

**Before the  
Federal Communications Commission  
Washington, DC 20554**

In the Matter of )  
 )  
Expanding Flexible Use of the ) GN Docket No. 18-122  
3.7 to 4.2 GHz Band )

To: The Commission

**COMMENTS OF THE PUBLIC INTEREST SPECTRUM COALITION**

Open Technology Institute at New America  
Consumers Union  
Consumer Federation of America  
National Hispanic Media Coalition  
American Library Association  
Next Century Cities  
Public Knowledge  
Common Cause  
Institute for Local Self Reliance  
Access Humboldt

*October 29, 2018*

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**COMMENTS OF THE PUBLIC INTEREST SPECTRUM COALITION**

The undersigned nonprofit organizations, members of the Public Interest Spectrum Coalition (“PISC”) hereby submit these comments in response to the Commission’s Notice of Proposed Rulemaking (“NPRM”) in the above-captioned proceedings.<sup>1</sup>

**I. SUMMARY AND INTRODUCTION**

The Public Interest Spectrum Coalition (PISC) strongly supports the Commission’s proposal to open unused spectrum in the 3.7-4.2 GHz band for a point-to-multipoint (P2MP) fixed wireless service that empowers providers to extend high-speed broadband to rural, tribal, small town and other underserved areas. The Commission’s proposal to authorize coordinated, shared use of the 3.7 GHz band is an essential component of a potential win-win-win solution that achieves three vital public interest outcomes: first, to enable fixed wireless providers to bring high-speed broadband access to rural and other underserved areas; second, to reallocate a substantial portion of the band available for mobile 5G networks; and third, to protect incumbent Fixed Satellite Services (FSS) licensees from undue disruption or harmful interference.

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<sup>1</sup> Notice of Proposed Rulemaking, *Expanding Flexible Use of the 3.7 to 4.2 GHz Band, Order and Notice of Proposed Rulemaking*, GN Docket No. 18-122, FCC 18-91 (rel. July 13, 2018) (“NPRM”).

The Commission should allow P2MP wireless broadband providers to coordinate shared use across the upper 300 megahertz of the band (3900-4200 MHz), on a first-in licensed basis. In addition, PISC urges the Commission to authorize opportunistic access (on a license by rule basis) by P2MP operations to any vacant frequencies in the lower portion of the band until such time as future “flexible use” licensees notify the Commission or a frequency coordinator that they are ready to commence service in a local area. With the benefit of an automated frequency coordination system, the Commission can once again adopt the “use it or share it” approach that it has already adopted for GAA use of vacant PAL spectrum (in CBRS) and for unlicensed use of locally-vacant flexible use spectrum in the post-incentive-auction 600 MHz band. Unlocking every megahertz of the grossly underutilized C-band will serve as part of the foundation for a more inclusive and robust 5G wireless ecosystem.

While opening access to unused spectrum across the entire band is critical to make high-speed broadband more universally available and affordable, PISC is also concerned about the process by which the lower portion of the band may be cleared and reassigned for “flexible use” licensing. PISC believes the “market-based” approach described in the *NPRM* is severely flawed. A private auction or negotiated sale controlled by a few incumbent and foreign-based companies, and with no return of the anticipated proceeds of \$10 to \$30 billion or more to the Treasury, amounts to a massive and needless giveaway of public assets. A “market-based” approach that is tantamount to a private auction or sale would be an end-run around Section 309(j) of the Communications Act in clear contravention of Congressional intent and precedent. The fact that four satellite operators are lucky enough to be the only cars parked in a half-empty public lot does not mean that they should receive a massive giveaway that needlessly denies the public *any* return on the spectrum.

A “market-based approach” that is tantamount to a private auction or sale would be an unlawful end-run around Section 309(j) that ignores more recent and repeated expressions of Congressional intent forbidding multi-billion dollar giveaways of federal revenue to licensees that never paid for spectrum. If the Commission allows a few incumbent licensees to decide among competing applicants (whether by “negotiated agreement” or private auction), this would not satisfy the Commission’s obligation in the public interest to use negotiation to avoid mutual exclusivity pursuant to Section 309(j)(6)(e) of the Communications Act. If it does, then – like the Cheshire Cat who taught Alice “the rules” of Wonderland – there will be nothing left of the Section 309(j) auction requirement except the grin. If the “negotiation” exception in Section 309(j) is satisfied by authorizing a private auction or a privately-negotiated sale as the mechanism to avoid mutual exclusive uses of the band, then the exception swallows the rule and 309(j)(1) is rendered meaningless. Congress did not recently add incentive auction authority to Section 309(j) because it intended to give the Commission the authority to give away tens of billions of dollars in public revenue with no return to the Treasury. The incentive auction authority under Section 309(j) that Congress adopted as part of the 2012 Spectrum Act is the *legitimate* “market-based approach” that can and should be designed to work for this band.

Without full transparency and close FCC supervision, a private sale is also likely to distort competition in the mobile market. Spectrum will be made available to potential bidders based only on maximizing the incumbent licensees’ profit rather than the broader public interest. Moreover, a private sale would set a dangerous precedent, suggesting that incumbent licensees should always wage maximum resistance against giving up or sharing unused spectrum unless the Commission agrees to give them *all* the public revenue that until now has always, with few exceptions, flowed back to the public, as Section 309(j) clearly intends.

## **II. ACCESS TO UNUSED C-BAND SPECTRUM CAN IMMEDIATELY ADDRESS THE HIGH-CAPACITY BROADBAND DIGITAL DIVIDE IN RURAL AND OTHER LESS DENSELY-POPULATED AREAS**

Rural, tribal and small town America lacks access to high-speed broadband at much higher rates than their counterparts in urban and suburban areas. This lack of access contributes to a growing gap between the vibrancy of local economies in rural areas compared to urban and suburban areas. Connectivity can impact social cohesion as well. Studies show both people and economic activity is moving out of rural areas lacking high-speed and affordable broadband.

Even in rural areas where high-speed broadband has been deployed, consumers are less likely to have a choice among competing providers and generally are more likely to pay more money for worse service. A major obstacle to bringing better access and more competition in the high-speed broadband market in rural areas is the cost of deployment, as fiber and other wireline technologies can be five-to-seven times or more costly and far slower to deploy in less densely-populated or topographically-challenging areas. More mid-band spectrum for point-to-multipoint (P2MP) fixed wireless, on the other hand, can serve as the public infrastructure that enables high-speed broadband in targeted, hard-to-reach rural areas at a fraction of the cost of fiber and other wireline technologies.

### ***A. The Gap in High-Speed Broadband Access and Affordability Harms Rural and Other Underserved Areas***

Rural areas lack access to any high-speed broadband service (based on the Commission's threshold of 25 megabits per second download and 3 megabits per second upload) at much higher rates than urban and suburban areas. The Commission's latest Broadband Deployment Report, from 2018, reported that roughly 30 percent of rural Americans live in a census tract where no internet service provider offers a fixed high-speed broadband service, while only 2

percent of the urban population lacks at least one provider offering 25/3 Mbps service.<sup>2</sup> As of December 2016, 16 percent of rural Americans lacked access to fixed terrestrial broadband service even at 10/1 Mbps.<sup>3</sup> Overall, more than 24 million Americans lack access to fixed terrestrial broadband at 25/3 Mbps.<sup>4</sup>

This data very likely understates the degree to which rural Americans lack access to high-speed broadband. The Commission measures access and deployment based on Form 477 data. Internet service providers can deem a census tract as “served” if they deploy to just one location within that census tract—a practice which leads to particularly distorted data in rural areas, where census tracts tend to be larger.<sup>5</sup> Additionally, providers are only required to disclose the speeds they could *feasibly* provide in a given census tract, not the speeds which consumers actually receive.

