

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

In the Matter of	)	
	)	
Amendment of the Commission’s Rules with Regard to Commercial Operations in the 3550-3650 MHz Band	)	GN Docket No. 12-354
	)	
Petition for Rulemaking to Amend the Commission’s Rules Regarding the Citizens Broadband Radio Service in the 3550-3700 MHz Band	)	RM-11788
	)	
Petition for Rulemaking to Maximize Deployment of 5G Technologies in the Citizens Broadband Radio Service	)	RM-11789
	)	

**REPLY COMMENTS  
of  
NE COLORADO CELLULAR, INC., d/b/a VIAERO WIRELESS**

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## SUMMARY

NE Colorado Cellular, Inc., d/b/a Viaero Wireless operates as an incumbent carrier in the 3650-3700 MHz band, using spectrum in the band to deliver high-speed fixed broadband services to rural consumers. Viaero joins numerous other commenters in opposing the T-Mobile USA, Inc., proposal to designate the entire 3.5 GHz band (including the 3650-3700 MHz segment) for Priority Access License use.

The record in this proceeding demonstrates that carriers, equipment manufacturers, and other stakeholders operating in the 3650-3700 MHz General Authorized Access band are investing funds and taking other actions in reliance on the Citizens Broadband Radio Service regulatory framework adopted two years ago, and confirmed by the Commission in a reconsideration proceeding last year. These stakeholder actions, which are all underway in advance of implementation of the Spectrum Access System mechanism established by the Commission, are providing clear evidence that the Commission's experiment for increasing productivity in the 3.5 GHz band will be a success.

The T-Mobile proposal for taking over the 3650-3700 MHz band for PAL use would jettison the CBRS framework adopted by the Commission, replacing it with a traditional exclusive licensing scheme that would benefit a handful of carriers by reserving all 150 megahertz of the 3.5 GHz band for their use in deploying 5G services. The T-Mobile proposal is already having a chilling effect on investment and operations in the 3650-3700 MHz band, because stakeholders are concerned that the Commission's CBRS framework upon which they are relying will be replaced or substantially altered by the rulemaking sought by T-Mobile and CTIA.

The record demonstrates that T-Mobile's proposal for hijacking the 3650-3700 MHz band for PAL use is unsupported and lacks any merit. The proposal would have alarming consequences

for rural consumers, because it would make it extremely difficult, if not impossible, for small rural broadband providers such as Viaero to continue utilizing 3650-3700 MHz spectrum. The proposal would be particularly disruptive to incumbent carriers in the band, effectively cancelling interference protections provided to them by the Commission and exposing their operations to extensive interference from PAL operations.

Viaero agrees with other commenters who argue that T-Mobile's proposal conflicts with the Commission's longstanding policies promoting technological neutrality, since T-Mobile contends that reserving the 3650-3700 MHz band for use by PAL licensees is necessary to provide carriers with incentives to invest in 5G technologies. Viaero also is concerned that the scheme promoted by T-Mobile would likely result in the warehousing of 3650-3700 MHz spectrum in rural areas.

The record before the Commission shows that T-Mobile's proposal would completely upend and reverse the CBRS regulatory framework adopted by the Commission, and that T-Mobile has been unable to fashion any credible justification or rationale for its proposal. Viaero therefore urges the Commission to promptly and summarily reject the T-Mobile proposal.

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NE Colorado Cellular, Inc., d/b/a Viera Wireless, (“Viera”), by counsel and pursuant to Section 1.405(b) of the Commission’s Rules,<sup>1</sup> hereby respectfully submits these Reply Comments in response to the Commission’s Public Notice<sup>2</sup> seeking comment on petitions for rulemaking filed by CTIA and T-Mobile USA, Inc. (“T-Mobile”).<sup>3</sup>

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<sup>1</sup> 47 C.F.R. § 1.405(b).

<sup>2</sup> *Wireless Telecommunications Bureau and Office of Engineering and Technology Seek Comment on Petitions for Rulemaking Regarding the Citizens Broadband Radio Service*, Public Notice, 32 FCC Rcd 5055 (WTB, OET 2017) (“*Public Notice*”).

<sup>3</sup> CTIA Petition for Rulemaking, GN Docket No. 12-354, RM-11788 (filed June 16, 2017) (“CTIA Petition”); T-Mobile Petition for Rulemaking, GN Docket No. 12-354, RM 11-789 (filed June 19, 2017) (“T-Mobile Petition”).

Viaero has operated a successful and growing wireless broadband business since 1991. It has extensive experience operating both fixed and mobile wireless voice and broadband networks, including fixed service networks in the 3650-3700 MHz band. Viaero has a proven record of success in providing services in Colorado, Kansas, and Nebraska, with a longstanding focus on both consumers and businesses in rural areas.

Viaero has an extensive history of working with local communities and groups, providing retail outlets, and constructing and maintaining towers and other facilities designed to bring wireless voice and broadband services to small towns. It has also delivered on its commitments to work with public safety organizations, hospitals, and local governments in these rural communities.

## **I. INTRODUCTION.**

The 3.5 GHz band is a “critical spectrum resource” that currently plays an important role in the deployment of “fixed broadband services in unserved and underserved areas, where wireline technologies cannot be cost-effectively installed.”<sup>4</sup> The Commission should be commended for recognizing the potential of the 3.5 GHz band spectrum, and adopting the 3550-3700 MHz Citizens Broadband Radio Service (“CBRS”) rules, a “groundbreaking regulatory framework”<sup>5</sup> that will help to realize this potential.

