

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

In the Matter of)
)
Use of Spectrum Bands Above 24 GHz For) GN Docket No. 14-177
Mobile Radio Services)
)

COMMENTS OF PCIA – THE WIRELESS INFRASTRUCTURE ASSOCIATION

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I. INTRODUCTION

PCIA – The Wireless Infrastructure Association (“PCIA”),¹ submits these comments in response to the above-captioned Notice of Proposed Rulemaking (“*Above 24 GHz NPRM*”).² PCIA supports the Federal Communications Commission’s (“FCC” or “Commission”) proactive approach in exploring spectrum bands above 24 GHz (“above 24 GHz bands”) suitable for the deployment of fifth generation (“5G”) technology.³ The FCC’s continued interest in wireless infrastructure deployment issues, including the role of small wireless communications facilities, such as small cells, demonstrates the Commission’s dedication to heterogeneous networks and provides attainable opportunities to ease the wireless data crunch while creating new jobs and economic growth.⁴

¹ PCIA – The Wireless Infrastructure Association is the principal organization representing the companies that build, design, own and manage telecommunications facilities throughout the world. Its over 230 members include carriers, infrastructure providers, and professional services firms.

² *In the Matter of Use of Spectrum Bands Above 24 GHz for Mobile Radio Services*, GN Docket No. 14-177, Notice of Proposed Rulemaking, FCC 15-138 (rel. Oct. 23, 2015) (“*Above 24 GHz NPRM*”).

³ See *FCC Proposes New Wireless Broadband Rules*, INSIDE TOWERS (last visited Jan. 26, 2016), <https://insidetowers.com/fcc-proposes-new-rules/> (“PCIA is pleased that the FCC has proposed a new rulemaking for wireless broadband in spectrum above 24 GHz. The Commission is taking an important step toward advancing next-generation technologies, including 5G mobile services and the Internet of Things, both of which have the potential to revolutionize personal and business communications.”).

⁴ See *Above 24 GHz NPRM* at ¶¶ 4, 99, 272-274; See also Comments of Samsung Electronics America, Inc., and Samsung Research America on *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services*, GN Docket No. 14-177 (filed Jan. 15, 2015) at 25 (“Samsung Comments”); Comments of Ericsson Inc., on *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services*, GN Docket No. 14-177 (filed Jan. 15, 2015) at 9-10 (“Ericsson Comments”). *Acceleration of Broadband Deployment by Improving Wireless Facilities Siting Policies, Acceleration of Broadband Deployment: Expanding the Reach and Reducing the Cost of Broadband Deployment by Improving Policies Regarding Public Rights of Way and Wireless*

As the Commission considers ways to balance growing consumer broadband demands and efficient use of our nation's scarce spectrum resource, the Commission should focus its efforts in above 24 GHz bands on removing barriers to wireless infrastructure deployment, allowing flexible use for spectrum licensees, and promoting broadband investment through regulatory certainty.

II. THE COMMISSION SHOULD PRIORITIZE REDUCING BARRIERS TO WIRELESS INFRASTRUCTURE SITING.

A successful 5G network will require the support of robust infrastructure. Networks will continue to rely on both macro towers to provide broader coverage and small wireless facilities used primarily to address capacity needs to provide short-range coverage.⁵ Therefore, the FCC should utilize every means in its authority to implement policies that promote the removal of barriers to wireless infrastructure deployment.

PCIA has continuously advocated for more streamlined processes in wireless facility siting and technology-neutral rules. Wireless service and infrastructure providers continue to invest billions to expand and improve mobile broadband;⁶ however, industry continues to face significant challenges when attempting to deploy new infrastructure and utilize existing

Facilities Siting, 2012 Biennial Review of Telecommunications Regulations, Report and Order, WT Docket Nos. 13-238, 13-32, WC Docket No. 11-59 (rel. Oct. 21, 2014) ("Infrastructure Order"). See also ALAN PEARCE ET AL., WIRELESS BROADBAND INFRASTRUCTURE: A CATALYST FOR GDP AND JOB GROWTH 2013-2017 (Sept. 2013), available at http://www.pcia.com/images/IAE_Infrastructure_and_Economy2.PDF ("WIRELESS BROADBAND INFRASTRUCTURE STUDY").