The availability gap in less populated areas is also reflected in a deep gap in broadband adoption between Americans in rural and urban areas. The Pew Research Center, in a September 2018 study, found that only 58 percent of rural Americans surveyed subscribe to home broadband, while 67 percent of urban Americans and 70 percent of suburban Americans said that

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<sup>2</sup> 2018 Broadband Deployment Report, (“2018 Broadband Deployment Report”), GN Docket No. 17-199 (Feb. 2, 2018), ¶ 50, Table 1.

<sup>3</sup> *Id.*, 738, n.261.

<sup>4</sup> 2016 Broadband Progress Report, 31 FCC Rcd 699 (Jan. 28, 2016), at ¶ 50 (“2016 Broadband Progress Report”), [https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-16-6A1](https://apps.fcc.gov/edocs_public/attachmatch/FCC-16-6A1).

<sup>5</sup> *Id.*, 738, n.261 (the average land area of census tracts without 25/3 Mbps access is 84.8 square miles compared to 5.9 square miles for census tracts with access). *See also* Max Garland, “WV broadband council chairman blasts FCC report, says data isn't correct,” *Charleston GazetteMail* (Feb. 8, 2018), [www.wvgazettemail.com/business/wv-broadband-council-chairman-blasts-fcc-report-saysdata-isn/article\\_d98cf35b-e9ac-5f82-93a9-b214770656db.html](http://www.wvgazettemail.com/business/wv-broadband-council-chairman-blasts-fcc-report-saysdata-isn/article_d98cf35b-e9ac-5f82-93a9-b214770656db.html) (“In an email, an FCC spokesman said this criteria could ‘somewhat overstate deployment,’ adding that census blocks are typically larger in rural areas.”).

they did.<sup>6</sup> Another survey, also from the Pew Research Center, revealed that 22 percent of all Americans who said they do not use the internet live in rural areas.<sup>7</sup>

Americans in rural and other underserved areas are disproportionately deprived of choice and price competition in the broadband market even when they *do* have access to high-speed service. The *2018 Broadband Deployment Report* did not include statistics on the number of providers available to rural Americans, but the Commission did include those figures in its 2016 Broadband Progress Report did, which reported that only 13 percent of Americans living in rural areas have more than one broadband provider, 48 percent have one provider, and 39 percent have none.<sup>8</sup> Further, even when rural consumers have access to broadband, they frequently pay more money for lower quality service despite the fact that, on average, they earn less than Americans living in urban areas.<sup>9</sup> The increased cost for worse service plays a significant role in keeping rural Americans offline, as one of the primary barriers to broadband adoption across the United States broadly is cost.<sup>10</sup>

Rural Americans' lack of high-speed broadband access brings wide-ranging harms, both economically and socially. Without high-speed broadband access, rural Americans are left at a

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<sup>6</sup> Monica Anderson, "About a quarter of rural Americans say access to high-speed internet is a major problem," *Pew Research Center* (Sep. 10, 2018), <http://www.pewresearch.org/fact-tank/2018/09/10/about-a-quarter-of-rural-americans-say-access-to-high-speed-internet-is-a-major-problem/>.

<sup>7</sup> Monica Anderson, et al., "11% of Americans don't use the internet. Who are they?," *Pew Research Center* (March 5, 2018), <http://www.pewresearch.org/fact-tank/2018/03/05/some-americans-dont-use-the-internet-who-are-they/>.

<sup>8</sup> 2016 Broadband Progress Report, ¶ 86, Table 6

<sup>9</sup> Sharon Stover, "Reaching rural America with broadband internet service," *PhysOrg*, (Jan. 17, 2018), <https://phys.org/news/2018-01-rural-america-broadband-internet.html#jCp>.

<sup>10</sup> "Research Shows Cost is Biggest Barrier to Broadband Adoption," *Benton* (Jan. 11, 2016), <https://www.benton.org/blog/research-shows-cost-biggest-barrier-broadband-adoption>; National Telecommunications and Information Administration, "Exploring the Digital Nation: Computer and Internet Use at Home" (2011); Federal Communications Commission, "93 Million Americans Disconnected from Broadband Opportunities," News Release (Feb. 23, 2010); Monica Anderson, "Digital divide persists even as lower-income Americans make gains in tech adoption," The Pew Research Center (March 22, 2017), <http://www.pewresearch.org/fact-tank/2017/03/22/digital-divide-persists-even-as-lower-income-americans-make-gains-in-tech-adoption/>.



disadvantage in relation to the modern workplace, educational system, access to online government services and many entertainment options. Nearly a quarter (24 percent) of rural Americans surveyed by the Pew Research Center survey said that access to high-speed broadband is a “major problem” in their local community, while only 9 percent of suburban Americans and 13 percent of urban Americans said the same.<sup>11</sup> This lack of access also deepens the “Homework Gap” that leaves unconnected students with fewer resources for their educations. According to the nonprofit EducationSuperHighway, despite the Commission’s progress bringing unconnected schools online through the E-Rate program, 6.5 million students remain unconnected at school—and 77 percent of those students reside in rural areas.<sup>12</sup>

Tangibly, this lack of broadband access leads to fewer opportunities in rural communities, which results in struggling economies and, subsequently, leads to people to moving away. Rural areas are experiencing a trend of people, and especially young people, leaving rural areas, partially because they have no internet access which damages their chances in education, business, and employment.<sup>13</sup> According to the Pew Research Center, 73 percent of rural counties had more people move away than move in between 2000 and 2015, with this trend

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<sup>11</sup> Monica Anderson, “About a quarter of rural Americans say access to high-speed internet is a major problem,” *Pew Research Center* (Sep. 10, 2018), <http://www.pewresearch.org/fact-tank/2018/09/10/about-a-quarter-of-rural-americans-say-access-to-high-speed-internet-is-a-major-problem/>.

<sup>12</sup> EducationSuperHighway, “2017 State of the States” (2017), [https://s3-us-west-1.amazonaws.com/esh-sots-pdfs/educationsuperhighway\\_2017\\_state\\_of\\_the\\_states.pdf](https://s3-us-west-1.amazonaws.com/esh-sots-pdfs/educationsuperhighway_2017_state_of_the_states.pdf).