There is substantial evidence in the record responding to the *Public Notice* that the Commission’s vision for utilizing the 3.5 GHz band spectrum, which has been articulated and adopted in the *CBRS Order*,<sup>6</sup> is rapidly becoming a reality. In particular, the record provides documentation

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<sup>4</sup> Wireless Internet Service Providers Association (“WISPA”) Comments at iv.

<sup>5</sup> Southern Communications Services, Inc. d/b/a Southern Linc (“Southern Linc”) Comments at 3.

<sup>6</sup> *Amendment of the Commission’s Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*, GN Docket No. 12-354, Report and Order, 30 FCC Rcd 3959 (2015) (“*CBRS Order*” or “*Order*”); *Amendment of the Commission’s Rules with Regard to Commercial Operations in the 3550-3650 MHz*

from numerous parties concerning their investments in the 3650-3700 MHz band and their progress in bringing high-speed, high-quality fixed wireless broadband services to consumers, especially in rural areas. Viaero adds documentation of its own initiatives in the band in these Reply Comments.

T-Mobile, however, has proposed to auction all 150 megahertz of spectrum in the 3.5 GHz band, including the 3650-3700 MHz segment, as Priority Access Licenses (“PALs”), with General Authorized Access (“GAA”) operations only being permitted opportunistically throughout the band.<sup>7</sup> This proposal to turn the entire 3.5 GHz band into a domain for a handful of PAL licensees would kill the Commission’s CBRS creation in its crib. The proposal also casts a cloud of uncertainty over efforts to implement the Commission’s new regulatory framework and stakeholders’ continuing investment and experimentation in the 3650-3700 MHz band.

In these Reply Comments, Viaero joins numerous other parties in urging the Commission to reject T-Mobile’s “self-serving, preclusive,” and dismissive proposal.<sup>8</sup>

**II. VIAERO JOINS OTHER COMMENTERS IN URGING THE COMMISSION TO REJECT THE T-MOBILE PROPOSAL TO DESIGNATE THE ENTIRE 3.5 GHz BAND FOR PRIORITY ACCESS LICENSE USE.**

Numerous stakeholders, including carriers and equipment manufacturers, acting in reliance on the Commission’s decisions in the *CBRS Order*, are continuing to make investments and take other actions to utilize the 3650-3700 MHz spectrum in bringing fixed wireless broadband services to rural consumers. Actions already underway to utilize the 3.5 GHz band under the Commission’s

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*Band*, GN Docket No. 12-354, Order on Reconsideration and Second Report and Order, 31 FCC Rcd 5011 (2016).

<sup>7</sup> T-Mobile Petition at 4.

<sup>8</sup> WISPA Comments at 2.

new CBRS regime would be short-circuited by T-Mobile’s proposal to seize the 3650-3700 MHz spectrum and convert it to a band for PAL licensees. T-Mobile’s bid to dissolve the Commission’s CBRS framework is riddled with flaws and is completely unsupported. The proposal would also have particularly adverse consequences for incumbent users in the GAA portion of the 3.5 GHz band.

**A. Carriers, Equipment Manufacturers, and Other Stakeholders Have Been Acting to Realize the Potential of the Citizens Broadband Radio Service Created by the Commission.**

In adopting the CBRS rules, the Commission’s vision is to “open a new chapter in the history of the administration of one of our nation’s most precious resources—the electromagnetic radio spectrum”<sup>9</sup> by utilizing a framework of regulatory adaptability that “should make the 3.5 GHz Band hospitable to a wide variety of users, deployment models, and business cases, including some solutions to market needs not adequately served by [the Commission’s] conventional licensed or unlicensed rules.”<sup>10</sup> Numerous 3650-3700 MHz band stakeholders, especially those operating in rural areas, are actively engaged in efforts to realize the potential of CBRS.

**1. CBRS Can Play an Important Role in Promoting Fixed Wireless Broadband Deployment in Rural America.**

The record points to the facts that many rural Americans continue to lack access to competitively offered fixed broadband services,<sup>11</sup> and that rural consumers have unique broadband

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<sup>9</sup> *CBRS Order*, 30 FCC Rcd at 3961 (para. 1) (footnote omitted).

<sup>10</sup> *Id.* at 3962 (para. 6).

<sup>11</sup> WISPA references Chairman Pai’s recent observation that, “[i]f you live in rural America, you are much less likely to have high-speed Internet service than if you live in a city.” *Id.* at 8 (quoting Remarks of FCC Chairman Ajit Pai at the American Enterprise Institute, *The First 100 Days: Bringing the Benefits of the Digital Age to All Americans* (May 5, 2017), at 2).



needs.<sup>12</sup> The Commission, which has long been an active proponent of bringing broadband services to rural America,<sup>13</sup> observed in the *CBRS Order* that the regulatory adaptability it has introduced in the 3.5 GHz band will enable rural broadband networks to “potentially access three times more bandwidth than was available under our previous 3650-3700 MHz band rules.”<sup>14</sup>

Small-cell deployment on a GAA basis, which can facilitate broadband deployment in rural areas, is an important component of the Commission’s overall goal of utilizing regulatory adaptability to “make the 3.5 GHz Band hospitable to a wide variety of users, deployment models, and business cases, including some solutions to market needs not adequately served by our conventional licensed or unlicensed rules.”<sup>15</sup>

## **2. There Is Evidence in the Record That the Commission’s CBRS Experiment Will Be Successful.**

In commenting on the Commission’s approach in the *CBRS Order*, then-Commissioner Pai observed that, “[a]fter considering several outside-the-box ideas, we are moving forward with an experiment to see if we can make this spectrum more productive. Will it work? Have we struck a balance that will allow a variety of innovative uses to flourish? We will see.”<sup>16</sup>

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<sup>12</sup> Rapid Systems Comments at 1 (explaining that “[r]ural customer[s] depend on broadband more than customers in major metro cities because of the lack of broadcast channels, radio and Cable TV. Content over IP for them is crucial for rural America as well as the education of our children.”).

