission with a unique opportunity to promote investment, innovation, network deployment, and efficient allocation of valuable spectrum rights. To maximize this opportunity, the Commission should adopt targeted, middle-ground rule modifications, including county-based PALs, secondary market mechanisms, and seven-year license terms.

year terms will provide greater certainty than three-year terms); Comments of United States Cellular Corporation, GN Docket No. 17-258, at 9-10 (Dec. 28, 2017) (arguing that ten-year terms will allow a longer period for return on investment).

Respectfully submitted,

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