<sup>13</sup> Kaleigh Rogers, “What It’s Like to Live in America Without Broadband Internet,” *Vice Motherboard* (April 16, 2018), [https://motherboard.vice.com/en\\_us/article/d35kbj/americans-who-dont-have-internet](https://motherboard.vice.com/en_us/article/d35kbj/americans-who-dont-have-internet) (“A lack of internet is forcing many young people to move away, fleeing their home states altogether to find modern career opportunities. It prevents areas already hard-hit by the demise of other industries, like coal, from finding new ways to make money online or telecommuting. A lack of internet access hurts businesses, hinders education, prevents people from getting jobs, and can even be life-threatening, as emergency services increasingly rely on internet-connected communications and documentation.”).

proving particularly strong in the Northeast and Midwest.<sup>14</sup> Employment plays a central role in the struggles of these rural areas. Of the 1,969 rural counties reviewed by the Pew Research Center, nearly 1,197 of them have fewer people employed currently compared to 2000.<sup>15</sup>

While other factors contribute to the trend of jobs and residents leaving rural areas, a lack of high-speed broadband access and its impact on both economic and social opportunities is an increasingly important factor. The town of Marlinton, West Virginia, struggles with nonexistent internet access; not one home outside of a local ski resort has high-speed broadband. That lack of access, according to a *Vice Motherboard* reporter who visited the town, makes it “more difficult for students to do their homework and access study resources, to preventing new businesses from opening and existing businesses from succeeding.” One resident of Marlinton lamented the effects of not having broadband access: “It affects so much of the economy in this county and we’re losing so much... I want my kids to stay here, but at this point there’s not much for me to offer them.”<sup>16</sup> In contrast, one expert discussing the Pew study noted that the rural areas that have broadband and have attracted some high-tech industries to their localities have done better keeping residents and maintaining employment.<sup>17</sup>

### ***B. Spectrum as Infrastructure for High-Speed Fixed Wireless Broadband can Boost Rural and Small Town Economies***

Internet service providers struggle to bring high-speed broadband to rural areas, primarily because deployment in less-densely-populated and lower-income areas is prohibitively

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<sup>14</sup> Stef W. Knight, “Why rural counties are dying in America,” *Axios* (June 20, 2018), <https://www.axios.com/the-dying-rural-counties-of-america-0fbcaa2f-dae5-47e3-99f7-e14693397e2a.html>.

<sup>15</sup> *Ibid.*

<sup>16</sup> *Ibid.*

<sup>17</sup> *Ibid.* (“Yes, but: Not all non-metropolitan areas are losing all of their young people. ‘Places that have somehow brought some high-tech industries to their boundaries have not done as poorly,’ William Frey of the Brookings Institution tells Axios.”).

expensive. The high costs of trenching or hanging fiber and other wireline broadband technologies in hard-to-reach rural areas often leads ISPs, especially larger companies, to see no business case for deploying in areas with low population density or low socioeconomic status.

On the other hand, fixed wireless provides a more cost-effective method of deploying high-speed broadband to specific, hard-to-serve rural areas. Lowering the cost of deployment in these areas will likely make the actual service more affordable for the customers in rural and lower-income areas, as high costs are a significant barrier to high-speed broadband adoption for rural Americans, even when and where it is available.<sup>18</sup> Jeff Kohler, co-founder and Chief Development Officer of Rise Broadband, says that the deployment cost of P2MP fixed broadband per subscriber is roughly \$250, less than one-fifth the cost of fiber.<sup>19</sup> Kohler argues that thanks to the fact that fixed wireless avoids the need to dig up the streets or bury fiber in hilly, forested or other rough terrain, it is much more economical to the provider.<sup>20</sup> The economical nature of fixed wireless is reflected in other studies as well, such as one from OVUM.<sup>21</sup>

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<sup>18</sup> Edward Carlson and Justin Goss, “The State of the Urban/Rural Digital Divide,” National Telecommunications and Information Administration Blog (Aug. 10, 2016), <https://www.ntia.doc.gov/blog/2016/state-urbanrural-digital-divide> (“Even today, some remote rural communities still lack Internet access at all or the service available may be poor or prohibitively expensive.”).

<sup>19</sup> Sarah Barry James, “Fixed wireless to shine in 2018 thanks to 5G, cost savings,” *S&P Market Intelligence* (April 6, 2018), <https://platform.mi.spglobal.com/web/client?auth=inherit#news/article?id=44144018&cdid=A-44144018-13616>.

<sup>20</sup> *Ibid.* (“It’s more economical because you’re not digging up streets, you’re not burying cable or burying fiber,” Rise Broadband co-founder and Chief Development Officer Jeff Kohler said, noting, “The cost to outfit a tower to provide service to 50, 100, 200 households is not very expensive.”).

<sup>21</sup> “OVUM White Paper Reveals Growth in Fixed Wireless as an Alternative to Fiber for Enterprise-Class Services,” *Business Wire* (March 15, 2018), <https://www.businesswire.com/news/home/20180315005732/en/OVUM-White-Paper-Reveals-Growth-Fixed-Wireless> (“Fixed wireless has a much lower upfront cost to build than fiber. This lower cost makes reaching certain locations more economically feasible.”).

Bringing high-speed broadband to rural areas, has the potential to stimulate economic activity and build small hubs of business in various rural communities. The rural broadband industry supported 69,595 jobs in 2015 through both “its own employment and the employment that its purchases of goods and services generated,” according to a study from the Hudson Institute.<sup>22</sup> That same study found that rural broadband supported more than \$100 billion in e-commerce the same year.<sup>23</sup> Local high-speed broadband providers can catalyze a local economy. For example, in the rural Lake County, Minnesota, residents mostly lacked access to high-speed broadband until the locality secured over \$80 million in investments to bring access there from the 2009 American Recovery and Reinvestment Act.<sup>24</sup> The area is now beginning to see the positive impact of broadband access on the local economy, as a study has found that the improved access in Lake County could bring tens of millions of dollars in the long term.<sup>25</sup>

The city of Lafayette, Louisiana, enjoyed a similar improvement to its economy thanks to improved broadband access. The city’s network, LUS Fiber, created roughly 2,000 jobs with average salaries of \$60,000 in just about a year and a half.<sup>26</sup> The improvement of high-speed broadband availability in the area brought multiple tech companies, and gave the city the nickname of “Silicon Bayou.”<sup>27</sup>

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<sup>22</sup> Hanns Kuttner, “The Economic Impact of Rural Broadband,” The Hudson Institute, (April 2016), <https://www.frs.org/sites/default/files/documents/2017-12/Hudson%202016%20The%20Economic%20Impact%20of%20Rural%20Broadband.pdf> at 4.

<sup>23</sup> *Ibid.*

<sup>24</sup> Phil McCausland, “Rural communities see big returns with broadband access, but roadblocks persist,” *NBC News*, (June 11, 2018), <https://www.nbcnews.com/news/us-news/rural-communities-see-big-returns-broadband-access-roadblocks-persist-n881731>.

<sup>25</sup> *Ibid.*

<sup>26</sup> “Transcript: Community Broadband Bits Episode 144,” Community Networks, (April 10, 2015), <https://muninetworks.org/content/transcript-community-broadband-bits-episode-144>.

<sup>27</sup> Lisa Gonzalez, “Three New Companies Move to the Silicon Bayou,” Community Networks, (Sep. 22, 2014), <https://muninetworks.org/content/three-new-companies-move-silicon-bayou>; “Municipal Networks and Economic Development,” Community Networks, <https://muninetworks.org/content/municipal-networks-and-economic-development>.