<sup>13</sup> *E.g.*, *Connect America Fund, et al.*, WC Docket No. 10-90, *et al.*, Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd 17663, 17668 (para. 5) (2011), *aff’d sub nom. In re FCC 11-161*, 703 F.3d 1015 (10th Cir. May 23, 2014) (indicating that “[t]he universal service challenge of our time is to ensure that all Americans are served by networks that support high-speed Internet access—in addition to basic voice service—where they live, work, and travel. Consistent with that challenge, extending and accelerating fixed and mobile broadband deployment has been one of the Commission’s top priorities over the past few years.”).

<sup>14</sup> *CBRS Order* at 3962 (para. 6).

<sup>15</sup> *Id.*

<sup>16</sup> *Id.* at 4142 (Statement of Commissioner Ajit Pai Approving in Part and Concurring in Part).

Even at this early juncture, before the Spectrum Access System (“SAS”) mechanism—the “lynchpin” of CBRS<sup>17</sup>—has been made operational,<sup>18</sup> there is strong evidence that the Commission’s experiment is working and its CBRS framework is taking hold. Viaero, which operates as an incumbent carrier in the 3650-3700 MHz band, serves as a prime illustration that the Commission made the right choices in the *CBRS Order*.

Viaero holds a non-exclusive nationwide license in the 3650-3700 MHz band and has registered approximately 400 individual base stations in the Commission’s Universal Licensing System. Since the Commission adopted the *CBRS Order* two years ago, Viaero, in reliance on the CBRS framework created in the *Order*, has aggressively invested in expanding its operations in the band to bring fixed broadband services to rural consumers. Viaero has invested over \$3.5 million in infrastructure, and has begun rolling out service in rural areas, and collecting 2,000 customers on its ProConnect platform, a service that is currently doubling subscribers annually. Within three years, Viaero could have over 20,000 customers on its ProConnect service.

The 3.65 GHz band has enabled Viaero to significantly increase the quantity of service it can provide home users compared to its mobile Internet product that operates on cellular/PCS/AWS frequencies. Viaero’s customers now receive unlimited data at \$65 for 15 Mbps, with faster speeds available to business users.<sup>19</sup> To date, ProConnect customers are averaging over

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<sup>17</sup> *Id.* at 3962 (para. 7).

<sup>18</sup> See Remarks of FCC Commissioner Michael O’Rielly before the CBRS Alliance, San Diego, California, Aug. 1, 2017, at 1, accessed at <https://www.fcc.gov/document/commissioner-orielly-remarks-cbrs-alliance> (noting that “[i]t sounds like work on the SAS is progressing, with systems tests expected to start around the January timeframe”).

<sup>19</sup> For a complete list of Viaero’s rate plans for ProConnect service, visit: <http://www.viaero.com/shop/plans/home-phone-internet/proconnect>. Viaero notes that, if it is able to obtain PAL licenses in the 3550-3650 MHz segment of the CBRS band, it will be able to provide 25/3 Mbps broadband service. If, however, Viaero operates only in the 3650-3700 MHz GAA segment, and does not have protected access to the 3550-3650 MHz segment, then these higher speeds will likely not be attainable.

300 GB of usage per month, a usage rate comparable to ordinary fixed wireline broadband services. These speeds and volume levels are being made available in remote rural areas where traditional landline offerings are weak or non-existent.

It is worth noting that although Viaero requires no subsidies to roll out these innovative offerings in the 3650-3700 MHz band, its provision of these services may not have been possible without Viaero's receipt of funding from the Universal Service Fund ("USF") high-cost support mechanism. This support has been critically important in enabling Viaero to construct cellular towers and high-speed backhaul links in its rural service areas. With that infrastructure in place, Viaero's investment of its own funds for equipment and electronics in the 3650-3700 MHz band has expanded broadband service in many rural areas. Viaero's ability to leverage its high-cost support, in connection with its utilization of spectrum in the 3650-3700 MHz band, illustrates how the Commission's USF program continues to pay dividends for rural consumers.

Commenters responding to the *Public Notice* have provided substantial evidence that stakeholders are embracing the new CBRS framework and are moving forward with plans to utilize GAA spectrum in the 3650-3700 MHz band. WISPA indicates that "successful deployment is already widely occurring,"<sup>20</sup> pointing out that, since the adoption of the *CBRS Order*, "stakeholders have worked hard to bring the promise of the CBRS band to commercial fruition."<sup>21</sup> WISPA notes

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<sup>20</sup> WISPA Comments at 13.