⁵ See *Above 24 GHz NPRM* at ¶¶ 99-100; Samsung Comments at 25.

⁶ WIRELESS BROADBAND INFRASTRUCTURE STUDY; Comments of Verizon on *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services*, GN Docket No. 14-177 (filed Jan. 15, 2015) at 1 ("Verizon Comments").

infrastructure for new or improved purposes.⁷ The Commission should focus on removing barriers to deploying wireless infrastructure to meet the growing broadband needs of consumers.

The Commission’s adoption of its 2014 Broadband Acceleration Report and Order (“Infrastructure Order”) was an important step forward in streamlining the deployment of wireless infrastructure.⁸ The Commission should also continue to work with industry and other interested parties to find a timely solution to “Twilight Towers”⁹ that hold the potential for increased broadband deployment through collocations on existing structures.

Alongside Commission infrastructure policy changes, the FCC should educate state and local governments as well as Tribal Nations on how they can remove barriers to broadband

⁷ Comments of PCIA – The Wireless Infrastructure Association on *The Deliberations of the Broadband Opportunity Council in the Matter of Broadband Opportunity Council Notice and Request for Comment*, Docket No. 1540414365-5365-01 (filed June 10, 2015) at 7 (“PCIA Broadband Opportunity Council Comments”); Comments of PCIA – The Wireless Infrastructure Association on *The GSA Wireless Telecommunications Company Application in the Matter of Information Collection; Wireless Telecommunications Industry Application*, OMB Control No. 3030-00XX (filed May 11, 2015) at 2 (“PCIA Comments on GSA Application”); BROADBAND OPPORTUNITY COUNCIL REPORT at 5-6; Comments of CTIA—The Wireless Association on *Deployment of Advanced Telecommunications Capability to all Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act*, GN Docket No. 15-191 (filed Sept. 15, 2015) at 13-15 (“CTIA Comments on Deployment of Advanced Telecommunications Capability”).

⁸ Infrastructure Order.

⁹ See CTIA Comments on Deployment of Advanced Telecommunications Capability at 14, n.47 (“The term ‘twilight towers’ refers to towers that (a) were constructed after March 16, 2001 (the effective date of the Nationwide Programmatic Agreement for the Collocation of Wireless Antennas) and before March 7, 2005 (the effective date of the Nationwide Programmatic Agreement Regarding the Section 106 National Historic Preservation Act Review Process), and (b) cannot be shown to have gone through the requisite historic preservation review process under Section 106 of the National Historic Preservation Act and Section 1.1307(a)(4) and (5) of the FCC’s rules. The term covers towers that never went through the process as well as towers that may have gone through it (or commenced it), but for which the tower owner is unable to document compliance.”).

deployment and best practices to implement.¹⁰ Additionally, the FCC should renew its survey of states exercising reverse preemption over pole attachments to determine the status of public utility commission regulations and state legislation as they relate to wireless attachments.¹¹ The FCC has facility siting expertise that would serve all jurisdictions well to promote the timely approval of tower and small wireless facilities siting applications and review.¹²

The FCC should also lend its expertise to federal agencies attempting to open up federal lands and properties for wireless infrastructure siting. The FCC should encourage these agencies to adopt streamlined facility siting application procedures and forms;¹³ institute a standardized fee schedule, longer lease terms, and automated lease term renewals;¹⁴ and increase deployment transparency and information sharing¹⁵ as they implement broadband infrastructure procedures.

PCIA commends the FCC on its ongoing efforts to reduce barriers to wireless infrastructure siting and for working with the Administration's Broadband Opportunity Council

¹⁰ See Reply Comments of PCIA – The Wireless Infrastructure Association on *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act*, GN Docket No. 15-191 (filed Sept. 30, 2015) at 8; BROADBAND OPPORTUNITY COUNCIL REPORT at 8.