Efficient farming in the digital era also depends increasingly on fast, reliable broadband connectivity. The attraction of better high-speed broadband networks to rural areas is not only important in catalyzing the local economy and bringing new industries to a given area, but also to providing farmers with a valuable resource to power precision agriculture. Deere & Company, the company famous for its tractor manufacturing, has told the Commission that broadband is critical for agriculture in the modern era, adding that it is the base of “the economic heart of many American rural communities.”<sup>28</sup>

### **III. THE COMMISSION SHOULD AUTHORIZE COORDINATED SHARED USE OF UNUSED FREQUENCIES ACROSS THE ENTIRE 3.7 GHZ BAND FOR POINT-TO-MULTIPOINT FIXED WIRELESS SERVICE**

PISC commends the Commission for proposing to make unused spectrum in the 3.7-4.2 GHz band available for point-to-multipoint (P2MP) fixed wireless service that empowers providers to extend high-speed broadband to rural and other underserved areas. We strongly agree that “regardless of how much spectrum becomes available for flexible use in the near term,”<sup>29</sup> it is entirely feasible and desirable to authorize P2MP fixed wireless to “operate on a secondary basis *vis-à-vis* FSS in any part of the band in which FSS continues to operate during a transition period to accommodate repacking and, thereafter, on a frequency-coordinated basis to protect actual FSS operations.”<sup>30</sup> The Commission should authorize P2MP providers to coordinate shared use across the upper 300 megahertz of the band (3900-4200 MHz), on a first-in licensed basis.

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<sup>28</sup> *Ibid.* (“[T]he ability of farmers using Deere’s agricultural equipment and systems to improve efficiency, yield, and smart resource use will depend on their ability to leverage high speed broadband connections capable of enabling real-time M2M and machine to farm (M2F) interaction”).

<sup>29</sup> *NPRM* at ¶ 119.

<sup>30</sup> *NPRM* at ¶ 116.

PISC further urges the Commission to authorize opportunistic access (e.g., license by rule) by P2MP providers to any unused frequencies in the lower portions of the band until such time as future “flexible use” licensees notify the agency or a frequency coordinator that they are deployed and ready to commence service in a local area. With the benefit of an automated frequency coordination system, this approach can maximize the public interest benefits of the band, promoting enhanced rural connectivity while ensuring protection for both incumbent FSS and future mobile users from harmful interference.<sup>31</sup> As in the adjacent CBRS band, if fixed P2MP operators are frequency agile and governed by an automated Part 101 geolocation database, the reallocation of a portion of the band to mobile carriers or any other service (e.g., 3700-3900 MHz) can be accommodated as necessary. Since the process of automated frequency coordination would be equally effective across the entire 3.7-4.2 GHz band, to leave even a single megahertz vacant in rural areas is a lost opportunity to narrow the digital divide.

***A. Enormous Unused Capacity in Underserved Areas can be Unlocked for High-Capacity Fixed Wireless Service by Ending the Preclusive ‘Full-Band, Full-Arc’ Warehousing Policy***

PISC strongly concurs with the Commission’s proposal to end the antiquated full-band, full-arc coordination policy that allows FSS earth stations to reserve exclusive use of the entire 3.7 GHz band without regard to actual use.<sup>32</sup> Registered FSS earth stations are routinely assumed to be using all 500 megahertz across the entire 3700 – 4200 MHz band, even though

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<sup>31</sup> See Amir Nasr and Michael Calabrese, “WiFu, Coalition Present a ‘Win-Win-Win’ Proposal to Open Mid-Band Spectrum for High-Speed Rural Broadband,” New America’s Open Technology Institute Blog (summarizing and linking to a technical presentation made to the Commission on P2MP, available here: [https://newamericadotorg.s3.amazonaws.com/documents/BAC\\_Google\\_FCC\\_Technical\\_Preso\\_P2MP-FSS\\_Coex\\_FINAL\\_032718\\_1.pdf](https://newamericadotorg.s3.amazonaws.com/documents/BAC_Google_FCC_Technical_Preso_P2MP-FSS_Coex_FINAL_032718_1.pdf)).

<sup>32</sup> *NPRM* at ¶ 39.

most individual earth stations use only a small portion of the band.<sup>33</sup> This warehousing violates basic principles of spectrum management, particularly now that mid-band spectrum is scarce and perfectly suited to provide faster and more affordable fixed wireless broadband in underserved areas. We therefore agree with the Commission’s tentative conclusion that “for purposes of interference protection, earth station operators will be entitled to protection only for those frequencies, azimuths, and elevation angles and other parameters reported as in regular use (i.e., at least daily) . . . .”<sup>34</sup>

Although FSS incumbents opine that they *may* need access to currently unused portions of the band in the future, there is little dispute that currently more than 90 percent of the band’s spectral capacity lies fallow. For example, the BAC Petition noted that while 975 receive-only C-Band earth stations licensed to the Associated Press (as of 2017) reserve the entire 3700-4200 MHz range of spectrum, AP’s website stated that the service uses only a single, 23-megahertz satellite transponder for each of these earth stations.”<sup>35</sup> This means that as much as 477 megahertz of spectrum may not be in use in the area around AP’s earth stations. Another example is National Public Radio, which reports that its 475 radio earth stations use four FSS transponders that transmit between 3702 – 3858 MHz.<sup>36</sup> That means NPR is using a maximum of 160 MHz (including guard bands) in each of the 475 communities where it has registered a FSS earth station.

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<sup>33</sup> In stark contrast, Canadian earth stations seeking to coordinate with terrestrial FS stations in the United States provide more detailed information, including the specific transmit and receive frequencies, the antenna azimuth and elevation angles, and the orbital location of the satellite. The BAC Petition requested that FSS operators provide the same information to IBFS. *See, e.g.*, Public Notice, Request for Coordination of Canadian Earth Stations with USA Terrestrial Fixed Stations, Report No. SPB-268, (rel. March 29, 2017).

<sup>34</sup> *NPRM* at ¶ 39.

<sup>35</sup> BAC Petition at 23 & n. 42. The NOI notes that geostationary orbit FSS satellites “typically have 24 transponders, each with a bandwidth of 36 megahertz received by one or more earth stations.” NOI at ¶ 14.

<sup>36</sup> National Public Radio, *Ex Parte* Letter to Marlene H. Dortch, FCC, *Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz*, Notice of Inquiry, GN Docket No. 17-183 (Nov. 8, 2017).

There is also overwhelming evidence that many of the licensed FSS earth stations were never built, no longer exist, or operate at locations far removed from those for which they were licensed. These “ghost” earth stations further exacerbate the preclusive effect of “full band, full arc” coordination and licensing. Google Earth imagery shows that approximately 29% of IBFS-registered C-band FSS locations (again, as of 2017) were actually not in use for satellite services, despite being registered in IBFS.<sup>37</sup> In fact, 29% is a low estimate, since this does not include inactive dishes that remain in place.<sup>38</sup> Studies and filings by the Fixed Wireless Communications Coalition (FWCC) have reported similar findings.<sup>39</sup>

FSS incumbents – including satellite providers and their customers (content producers, MVPDs and broadcasters) – generally oppose an end to full-band, full-arc reservations. Incumbent FSS operators make a valid point: earth stations need to retain the capability to switch to a different transponder, or to a different satellite, to facilitate both service restoration and competition. In addition, any reallocation of the bottom portion of the band to mobile terrestrial use will require a transition period during which large numbers of FSS earth stations migrate to different transponders higher up in the band. This could, in turn, require the use of a previously vacant portion of the band that has become occupied by a new terrestrial licensee (whether fixed or mobile). PISC agrees that the frequency agility of P2MP entrants and their ability to protect FSS incumbents from harmful interference must be a condition of co-primary coordination.