<sup>21</sup> *Id.* at 5. See Open Technology Institute at New America and Public Knowledge (collectively, "Public Interest Organizations") Comments at 12-19. The Public Interest Organizations explain that:

The underutilized 3550-3700 MHz band is already attracting substantial investment based on the technical and regulatory rules adopted by the Commission in the 2015 *CBRS Order*. The new framework's combination of small area, short-term licensing (Priority Access Licenses) and band-wide opportunistic access, open to anyone (General Authorized Access),

that, since the adoption of the *Order*, the Commission has registered more than 23,000 locations in the 3650-3700 MHz band for a variety of licensees, including rural WISPs, enterprise broadband providers, energy companies, municipalities and government agencies, telecommunications cooperatives, private networks, resorts, and educational institutions.<sup>22</sup>

Federated Wireless explains that, “[f]ollowing the adoption of the *CBRS Order*, industry interest in, and momentum toward, the dense, widespread commercial use of the CBRS spectrum has continued to grow at a tremendous rate.”<sup>23</sup> In partnership with other companies, “Federated Wireless has completed or has underway more than 40 trials, some of which are large-scale field trials, of CBRS technology and operations. Other stakeholders are similarly engaged in widespread preparations for commencement of commercial operations.”<sup>24</sup>

For example, Indigo Wireless, an incumbent in the 3650-3700 MHz band that has invested nearly \$1 million in network improvements, endorses rules adopted by the Commission in the *CBRS Order* that will “allow Indigo and other 3.65 GHz license holders to safely transition their

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has so far stimulated interest, investment activity and innovative use cases that exceed expectations.

*Id.* Southern Linc observes that various stakeholders have been acting to develop innovative uses for the GAA band:

The real-world examples of deployments and services that have already taken place in the 3650-3700 MHz band, together with the trials that are already being carried out in the 3550-3650 MHz band pursuant to experimental licenses, demonstrate the variety and diversity of deployment models and use cases for the CBRS band under the regulatory framework adopted in 2015.

Southern Linc Comments at 3-4 (footnote omitted).

<sup>22</sup> WISPA Comments at 10-11.

<sup>23</sup> Federated Wireless, Inc. (“Federated Wireless”), Comments at 3 (footnote omitted).

<sup>24</sup> *Id.* at 7 (footnote omitted).

operations into the [CBRS] in the 3550-3700 MHz (3.5 GHz) band without compromising continuity of service to customers or jeopardizing investments toward growing and improved services.”<sup>25</sup> Numerous other parties have discussed investments and other actions they have taken relating to their operations in the CBRS spectrum band.<sup>26</sup>

Finally, intensive work is underway to develop CBRS standards. As All Points Broadband

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<sup>25</sup> Indigo Wireless, Inc. (“Indigo Wireless”), Comments at 2.

<sup>26</sup> See, e.g., Cal.Net Inc. Comments at 1 (stating that the company has operated in the 3650-3700 MHz band since 2011, “has invested several million dollars in equipment and infrastructure utilizing and supporting this band[,] [and with] the opening of the CBRS band (as defined under current FCC rules), we are embarking upon an aggressive growth path of an additional expected investment of over \$10 million in CBRS-enabled fixed-LTE equipment in our rural service areas over the next 30 months”); Celerity Broadband LLC Comments at 1 (indicating that the company has been “an early adopter of the 3650-3700 MHz band for use with LTE deployments, which has increased our reach to previously unserved and underserved consumers”); GigaBeam Networks Comments at 1 (stating that the company is investing \$450,000 this year, and up to an additional \$500,000 over the next two years, “to utilize LTE technologies to extend and upgrade our network using our current 3.65ghz light license as well as the hopes of using the CBRS band when it becomes available”); Internet Communications Inc. Comments at 1 (indicating that the company has “been making and continue[s] to make substantial investments (well over six figures) in the 3650-3700 MHz NN spectrum band”); In the Stix Broadband Comments at 1 (unpaginated) (stating that the company has recently begun investing in LTE deployments in the 3.5 GHz band); MetaLINK Technologies, Inc., Comments at 1 (indicating that the T-Mobile and CTIA proposals “would undermine existing investment in 3650-3700 MHz and inhibit further investment and deployment in the entire 150 Megahertz of spectrum”); Ruckus (business unit of Brocade Communications Systems, Inc.) Comments at 6 (unpaginated) (emphasis in original) (noting that “[a] key principle embodied in the current CBRS framework is that operation at the PAL and GAA tiers is a realistic opportunity for *all* types of CBRS deployers and operators, and this principle is driving significant early investment in CBRS by a broad ecosystem of players”); Softcom Internet Communications, Inc. Comments at 1 (stating that, “[s]ince 2011, we have invested significantly in equipment which provides service to our customers in the 3650-3600 band. We have recently begun investing in LTE equipment in the past two years”); Shelby Broadband Comments at 1 (stating that “[w]e have deployed many devices in the 3.65GHz band and have made substantial investments to continue to deploy in this band. This band is important to the future of our business and the additional CBRS spectrum will allow us to provide even faster speeds to our customers. We have spent over \$100,000 in equipment and plan to spend another \$250,000 once the CBRS band has been fully approved.”); Splash Wireless Internet, LLC, Comments at 1 (stating that “[w]e have planned to invest in LTE technology to create a better service for our customers utilizing the existing 3.650-3.700 MHz. We have planned the upgrade beginning this fall, partnering with school districts, city fire, EMS, Police to bring quality affordable Internet to enrolled families of the school district, and 700 MHz public safety to the Public Safety Entities. To date, we have planned on an initial investment of over \$615,000.00 for the CBRS band. This 3.650-3.700 MHz is critical to our operation and the ability to get High Speed Internet to enrolled families of these school districts in our planned coverage areas. The primary reason for using LTE was the introduction of the CBRS band.”).