¹¹ The FCC has publicized that 21 states have certified that they regulate pole attachments. *States that have Certified that They Regulate Pole Attachments*, Public Notice, WC Docket No. 10-101 (2010) at 1-2. “Certification by a state preempts the FCC from accepting pole attachment complaints.” *Id.* at 1, citing 7 U.S.C. § 224(c); 47 C.F.R. §§ 1.1401-1.1418.

¹² See CTIA Comments on Deployment of Advanced Telecommunications Capability at 15.

¹³ See PCIA Broadband Opportunity Council Comments at 4; BROADBAND OPPORTUNITY COUNCIL REPORT at 3 (stating that one of the goals of the Broadband Opportunity Council is to “streamline the applications for programs and broadband permitting processes to support broadband deployment and foster competition”); PCIA Comments on GSA Application at 4.

¹⁴ PCIA Broadband Opportunity Council Comments at 4-5.

¹⁵ *Id.* at 5-7.

on a number of recommendations to increase broadband deployment.¹⁶ These, among PCIA’s other recommendations, will help remove barriers to wireless infrastructure siting, ultimately expediting deployment of the next generation of wireless technology.

III. THE COMMISSION SHOULD ALLOW FOR INCREASED FLEXIBILITY AS NEW TECHNOLOGIES DEVELOP THROUGH THE USE OF NEWLY-AVAILABLE SPECTRUM BANDS.

As the FCC rightfully recognized in the *Above 24 GHz NPRM*, the spectrum bands being explored have the potential to enable the development of new, innovative technologies and to enhance current technologies.¹⁷ Over the last year, technology stakeholders have increased discussions and steps toward the development of 5G technologies.¹⁸ Nokia has provided milestones for preparations leading up to launching a 5G commercial network in 2020.¹⁹ In September, Verizon announced its “roadmap to 5G technology in the U.S.” with field trials beginning in 2016.²⁰ Verizon is partnering with Nokia, Qualcomm, Samsung, Alcatel-Lucent, Cisco, Ericsson, and Intel in what it has termed the “Verizon 5G Technology Forum” to “ensure

¹⁶ See BROADBAND OPPORTUNITY COUNCIL REPORT at 17, 20.

¹⁷ *Above 24 GHz NPRM* at ¶ 6. Many commenters have noted, however, that the FCC should explore spectrum bands not presented in the *Above 24 GHz NPRM*. Nokia Comments at 34; Qualcomm Comments at 17-18; Samsung Comments at 40-41; Verizon Comments at 3, n.4; Comments of CTIA—The Wireless Association on *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services*, GN Docket No. 14-177 (filed Jan. 15, 2015) at 7 (“CTIA Comments”). PCIA encourages the FCC to not delay in its exploration of additional spectrum bands that can support next generation services.

¹⁸ *Above 24 GHz NPRM* at ¶ 12.

¹⁹ Letter from Brian Hendricks, Nokia, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 14-177, Attached “5G Technology and Spectrum” Presentation (filed Aug. 26, 2015) at 5 (“Nokia *Ex Parte* Presentation”).

²⁰ Press Release, Verizon, Verizon sets roadmap to 5G technology in U.S.: Field trials to start in 2016 (Sept. 8, 2015), available at <http://www.verizon.com/about/news/verizon-sets-roadmap-5g-technology-us-field-trials-start-2016>.

an aggressive pace of innovation.”²¹ And in November 2015, AT&T Labs presented “Key Issues and Architecture for 5G” before the IEEE 5G Silicon Valley Summit.²² Those testing 5G technology envision it will enable application and industry innovation in the areas of healthcare, home and office automation, wearables, autonomous driving cars, and other Internet of Things (“IoT”) applications.²³

These technologies will require the deployment of robust wireless infrastructure networks providing the foundation necessary for broadband-connected services. While access to more spectrum and spectral efficiency are necessary for the next wave of technologies, network densification through collocations of antennas and equipment on traditional towers, new wireless sites, and small cells is essential to the evolution of the next generation wireless network. The Commission should implement policies that foster innovative broadband deployment solutions, such as the use of small cells, while also promoting investment from potential licensees.²⁴ In the licensed space, small cells are able to provide coverage in targeted locations and also offer

²¹ *Id.* Press Release, PRNewswire, Intel joins Verizon's 5G Technology Forum to accelerate development of 5G, next-generation wireless technology (Sept. 23, 2015), *available at* <http://www.prnewswire.com/news-releases/intel-joins-verizons-5g-technology-forum-to-accelerate-development-of-5g-next-generation-wireless-technology-300147870.html>.