The BAC Petition and proposal anticipated the need for FSS incumbents to switch transponders and frequencies and proposed both an automated database coordination mechanism

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<sup>37</sup> Comments of Google at 4.

<sup>38</sup> *Id.* “It can confidently be said that approximately one-third of IBFS-registered C-band FSS sites *or more* do not require protection because they either do not exist or are not in operation.” *Id.* at 5.

<sup>39</sup> FWCC Letter to FCC, Request for an Audit of Licensed Satellite Earth Stations in Bands Shared with the Terrestrial Fixed Service, Sept. 30, 2016 at 3. FWCC has requested an audit of FSS earth stations in June 2002, February 2004, November 2008, and September 2016. *See id.* at 1-2 and n. 2.



and a band-wide operability requirement for terrestrial equipment certified for use on the band.<sup>40</sup> The Commission already requires both of these sharing mechanisms (band-wide operability and a geolocation database) as a condition for any non-federal user to operate in the adjacent 3550-3700 MHz as part of the new Citizens Broadband Radio Service (CBRS). Introducing a similar requirement in the 3.7-4.2 GHz band to protect FSS incumbents would be less complex than CBRS due to the static nature of FSS and fixed wireless incumbents in the band. This is discussed further in Section just below.

In addition to full-band reservation, sharing of unused spectrum in this band is also unnecessarily constrained by the related (and excessive) ITU protection distances that have governed coordination. FSS sites require a 150-kilometer protection zone, precluding co-channel terrestrial operations within those protection zones unless first coordinated with the FSS licensee.<sup>41</sup> Federated Wireless observed, in response to the agency's *Mid-Band NOI*, that when the Commission considered the appropriate protection for earth stations in the context of its CBRS Order, the agency found those protection zones to be "excessively large, overly simplistic, and inefficient given the capabilities of SASs to predict realistic path loss."<sup>42</sup> PISC agrees that as part of its reexamination of the preclusionary impact of full-band, full-arc on the coordination of Fixed Service operators, the Commission should also reconsider what protection zones are

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<sup>40</sup> See, e.g., Comments of Broadband Access Coalition at 4 (hereinafter "BAC") (proposing to use and automate the existing Part 101 coordination process); Comments of Frontier Communications Corp., Windstream Services, LLC, and Consolidated Communications, Inc. at 7-8 ("the BAC proposal builds on a well-understood, existing framework, Part 101, and [would] make the framework readily updateable, whether through a future electronic coordination system or a spectrum access"); Comments of Microsoft at 9 ("the Commission should require the [Part 101] coordination process to be automated through a database in relatively short order after the new service is authorized through a multi-stakeholder process").

<sup>41</sup> See 47 C.F.R. § 90.1331.

<sup>42</sup> Comments of Federated Wireless, *Mid-Band Notice of Inquiry*, at 6, citing *Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*, Report and Order and Second Further Notice of Proposed Rulemaking, 30 FCC Rcd 3959 (2015), at ¶ 288.

necessary and take into consideration actual terrain and other local features (e.g., buildings) that operate to shield earth stations from terrestrial access points.

In sum, the Commission should clarify that earth station registrations provide priority access and interference protection only for the specific frequencies (and orbital slots) on which satellite earth stations are actually operating. In combination with a wholesale updating of the International Bureau Filing System – including the registration of non-registered receive-only stations – the band can be safely opened to substantial additional use in the public interest.

***B. An Automated Frequency Coordination System can Enable Access to Unused Spectrum Across the Entire Band Most Efficiently and with No Risk of Interference to FSS Incumbents or Future Mobile Licensees***

PISC recommends that the existing Part 101 frequency coordination process should be automated as soon as practical. Much as it did to facilitate a consensus on the implementation of CBRS, the Commission should authorize a multi-stakeholder process to develop and certify an *automated frequency coordination system* to facilitate the band-wide coordination of shared use by P2MP providers. Automating the coordination process for P2MP deployments – particularly customer locations – will speed the availability of service, lower costs to consumers, reduce the administrative burden on the agency, and better ensure that FSS earth stations and new mobile deployments will be fully protected from interference.

Because the Fixed Service is already co-primary across the entire band, a manual Part 101 coordination process is already well-established for point-to-point links. However, thanks to recent advances in geolocation database technology, frequency coordination can be done faster, at lower cost, and with the ability to ensure that opportunistic users (such as GAA use of vacant

licensed spectrum) are immediately denied permission to continue operating when an incumbent or higher-priority licensee commences service.

One or more automated frequency coordination (AFC) systems should be certified by the Commission to enforce real-time, real-world interference protection criteria for incumbent FSS earth stations, to enforce denials of permission to operate in areas where flexible use licensees eventually deploy and commence service, and to enable faster and more cost-effective coordination for P2MP deployments authorized under the proposed rules. AFC databases that incorporate real-world details on terrain, clutter (trees, buildings), and other GIS data sets can also enable far more intensive spectrum use.<sup>43</sup> The Commission should also require or at least encourage an AFC database that relies on propagation modeling informed by real-world GIS datasets that do not need to make generic, worst-case assumptions about interference.

Nothing as complex as the Spectrum Access System (“SAS”) that will soon manage access and coexistence in the neighboring CBRS band is needed to coordinate P2MP given the static nature of both FSS and P2MP deployments. Interference calculations in the 3.7–4.2 GHz band are particularly straightforward because the locations of both earth stations and proposed P2MP deployments would be geographically fixed and their operational parameters well-characterized. The directional nature of *fixed* wireless P2MP permits the coordination of sectors even where earth stations are in the area, but located outside the beam of the base station and the client device return path.<sup>44</sup> A database with up-to-date IBFS location and operational data can

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<sup>43</sup> See Monica Allevan, “Google and other databases likely to make spectrum sharing easier,” *Fierce Wireless* (Oct. 12, 2017), available at <https://www.fiercewireless.com/wireless/google-and-other-databases-likely-to-make-spectrum-sharing-easier>.

<sup>44</sup> See Broadband Access Coalition, Notice of Oral *Ex Parte* Presentation, GN Docket 17-183 and RM-11791 (March 29, 2018) (“Google/BAC Technical Presentation”). The technical analysis and presentation to FCC staff can be found at: [https://newamericadotorg.s3.amazonaws.com/documents/BAC\\_Google\\_FCC\\_Technical\\_Preso\\_P2MP-FSS\\_Coex\\_FINAL\\_032718\\_1.pdf](https://newamericadotorg.s3.amazonaws.com/documents/BAC_Google_FCC_Technical_Preso_P2MP-FSS_Coex_FINAL_032718_1.pdf).

quickly and inexpensively verify the coordination of any transmit point – including individual client locations – within the sector initially coordinated by a P2MP operator. The ability to quickly and inexpensively coordinate into unused spectrum to serve a group of homes or scattered sites on a hillside, for example, is particularly promising in rural areas where earth stations are both less numerous and more widely dispersed.<sup>45</sup>

PISC also recommends the early certification of an AFC system because it is the most reliable way to facilitate the coordinated use of unused spectrum capacity across the entire 3.7 GHz band, including on a use-it-or-share-it basis in any lower segments of the band that are reassigned or reserved for flexible use licensing. 5G mobile services may not be built out in rural and other less-densely-populated areas for many years. PISC therefore recommends that the Commission authorize P2MP operations to coordinate use of the middle and lower portions of the band on an *opportunistic basis* (e.g., licensed by rule), subject to AFC control and revocable permission to continue operating.