has explained, “[w]ithin the Wireless Innovation Forum, 47 companies are developing CBRS standards, and 52 companies from a broad range of wireless industry sectors have joined the CBRS Alliance to develop certification procedures, standards, and business opportunities for LTE-based CBRS systems.”<sup>27</sup> All Points Broadband indicates that “[t]his work represents a large investment of financial resources and manpower by businesses that are bringing this valuable new spectrum resource into widespread commercial use.”<sup>28</sup>

**B. The T-Mobile Petition Is Having a Chilling Effect on Stakeholder Actions Taken in Reliance on the Commission’s Decision to Make the 3650-3700 MHz Band Available for General Authorized Access.**

The Commission acknowledged in the *CBRS Order* that the record in the rulemaking proceeding included “substantial evidence from commenters that are interested in investing in a three-tier band[,]”<sup>29</sup> leading the Commission to conclude that it would not be “in the public interest to delay or compromise . . . implementation” of the three-tier CBRS regulatory framework.<sup>30</sup> As discussed in the previous section, numerous stakeholders have already been making these investments and taking other actions in reliance on the new CBRS rules,<sup>31</sup> giving weight to the view that there

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<sup>27</sup> Letter from All Points Broadband, *et al.* (“All Points Broadband”), to Chairman Pai, Commissioner Clyburn & Commissioner O’Rielly, GN Docket No. 12-354 (June 1, 2017) (All Points Broadband Letter”), at 1.

<sup>28</sup> *Id.*

<sup>29</sup> *CBRS Order*, 30 FCC Rcd at 3979-80 (para. 58).

<sup>30</sup> *Id.* at 3980 (para. 58).

<sup>31</sup> *E.g.*, All Points Broadband Letter at 3 (stating that “CBRS is no longer an experiment. Operators are trialing equipment in many areas throughout the country. SAS systems have been tested. Standards are well under way.”); RWA-NTCA Comments at 3 (observing that, since the adoption of the *CBRS Order* and the Commission’s reconsideration of the *Order* last year, “a wide array of diverse stakeholders—including small and rural telecommunications and broadband providers throughout the country—have invested resources toward new and innovative deployments while relying upon a predictable regulatory framework”); Sony Electronics Inc. Comments at 1 (indicating that “Sony has devoted time and manpower based on the expectation that the Commission would remain committed to rules that it put in place over two years ago and reaffirmed just last year”).

is an increasingly strong likelihood that the Commission’s CBRS framework, designed to make utilization of the 3.5 GHz band spectrum more productive, will work.

“And then ...[,]” as WISPA observes, “petitions for rulemaking appear, the mere filing of which” creates uncertainty that threatens “to curb spectrum innovation, stifle investment from non-cellular providers, and deny fixed broadband service to rural Americans.”<sup>32</sup>

T-Mobile points out that “[c]arriers require a stable and predictable spectrum environment in order to engage in effective network planning[,]”<sup>33</sup> and this observation resonates in the case of carriers and other stakeholders that have been making investments, developing equipment, utilizing experimental licenses, and taking other actions in reliance on the CBRS regulatory framework adopted by the Commission in the *CBRS Order* just two years ago.

Notwithstanding its concerns regarding stability and predictability, T-Mobile’s request for a “do-over” rulemaking<sup>34</sup> threatens to destroy the stable and predictable spectrum environment needed by 3650-3700 MHz band stakeholders, and is having a chilling effect on these stakeholders’ activities in the band. Indigo Wireless pointedly sums up the problem:

[A]fter hearing the news that T-Mobile and CTIA had formally filed rulemaking petitions and knowing the clout and influence these parties can have at the FCC, Indigo has halted issuing purchase orders for additional equipment. After relying on the license framework that was adopted in 2015, Indigo simply cannot afford to speculate on the future of the CBRS.<sup>35</sup>

To avoid the continuation and expansion of this problem, the Commission must promptly reject the T-Mobile proposal.

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<sup>32</sup> WISPA Comments at 6 (ellipsis in original).

<sup>33</sup> T-Mobile Petition at 15.

<sup>34</sup> Indigo Wireless Comments at 2.

<sup>35</sup> *Id.*

**C. T-Mobile’s Proposal to Dismantle CBRS Is Flawed and Unsupported, and Would Have Adverse Consequences for Incumbent Users in the 3650-3700 MHz Band.**

The T-Mobile proposal is a transparent attempt to roll back the clock and abolish the CBRS regulatory framework adopted by the Commission two years ago. Viaero agrees with WISPA that “[t]he Commission cannot seriously entertain this proposal.”<sup>36</sup>

**1. The T-Mobile Proposal Would Tear Down the Commission’s CBRS Regulatory Framework.**

Viaero agrees with Federated Wireless that T-Mobile’s proposal to capture the entire 150 megahertz of CBRS spectrum for use by PAL licensees amounts to an undisguised “attempt to transform the innovative three-tier sharing framework into a traditional exclusive licensing scheme, with the practical effect of undermining the dense sharing regime the Part 96 rules seek to enable.”<sup>37</sup> Viaero also shares Federated Wireless’s concern that the proposal would “eviscerate the GAA tier, as the opportunistic use T-Mobile proposes would be insufficient to support the development of the GAA ecosystem envisioned by the Commission in the *3.5 GHz Order*.”<sup>38</sup>

T-Mobile’s proposal to auction the entire 3550-3700 MHz band as PAL licenses would freeze out small operators, who would not be able to afford purchasing licenses at auction, particularly licenses for Partial Economic Areas or Basic Trading Areas. The economics of the rural networks maintained by these small operators simply would make it impossible for them to spend

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<sup>36</sup> WISPA Comments at vi.