²² Letter from Stacey Black, AT&T, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 14-177, Attached “Key Issues and Architecture for 5G” Presentation (filed Jan. 6, 2016) (“AT&T *Ex Parte* Presentation”).

²³ *Above 24 GHz NPRM* at ¶ 6; Nokia Comments at 4; Qualcomm Comments at 7; 5G Vision, Samsung (Feb. 2015), *available at* <http://www.samsung.com/global/business-images/insights/2015/Samsung-5G-Vision-0.pdf>.

²⁴ *See* Reply Comments of PCIA – The Wireless Infrastructure Association on *Amendment of the Commission’s Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*, GN Docket No. 12-354 (filed August 14, 2015) at 3-4 (“PCIA 3.5 GHz Reply Comments”).

additional call and data-handling capacity in areas where consumer demand for wireless services is highest.²⁵

In addition to increased demands by consumers on smartphones, laptops, and tablets, the IoT will require an expanded wireless infrastructure footprint to power key machine-to-machine (“M2M”) connections. M2M traffic is predicted to grow 49-fold from 2014 to 2019²⁶ and enable innovative applications like mobile health, industrial and agricultural automation, utility and environmental monitoring, and inventory tracking and logistics. M2M connections will also support more consumer-focused wearable technology—including watches, glasses, fitness trackers, and the like; analysts estimate wearable device shipments to reach 750 million units by 2020.²⁷ Access to cloud-based services, smart homes, and other IoT applications requires an always-on, always-present connection. As these devices come to market, wireless providers will need to continue investing in the expansion of wireless capacity to support these additional connections.

In order for service providers to meet these increasing data demands, the FCC must allow them to flexibly use their spectrum resources. PCIA and technology companies at the forefront of the development of new technologies, such as 5G, support the FCC’s flexible use rights proposal for the 28 GHz and 39 GHz bands and strongly advocate for the FCC to remain flexible

²⁵ PCIA 3.5 GHz Reply Comments at 3; Qualcomm Comments at ii.

²⁶ VNI Mobile Forecast Highlights, 2014 – 2019, CISCO, http://www.cisco.com/assets/sol/sp/vni/forecast_highlights_mobile/index.html (select “Filter by Country,” select “United States,” then select “Potential M2M Connections”).

²⁷ Press Release, Tractica, Cumulative Wearable Device Shipments to Surpass 750 Million Units by 2020 (Jun. 22, 2015), *available at* <https://www.tractica.com/newsroom/press-releases/cumulative-wearable-device-shipments-to-surpass-750-million-units-by-2020>.

in its rules to best allow for innovation to take its natural course.²⁸ The FCC has long adopted flexible service rules, which paved the way for success in the deployment of 4G technology and has spurred competition and innovation in the mobile ecosystem.²⁹

As the FCC accurately notes, this flexibility “will ensure that extensive spectrum is available for service provider deployments of 5G small cells or other fixed or mobile technologies that service providers may deem appropriate.”³⁰ The Commission should not deviate from that flexibility as it was successful in the past, and will prove useful, if not necessary, for the U.S. to lead in the development and deployment of the next generations of wireless services and applications.

5G is in the early stages of development; therefore, service providers and equipment manufacturers require a regulatory environment that allows for fluidity inherent in the innovation process.³¹ Doing so protects and encourages investment. Systems have not been created in the manner envisioned in the above 24 GHz bands. By ensuring flexible use for licensees, the Commission maximizes the utility of the spectrum.