Under the reallocation framework described in the *NPRM*, there will be at least two and possibly three separate band segments that can be utilized on either a licensed or opportunistic basis for high-capacity fixed wireless P2MP. PISC urges the Commission to take advantage of the capabilities of an AFC system to authorize either licensed or at least opportunistic (use-it-or-share-it) access to P2MP across all three band segments.

***Upper Segment:*** PISC agrees that whatever portion of the band the Commission does *not* designate for clearing and reallocation to flexible use licensing, and that will remain in use for FSS, should be authorized for licensed point-to-multipoint use. P2MP operators should be

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<sup>45</sup> Based on matching registered earth station locations reported in IBFS with the National Land Cover Database, Google found that “approximately half of the FSS 4 sites are in urban areas, one-third are in rural areas, and 17% are in suburban areas.” Comments of Google LLC and Alphabet Access, *Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz*, GN Docket 17-183 (Oct. 2, 2017), at 8 (“Google Mid-Band NOI Comments”).

authorized to coordinate use under an expedited Part 101 process – and ultimately through an AFC system – and acquire interference protection rights on a first-in basis. This certainty for at least a portion of the spectrum used to serve rural and other underserved areas will help smaller providers to attract investment capital and to leverage opportunistic access to additional spectrum, both lower in the 3.7 GHz band and in the adjacent CBRS band (General Authorized Access, or GAA, spectrum).

***Lower Segment:*** Whether the Commission relies on a market-based mechanism or a public auction, a substantial portion of the band above 3.7 GHz will be cleared of FSS incumbents and reallocated to flexible use licensing. However, licensing and the ultimate buildout of the anticipated 5G mobile carrier networks over rural and other less densely populated areas will take many years – and potentially far longer than the initial license terms if buildout requirements are significantly less than 100 percent of the population. During this period, the same AFC system that will facilitate faster, more efficient and lower cost coordination between P2MP and FSS in the upper segment of the band can be used to allow opportunistic access, on a temporary basis, to vacant lower band frequencies until the future licensee commences service.

With the benefit of a geolocation database (the AFC), the Commission can once again adopt the same “use it or share it” approach that it has already adopted for GAA use of vacant PAL spectrum (in CBRS) and for unlicensed use of locally-vacant flexible use spectrum in the post-incentive-auction 600 MHz band. P2MP access points that are deployed opportunistically can be required to query the database periodically to determine whether any new or deleted earth station registrations, or other changes, revoke the permission to operate or require a change in the transmit power or other operational condition.

***Middle Segment:*** If the Commission decides that FSS will be cleared from the bottom of the band in two stages – with FSS continuing to operate in a portion of the band that is designated for future reallocation to flexible use (e.g., 3800-3900 MHz) – PISC recommends that this middle segment should similarly be authorized for *opportunistic* (e.g., licensed by rule) coordination between P2MP and the remaining FSS incumbents. The coordination process would be no different than in the upper band segment, except that – as in the lower segment – the AFC system would be able to revoke the permission to operate, or require a change in operating conditions, as needed to protect and ultimately transition from FSS to the deployments of a future flexible use licensee.

Finally, the *NPRM* requests “comment on subjecting point-to-multipoint FS applicants to an expedited coordination process with mandatory electronic notification and response.”<sup>46</sup> PISC supports this as an immediate, interim step. The traditional Part 101 coordination process is outdated and needlessly slow, costly and cumbersome given the technology currently available to fully automate the process. The Commission should update the Part 101 coordination process to permit prior coordination of either an entire sector or individual locations through an online portal, integrated with IBFS, that facilitates mandatory electronic notification and response of relevant parties on an expedited basis, thereby shortening any prior coordination waiting period to a few days. Retail broadband customers cannot be expected to wait weeks and bear the costs of an unnecessarily lengthy or expensive coordination process.

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<sup>46</sup> *NPRM* at ¶ 123.

**IV. THE PROPOSED ‘MARKET-BASED’ APPROACH TO REASSIGNING SPECTRUM WOULD BE AN END-RUN AROUND SECTION 309(J) THAT DEFIES CLEAR CONGRESSIONAL INTENT AND TRANSFERS \$10 TO \$30 BILLION FROM THE AMERICAN PUBLIC TO FOREIGN COMPANIES THAT NEVER PAID FOR SPECTRUM**

The Commission seeks comment on a variety of approaches for reallocating the bottom portion of the band (up from 3700 MHz) for terrestrial, flexible use licensing. Both an auction-based approach and a market-based approach could accomplish the core objective of clearing 100 megahertz or more for flexible use. PISC believes, however, that the “market-based” approach described in the *NPRM* is severely flawed. A private auction or negotiated sale controlled by a few incumbent and foreign-based companies, and with no return of the anticipated net proceeds of \$10 to \$30 billion or more to the Treasury, amounts to a massive and needless giveaway of public assets. A “market-based” approach that is tantamount to a private auction or sale would be an end-run around Section 309(j) of the Communications Act in clear contravention of Congressional intent and precedent.

Without full transparency and close FCC supervision, a private sale is also likely to distort competition in the mobile market. Spectrum will be made available to potential bidders based only on maximizing the incumbent licensees’ profit rather than the broader public interest. Moreover, a private sale would set a dangerous precedent, suggesting that incumbent licensees should always wage maximum resistance against giving up or sharing unused spectrum unless the Commission agrees to give them *all* the public revenue that until now has always, with few exceptions, flowed back to the public, as Section 309(j) clearly intends.

***A. A Private Sale of Spectrum with no Financial Return to the Public is Neither Necessary nor Lawful Under the Communications Act***

The fact that the four incumbent FSS satellite operators are so eager to give up 200 of the 500 megahertz in the 3.7 GHz C-band – and that they say they can do so in 18 to 36 months – indicates how inefficient their spectrum usage is. Like the TV band prior to its consolidation below Channel 37, the C-band is grossly underutilized. PISC applauds the Commission for proposing to both clear a portion of the band (from the bottom up) and to share a portion for high-capacity fixed wireless (from the top down). However, the fact that four satellite operators are lucky enough to be the only cars parked in a half-empty public lot does not mean that they should receive a massive giveaway that needlessly denies the public *any* return on the spectrum.

Under Section 309(j)(3) of the Communications Act, the Commission is required to promote a number of objectives in developing a competitive bidding methodology and specifying the characteristics of licenses to be assigned by auction, including:

**(C) recovery for the public of a portion of the value** of the public spectrum resource made available for commercial use and avoidance of unjust enrichment through the methods employed to award uses of that resource;<sup>47</sup>

But while this requirement applies to an auction’s design, the threshold question is whether Section 309(j) requires a public auction in this situation, or whether the “market-based” approach proposed by Intelsat, *et al.* eliminates the requirement because incumbent licensees will conduct the “auction” privately (albeit, also based on competing monetary bids). Section 309(j) and Congressional actions, described below, suggest the answer is ‘no.’