<sup>37</sup> Federated Wireless Comments at 5. *See* WISPA Comments at 26 (indicating that, “[t]aken together [with T-Mobile’s suggestion that the Commission should establish a 50 megahertz spectrum cap to accommodate three licensees], T-Mobile’s proposal would convert the CBRS to another garden variety ‘command and control’ licensed band, a scheme diametrically opposed to the model the Commission adopted just two years ago based on a full and complete record”).

<sup>38</sup> Federated Wireless Comments at 5. *See* Southern Linc Comments at 5 (arguing that “T-Mobile requests that GAA be effectively eliminated”).



huge sums in PAL license auctions. It would be highly likely that large carriers would dominate a 3.5 GHz auction for PAL licenses. Although their presumed intent would be to utilize the acquired spectrum to deploy 5G technologies in densely populated urban areas,<sup>39</sup> it is likely that a portion of the large carriers' PAL spectrum would be warehoused in rural areas, precluding its use for the further deployment of high-speed broadband for rural consumers.<sup>40</sup> It would be much less likely that these auction winners would lease portions of their 3.5 GHz spectrum pursuant to existing secondary market rules.<sup>41</sup>

If Viaero has 20,000 customers spread across Colorado and Nebraska, it can thrive under the current system, but adding a multi-million dollar auction price tag makes it economically unfeasible and chills rural broadband deployment. The prices at prior auctions for Viaero's region have collectively run \$10-30 million—at that price there is no business model for a rural broadband business that Viaero is attempting to build.

The bottom line is that eliminating the GAA tier would make it extremely difficult, if not impossible, for small rural broadband providers such as Viaero to continue utilizing 3650-3700 MHz spectrum. Opportunistic use of the tier would become “entirely unpredictable and unviable.”<sup>42</sup> That uncertainty would be fatal for small rural broadband carriers—after they have taken the steps of purchasing equipment, setting up product offerings, and advertising their new offerings, they need to be able to deliver service reliably and consistently. Being limited to opportunistic

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<sup>39</sup> See T-Mobile Petition at 1.

<sup>40</sup> See the discussion in Section II.C.3., *infra*.

<sup>41</sup> See WISPA Comments at 18 (stating that “there is no obligation on the part of PAL holders to lease their spectrum to third parties. This is true for all licensed bands, and there are cases where licensees choose to retain unused spectrum rather than lease it to third parties that would deploy commercial service.”).

<sup>42</sup> Rural Wireless Association (“RWA”) and NTCA—The Rural Broadband Association (“NTCA”) (together, “RWA-NTCA”) Comments at 6.

use of the GAA tier would make it extremely difficult for small operators to deliver this reliability and consistency for their customers. In addition, small rural carriers would find it difficult to compete against “well-heeled buyers” in PAL auctions for all 150 megahertz of spectrum in the 3.5 GHz band.<sup>43</sup> The conclusion is inescapable that T-Mobile’s proposal “would defeat the entire purpose of the Commission’s decision to establish CBRS in the first place.”<sup>44</sup>

WISPA sums up the sweeping implications of the T-Mobile proposal by explaining that T-Mobile’s plan would “virtually ensure that access to 150 megahertz of licensed spectrum will be limited to three large mobile carriers, cause massive interference to existing 3650-3700 MHz users and their customers, entirely eliminate the spectrum allocation [GAA] use, and destroy any opportunity for the band to help close the urban-rural digital divide.”<sup>45</sup>

Viaero’s plans to continue its efforts to utilize 3650-3700 MHz spectrum to better serve its existing customers, and to reach new customers, with high-speed fixed wireless broadband services would be seriously jeopardized if T-Mobile were permitted to hijack the GAA tier. The Commission two years ago adopted workable mechanisms to enhance the productive use of the 3.5 GHz band, and Viaero and other stakeholders have responded by taking steps that are moving the Commission’s experiment along a path toward success. There is no basis for T-Mobile’s suggestion that the Commission now should hit the “reset” button and impose an exclusive licensing scheme that would effectively take the 3.5 GHz band out of play in rural areas.

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<sup>43</sup> *Id.* at 6-7. *See* Virginia Broadband, LLC, Comments at 1 (arguing that the proposed “rulemaking changes [would] effectively hand over spectrum power to a few telecoms while forsaking the very [WISP] industry that is actively curing the rural digital divide”).

<sup>44</sup> Southern Linc Comments at 9.

<sup>45</sup> WISPA Comments at 2.

## 2. Turning the GAA Tier into Exclusive Spectrum for PAL Licensees Would Disrupt Incumbent Operations in the 3650-3700 MHz Band.