²⁸ *Above 24 GHz NPRM* at ¶¶ 92-98; Qualcomm Comments at 12-13; Reply Comments of AT&T on *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services*, GN Docket No. 14-177 (filed Feb. 18, 2015) at 4 (“AT&T Reply Comments”); Letter from Maggie McCready, Verizon, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 14-177 (filed Dec. 18, 2015).

²⁹ See Letter from Jared Carlson, Ericsson, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 14-177 (filed Jan. 8, 2016) at 1; Qualcomm Comments at ii, 5.

³⁰ *Above 24 GHz NPRM* at ¶ 99.

³¹ See Letter from Charla Rath, Verizon, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 14-177 (filed Jan. 14, 2016) (“Verizon Jan. 14, 2016 *Ex Parte*”); AT&T *Ex Parte* Presentation; Nokia *Ex Parte* Presentation.

IV. THE COMMISSION'S RULES FOR LICENSED OPERATIONS IN THE ABOVE 24 GHZ BANDS SHOULD PROMOTE INVESTMENT THROUGH REGULATORY CERTAINTY.

The FCC should make more spectrum available for mobile use on an exclusive basis where practicable because exclusive use provides the certainty that encourages investment in wireless networks.³² Such certainty is best reached if the Commission establishes that a licensee's investment in the band will be protected through exclusive access to the spectrum it has licensed.³³ Presently, mobile broadband has flourished with utilization of exclusively licensed spectrum.³⁴ An exclusive licensing regime provides for the most efficient use of spectrum across the proposed bands and should be used as the preferred means of authorizing these bands, where possible. Exclusively licensed mobile broadband will be critical in supporting the increase in consumer demand for rapid data and service as it incentivizes investments from entities that desire to support the growing demand for excellent service and a quality user experience.³⁵ When granted exclusive licensing, a provider can ensure that service is reliable for users and relatively free of interference, allowing providers to better meet the demands of their users.³⁶

The FCC should apply the same flexible use rights and exclusive licensing rights to all the proposed bands. The "hybrid licensing scheme" the Commission proposes for the 37 GHz

³² PCIA 3.5 GHz Reply Comments at 3. CTIA *Ex Parte* at 2.

³³ PCIA 3.5 GHz Reply Comments at 3. CTIA *Ex Parte* at 2; *see also* Comments of AT&T Services, Inc., Spectrum Task Force Requests Information on Frequency Bands Identified by NTIA as Potential Broadband Spectrum, ET Docket No. 10-123 (filed Apr. 22, 2011) at 7.

³⁴ Nokia Comments at 30.

³⁵ Qualcomm Comments at 9, 18.

³⁶ *Id.* at 22.

band³⁷ should be eliminated and harmonized with the approach the FCC takes in the 28 GHz and 39 GHz bands to avoid additional confusion and heightened administrative burden.³⁸ Similarly, mobile providers are more likely to invest in these spectrum bands if they are afforded longer lease terms with renewal expectancy.³⁹ PCIA supports the FCC's proposal to establish a 10-year term for all licenses in the proposed above 24 GHz bands,⁴⁰ and the license rules should include expectancy of renewal for subsequent license terms. Not having predictability about whether or not a license will be renewed could deter licensees from deploying robust mobile networks.

³⁷ *Above 24 GHz NPRM* at ¶ 99.

³⁸ Verizon Jan. 14, 2016 *Ex Parte*.

³⁹ See PCIA 3.5 GHz Reply Comments at 7-8.

⁴⁰ *Above 24 GHz NPRM* at ¶ 119; see also Qualcomm Comments at 17.

V. CONCLUSION

As the Commission continues its efforts to open up additional spectrum for mobile services, PCIA encourages the FCC to implement policies that reduce barriers to wireless infrastructure deployment. Expedited buildout of wireless facilities will be essential to the successful rollout of the next generation of wireless technology. Additionally, allowing for increased flexible use of the spectrum bands will foster the development of new technologies while also enhancing current technologies. Finally, by establishing exclusive licensing rules, 10-year license terms, and license renewal expectancy, the Commission will provide the regulatory certainty needed for potential licensees, thereby promoting increased investment in the bands.

Respectfully submitted,

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