Under the Act, if “mutually exclusive applications are accepted for any initial license” then “the Commission shall grant the license or permit to a qualified applicant through a system

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<sup>47</sup> 47 U.S.C. §309(j)(3)(A) - (D), emphasis added.



of competitive bidding . . .”<sup>48</sup> The relevant exception is the Commission’s “obligation in the public interest to continue to use engineering solutions, negotiation, threshold qualifications, service regulations, and other means to avoid mutual exclusivity in application and licensing proceedings.”<sup>49</sup> That is the reason, for example, that currently spectrum in this band, coordinated for shared use by FSS and point-to-point microwave links under Part 101 of the Commission’s rules, is not auctioned. Fixed Service links coordinate, on a first-in basis, by relying on engineering solutions and (as needed) “negotiations” among one another. In contrast, licenses for exclusive use spectrum over large geographic areas – as the Commission envisions for this band – has been subject to assignment by auction, in part because there have always been competing demands to use it.

Accordingly, the *NPRM* requests comment on whether a “market-based approach” is “not likely to result in mutually exclusive applications for the Commission to consider if, for example, a negotiated agreement with the Transition Facilitator is a prerequisite for applying for a license in this band.”<sup>50</sup> In other words, if the Commission allows the incumbent licensee to decide among competing applicants (whether by “negotiated agreement” or private auction), “would this satisfy the Commission’s obligation in the public interest to use negotiation to avoid mutual exclusivity pursuant to Section 309(j)(6)(e) of the Communications Act?”<sup>51</sup> If it does, then – like the Cheshire Cat that taught Alice “the rules” of Wonderland – there is nothing whatsoever left of the Section 309(j) auction requirement except the grin. And, of course, that sly grin would belong only to the declining satellite incumbents, since what’s left of Section 309(j) also

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<sup>48</sup> 47 U.S.C. §309(1).

<sup>49</sup> 47 U.S.C. §309(j)(6)(E).

<sup>50</sup> *NPRM* at ¶ 28.

<sup>51</sup> *Ibid.*

prohibits the FCC from directing any portion of that \$10 to \$30 billion or more to the Treasury, no matter how much greater it is than the market value to those lucky incumbents.

If the “negotiation” exception in Section 309(j) is satisfied by authorizing either a private auction or a privately-negotiated sale to avoid mutual exclusive uses of the band, then the exception swallows the rule and 309(j)(1) is rendered meaningless. Congress could not possibly have intended to give the Commission the authority to give away tens of billions of dollars in public revenue based on such an interpretation of the Act. In addition, the “engineering solutions” exception is not relevant here since, as the *NPRM* acknowledges, flexible use licensing and FSS coordination are inherently mutually exclusive applications.

Moreover, there is little doubt that even after the “Transition Facilitator” completes its “negotiated agreement,” there could still be parties ready to submit mutually exclusive applications *to the Commission*. The “market-based” approach described in the *NPRM* suggests that the Commission will need to recognize only applications “negotiated” and approved by the satellite company consortium. However, there could easily be potential bidders who are shut out of the private auction and who would be filing mutually exclusive applications *but for* the fact the Commission outsources the auction to private parties..

This raises an additional problem: If, as the *NPRM* suggests, the Commission decides there must be a “negotiated agreement” to satisfy the exception to Section 309(j)(1), then it will need to require private and opaque “negotiations” between the satellite consortium and mobile carriers of their choosing, while prohibiting any more transparent or open private auction that could address the fairness and competition concerns of other stakeholders. If the “Transition Facilitator” simply conducts the equivalent of a private auction – albeit less formally than a Commission auction – that would not come close to qualifying as the sort of “negotiations”

contemplated in Section 309(j)(6)(E), which have always avoided mutual exclusivity through agreements with the Commission or among users (e.g., the light-licensing rules that have governed shared use of the 3650-3700 MHz band).

Of course, Congress anticipated this dilemma and gave the FCC a statutory tool specifically designed to address a situation where it would serve the public interest best to share some portion of the value of the band with incumbents that incur costs by clearing spectrum. The incentive auction authority under Section 309(j) that Congress bestowed on the Commission in the 2012 Spectrum Act is the *legitimate* “market-based approach” that can and should be designed to work for this band.<sup>52</sup> Under this authority, in effect through the end of FY 2022, the Commission is authorized to “encourage a licensee to relinquish voluntarily some or all of its licensed spectrum usage rights . . . by sharing a portion of the proceeds (. . .) from the use of a competitive bidding system . . .”<sup>53</sup> The “portion of proceeds” must be “based on the value of the relinquished rights as determined in the reverse auction” which, in turn, must include competing participants. That limiting provision states:

The Commission may not enter into an agreement for a licensee to relinquish spectrum usage rights in exchange for a share of auction proceeds . . . unless—

- (i) the Commission conducts a reverse auction . . .;
- (ii) at least two competing licensees participate in the reverse auction.<sup>54</sup>

In this proceeding the Commission is clearly seeking “an agreement for a licensee to relinquish spectrum usage rights.” The problem is that while Congress just recently created this authority to facilitate relinquishing spectrum rights “*in exchange for a share of auction*

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<sup>52</sup> See 47 U.S.C. §309(j)(8)(G). As the *NPRM* states: Incentive auctions are a voluntary, market-based means of repurposing spectrum by encouraging licensees to compete to voluntarily relinquish spectrum usage rights in exchange for a share of the proceeds from an auction of new licenses to use the repurposed spectrum.” *NPRM* at ¶ 103.

<sup>53</sup> § 309(j)(8)(G)(i).

<sup>54</sup> § 309(j)(8)(G)(ii).

proceeds,” a private auction would do this in exchange for all of the (net) proceeds, with no return to the Treasury. Where an incentive auction is viable, the Commission should choose the methodology that comports with the statutory objective of paying only a “portion of proceeds” to licensees, particularly those that never paid for the spectrum in the first place.

The *NPRM* appears to recognize this and seeks comment on “a reverse auction for satellite transponder capacity that could be used to compensate the satellite incumbents for giving up C-band transponder capacity in order to enable the Commission to reallocate C-band spectrum to flexible use.”<sup>55</sup> This would effectively use the reverse auction of substitute transponder capacity – enough to accommodate the earth stations cleared off the lower portion of the band – as a proxy for a reverse auction of the spectrum itself. The reason is that since the four C-band satellite operators share the entire 3700-4200 MHz band, it may not be possible to meet the statutory requirement of two or more competing participants in the reverse auction.

PISC believes that a reverse auction of transponder capacity, under the Commission’s incentive auction authority, would be feasible and preferable to abdicating the public’s interest in a substantial portion of the value of this public resource. As the *NPRM* describes, competition in the reverse auction could extend to satellite providers with workable capacity in either the C-band or Ku-band – and could draw in new providers willing to launch new satellites, just as Intelsat and SES have already conceded will be necessary in any event.