The Commission made it clear in the *CBRS Order* that it was striving “to minimize the adverse effects of rule changes on incumbents to the extent possible without compromising the public interest benefits that we believe such rules changes will produce.”<sup>46</sup> The Commission stressed that its “decision not to allow Priority Access use in the 3650-3700 MHz band segment means that this portion of the band will continue to be licensed on a non-exclusive basis, and thus will continue to be available on a non-exclusive basis to former Part 90 incumbents.”<sup>47</sup>

T-Mobile’s proposal would undo these protections for incumbents. Viaero agrees with EWA that:

[L]imiting sharing to GAA, and not PAL, operations represented the least objectionable balancing of the various types of uses the Commission expects to be deployed across this allocation. Expanding the availability of this portion of the band [*i.e.*, the 3650-3700 MHz GAA segment] as requested by T-Mobile would disrupt the FCC’s careful calibration before it even has been tested and cannot be viewed as serving the public interest.<sup>48</sup>

WISPA argues that the Commission’s decision in the *CBRS Order* constituted a compromise that involved various trade-offs for incumbents in the 3650-3700 MHz band. Incumbents were grandfathered, allowed to register new locations and deploy service, and permitted to compete in the PAL auctions for spectrum in the 3550-3650 MHz band. On the other hand, the grandfather period was limited to five years,<sup>49</sup> re-registration of sites was required to preserve grandfathering, and

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<sup>46</sup> *CBRS Order*, 30 FCC Rcd at 4074 (para. 394).

<sup>47</sup> *Id.* at 4074 (para. 395) (footnote omitted).

<sup>48</sup> Enterprise Wireless Alliance (“EWA”) Comments at 4-5.

<sup>49</sup> Viaero supports, at a minimum, Leidos’s proposal to “extend[ ] the interference protection period to grandfathered operators by an additional five years[,]” since this “would be instrumental for ensuring no interruption to critical services during the transition to any new rules adopted by the Commission.” Leidos, Inc. (“Leidos”), Comments at 3.

incumbents were required to operate pursuant to the new SAS regime, with the likely prospect of paying SAS fees.<sup>50</sup>

Viaero agrees with WISPA's conclusion that, "[i]f T-Mobile were to get its way, the trade-off instantly devolves into a one-sided deal where existing licensees are evicted from the band and have only opportunistic use available."<sup>51</sup> Ultimately, if PALs are permitted in the GAA band segment, "tens of thousands of consumers receiving fixed broadband and other services from thousands of registered base stations and CPE will lose service entirely or suffer massive interference from new PALs."<sup>52</sup>

The record amply demonstrates that T-Mobile's proposal is in conflict with the Commission's CBRS framework and its policies for incumbents' continued use of the 3650-3700 MHz band. The Commission provided protections to GAA band incumbents, while also requiring them to meet certain requirements. Viaero, which has operated in the band for some time and, as explained above, has coupled USF high-cost support with its own investments in order to bring high-speed fixed mobile broadband to rural consumers, is concerned that T-Mobile's proposal will erase the Commission's incumbent protections and risk driving incumbents out of the band.

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<sup>50</sup> WISPA Comments at 30.

<sup>51</sup> *Id.*

<sup>52</sup> *Id.* at 28 (footnote omitted). *See* Charter Communications, Inc., Comments at 5 (internal quotation marks and footnote omitted) (stating that the "careful balancing of interests in the 3650-3700 MHz band is also critical to attracting investment by GAA users throughout the entire 3.5 GHz Band. Any changes to this policy must consider the resulting impact on the goal of promoting spectrum availability, efficiency, and usability as well as the potential for increased disruption to incumbent users.").

### 3. The T-Mobile Proposal Is Not Technologically Neutral, and It Would Result in Spectrum Warehousing.

The T-Mobile proposal ignores “the Commission’s longstanding policies promoting technological neutrality”<sup>53</sup> by effectively “foreclos[ing] use [of the GAA band] by anything other than 5G.”<sup>54</sup> Viaero agrees with Federated Wireless that T-Mobile, in arguing that expropriating the 3650-3700 MHz band for use by PAL licensees is necessary to give carriers incentives to invest in 5G technologies,<sup>55</sup> “ignores the fact that the CBRS is explicitly a *technologically neutral* service ...”<sup>56</sup> T-Mobile also ignores the fact that the Commission’s “regulatory framework for CBRS balances the needs of multiple industry segments in order to accommodate innovation.”<sup>57</sup>

Viaero also agrees with RWA-NTCA that the Commission’s CBRS framework for the 3.5 GHz band “help[s] prevent spectrum warehousing.”<sup>58</sup> In contrast, the T-Mobile proposal, by limiting the scope of potential GAA deployments,<sup>59</sup> conflicts with the Commission’s policies because the proposal “could encourage spectrum warehousing and disincentivize efficient use of the

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<sup>53</sup> *CBRS Order*, 30 FCC Rcd at 4031 (para. 228).

<sup>54</sup> WISPA Comments at 27.

<sup>55</sup> See T-Mobile Petition at 1.

<sup>56</sup> Federated Wireless Comments at 7 (emphasis in original).

<sup>57</sup> Motorola Solutions, Inc., Comments at 2. See Google Inc. and Alphabet Access Comments at 12-13:

The big carriers’ changing positions on appropriate commercial uses for the 3.5 GHz band underscore that no one can predict future spectrum uses with certainty. This is true of the private sector as well as regulators. For this reason, the FCC should not attempt to predict the technology, business model, or group of companies that will best make use of the 3.5 GHz band. Instead, it should maintain rules that enable any potential operator to explore different uses, take risks, and follow market forces. This approach has been the hallmark of the Commission’s best policy decisions, including the CBRS framework.

<sup>58</sup> RWA-NTCA Comments at 7.

<sup>59</sup> See *id.*

band.”<sup>60</sup>

There is no basis for the Commission to seriously entertain a proposal that flouts the Commission’s policies favoring technological neutrality while also opening the door for spectrum warehousing. The Commission instead should avoid the risk of these outcomes by rejecting the T-Mobile proposal.

#### **4. T-Mobile Fails to Provide Any Plausible Support for Its Proposal.**

T-Mobile attempts to justify its proposal to dismember the Commission’s CBRS regulatory framework and deny small rural carriers and other stakeholders access to the 3650-3700 MHz band, by claiming that this reversal of the Commission’s policies adopted in the *CBRS Order* “will promote greater use of the 3.5 GHz band . . . .”<sup>61</sup> There is no rational basis for concluding that such increased level of use would occur, especially in rural areas, where it is more likely that the GAA spectrum would be warehoused by PAL licensees.<sup>62</sup>

Further, as discussed in the previous section, even if T-Mobile were correct as a general matter that abolishing the three-tier structure for the 3.5 GHz band would promote investment in

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<sup>60</sup> *CBRS Order*, 30 FCC Rcd at 3983 (para. 73), *quoted in* RWA-NTCA Comments at 7. *See* Rural Broadband Network Service LLC Comments at 2 (arguing that the T-Mobile proposal, coupled with CTIA’s petition for rulemaking, “will change this [3650-3700 MHz] band from an innovation band to just another hoarded spectrum real estate”).

<sup>61</sup> T-Mobile Petition at 1.

<sup>62</sup> *See* Bill Coleman, President, Community Technology Advisors, *5G Wireless as Rural Solution: Not Any Time Soon*, (Feb. 6, 2017), Blandin Foundation, Blandin on Broadband, *accessed at* <https://blandinon-broadband.org/2017/08/02/ala-opens-application-period-for-libraries-ready-to-code-grants/> (explaining that 5G deployment is not likely to occur in rural areas in the near-term, in part because “[d]eployment of 5G wireless services will require significant fiber deployment, more than either the current 4G wireless cellular network or the new CAF2 Fiber to the Node . . . installations by large incumbent providers. Rural 5G wireless services would require installing radios every 1,000–3,000 feet on towers and poles. These small cells would require direct fiber connections and all of them would require electricity to power the radios. . . . Fiber networks, to the home or to the node with very short loop lengths, will be a requirement to support future 5G wireless services. First fiber, then 5G. Not the other way around.”).

5G technologies, such an approach nonetheless would force the Commission to deviate from its principle of technological neutrality. Moreover, it is unlikely that any appreciable investment in 5G technologies would occur in rural areas.

T-Mobile also claims that seizing GAA spectrum for PAL use would likely generate additional auction revenues.<sup>63</sup> Viaero agrees with WISPA that little weight can be given to T-Mobile's conjecture. WISPA explains that the degree and level of bidding can be affected by auction procedures, which have not yet been adopted by the Commission, and, in any event, "[b]y foreclosing participation for all but a handful of bidders, there will be fewer bidders competing for PALs, which will tend to drive down the price of winning bids."<sup>64</sup>

As commenters have observed, the fact is that the T-Mobile Petition, in seeking to capture the 3650-3700 MHz band for the exclusive use of PAL licensees, is simply retreading a position that was considered and rejected by the Commission in the 3.5 GHz rulemaking. EWA, for example, explains that the Commission explicitly concluded in the *CBRS Order* "that it is in the public interest to limit use of the 3650-3700 MHz band to GAA operations[.]"<sup>65</sup> and that T-Mobile has

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<sup>63</sup> T-Mobile Petition at 11. T-Mobile asserts that, "while the Commission cannot make revenue generation the primary basis for deciding auction procedures, the Commission is not foreclosed from taking it into consideration." *Id.* at 11 n.41.

<sup>64</sup> WISPA Comments at 29.

<sup>65</sup> EWA Comments at 2 (quoting *CBRS Order*, 30 FCC Rcd at 4074 (para. 394)). *See* City of New York Comments at 2 (arguing that "[i]nitiating a rulemaking in response to the petitions of T-Mobile and CTIA would take us backwards, rewinding Commission decisions already made and unanimously agreed to and sending back to square one much of the collaborative efforts to bring this technology to market"); Federated Wireless Comments at 8. Viaero also agrees with EWA's observation that CTIA apparently disagrees with T-Mobile's view that the Commission's CBRS structure will not be viable unless it includes PAL access to the 3650-3700 MHz band, since the CTIA Petition does not seek to convert that band to PAL use. EWA Comments at 4. *See* Federated Wireless Comments at 8 (noting that "[i]t is ... unsurprising that no other carrier or wireless trade association has joined in T-Mobile's request, despite T-Mobile's protestations that its proposal is necessary to promote carrier investment in the band"). Comments filed by CTIA in this proceeding, on July 24, 2017, did not endorse, or even reference, the T-Mobile proposal.





### III. CONCLUSION.

Viaero respectfully recommends that the Commission reject the request made by T-Mobile to designate the entire 3.5 GHz band for use by holders of Priority Access Licenses, because T-Mobile's request is unsupported, it is an attempt to relitigate issues considered and decided by the Commission in the *CBRS Order*, and it would not serve the public interest.

Respectfully submitted,

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August 8, 2017

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