***B. Since Adopting Section 309(j), Congress has Twice Passed Legislation Reiterating its Intent to Avoid the Massive Giveaway this NPRM Contemplates***

If the underlying purpose of Section 309(j) is not clear enough, the Commission should consider the Congressional intent expressed in response to the two subsequent instances when

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<sup>55</sup> *NPRM* at ¶ 106.

the agency concluded some form of “incentive auction” would be an appropriate mechanism to clear and repurpose a band more expeditiously.

In late 2001 the Commission scheduled an auction of 700 MHz band spectrum based on a proposal by a “Spectrum Clearing Alliance” comprised of broadcast station incumbents organized by Paxson Communications. At that point TV stations operating in the 700 MHz band (TV channels 60 to 69) had no definite deadline to complete the DTV transition. Thus, it would have been difficult to relocate their analog facilities to clear the band for exclusive mobile use.<sup>56</sup> The Commission also had a statutory deadline to auction spectrum.<sup>57</sup>

The Spectrum Clearing Alliance agreed to give up their analog licenses early if they were guaranteed market-based side payments in proportion to what the winning mobile carriers ultimately bid and paid at the FCC auction.<sup>58</sup> In a September 2001 Order, the Commission adopted a version of the Spectrum Clearing Alliance proposal and scheduled the public portion of the auction for June 2002.<sup>59</sup> Estimates were the broadcaster consortium would receive as

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<sup>56</sup> “[T]he Commission is constrained from making this spectrum fully available for public safety because incumbent television broadcasters, pursuant to statute, do not have to vacate their analog channels until 2006 and may seek to remain until at least 85 percent of the households in their market have access to DTV signals, whichever is later,” citing 47 U.S.C. § 309(j)(14)(A)-(B). FCC, Report to Congress, *In the Matter of the Auction Reform Act of 2002* (June 19, 2003).

<sup>57</sup> A statutory deadline required that the proceeds from this auction be deposited in the Treasury by September 30, 2000. See Consolidated Appropriations Act, 2000, Pub. L. No. 106-113, 113, Appendix E, Sec. 213.

<sup>58</sup> Section 309(j)(14) required the Commission to assign spectrum recovered from broadcast television using competitive bidding. 47 U.S.C. § 309(j)(14)(C).

<sup>59</sup> See *Third Report and Order*, Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission’s Rules, WT Docket No. 99-168, Carriage of the Transmissions of Digital Broadcast Stations, CS Docket No. 98-120, Review of the Commission’s Rules and Policies Affecting the Conversion to Digital Television, MM Docket No. 00-39, 16 FCC Rcd 2703, 2718 at ¶ 36 (2001); *Order on Reconsideration of the Third Report and Order*, Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission’s Rules, WT Docket No. 99-168, Carriage of the Transmissions of Digital Broadcast Stations, CS Docket No. 98-120, Review of the Commission’s Rules and Policies Affecting the Conversion to Digital Television, MM Docket No. 00-39, 16 FCC Rcd 21633 (2001).

much as half of the auction's projected \$20 billion in revenue.<sup>60</sup> After the vote, Lowell Paxson gloated: "The broadcasters are going to be in for a windfall."<sup>61</sup>

Congressional reaction was swift. "Outrageous," Senate Commerce Committee Chairman Ernest Hollings wrote in a letter to FCC Chairman Powell. Chairman Hollings stated that the Commission's plan to have auction winners pay broadcast licensees roughly half of the potential 700 MHz auction revenue, rather than directing all it to the Treasury, amounts to "bending the law."<sup>62</sup> The letter further stated:

Allowing industry to negotiate private marketplace deals that dictate the governance and the transfer of spectrum and to earn profits on the spectrum through such arrangements is outrageous.

Such action clearly violates the standards and mandates to which the FCC is required to adhere.<sup>63</sup>

Senator John McCain, the Committee's ranking Republican, voiced similar objections and bipartisan legislation was introduced by Sen. James Inhofe (R-OK). Months later, Congress overwhelmingly passed the Auction Reform Act of 2002,<sup>64</sup> later signed by President George W. Bush, canceling the FCC's first attempt at an "incentive auction" in part because it would have unnecessarily directed roughly half of the auction proceeds (as much as \$10 billion) to a consortium of broadcast station licensees that had never paid for the spectrum. The Act's findings stated: "The Commission's rules governing voluntary mechanisms for vacating the 700

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<sup>60</sup> See, e.g., Norman Ornstein and Michael Calabrese, "Hey, Give Back Those Airwaves—Or Pay Up!", *The Washington Post* (Oct. 14, 2001), available at [https://www.washingtonpost.com/archive/opinions/2001/10/14/hey-give-back-those-airwaves-or-pay-up/f80d86d7-2103-4a51-8f39-8a65dd78a7cc/?utm\\_term=.d8269a8696ca](https://www.washingtonpost.com/archive/opinions/2001/10/14/hey-give-back-those-airwaves-or-pay-up/f80d86d7-2103-4a51-8f39-8a65dd78a7cc/?utm_term=.d8269a8696ca).

<sup>61</sup> *Ibid.*

<sup>62</sup> See David Enrich, "Hollings Criticizes FCC Spectrum Plan," *Multichannel News* (Oct. 19, 2001), available at <https://www.multichannel.com/news/hollings-criticizes-fcc-spectrum-plan-379161>.

<sup>63</sup> *Ibid.*

<sup>64</sup> *Spectrum Reform Act of 2002*, Pub. L. No. 107-195, 47 U.S.C. § 309(j)(15)(C)(iv), available at <https://www.congress.gov/bill/107th-congress/house-bill/4560/text?overview=closed>.

megahertz band by broadcast stations . . . should advance the transition of digital television **and must not result in the unjust enrichment of any incumbent licensee.**<sup>65</sup> The Spectrum Reform Act sent the agency back to the drawing board; and although the auction was delayed several years, ultimately Channels 60-69 were auctioned for nearly \$20 billion. All of those proceeds were sent to the Treasury rather than into private pockets.

In 2010, the National Broadband Plan proposed an incentive auction of TV spectrum once again based on the concept of paying TV broadcast station licensees to give up spectrum in the 600 MHz band for clearing and auction to mobile carriers. This time, chastened by the Auction Reform Act imbroglio, the Commission conceded it lacked authority to direct spectrum revenues to the broadcasters. Congress stepped in and passed incentive auction legislation in 2012 that authorized payments.<sup>66</sup> However, after prolonged debate, the law authorized a reverse auction designed specifically to compensate only as many broadcast licensees as necessary (175 as it turned out) – and to place them in competition with one another (using a reverse auction) to ensure that a substantial portion of the auction proceeds would revert to the Treasury.<sup>67</sup> As it turned out, the public received the largest portion of the incentive auction revenues last year (roughly \$10 billion), while the vast majority of local TV stations were required to move below 600 MHz, compensated by a relocation fund authorized by the legislation.

There’s no question that unlike 2002, in 2012 Congress on a bipartisan basis recognized the practical utility of designing an auction that shared revenue with a self-selecting group of incumbent TV station licensees. Even then, however, Congress and the Commission could really

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<sup>65</sup> *Id.* at Section 2(6)(B) emphasis added.

<sup>66</sup> *Middle Class Tax Relief and Job Creation Act of 2012*, Pub.L. 112–96, Subtitle D—Spectrum Auction Authority, § 6402, (enacted Feb. 22, 2012), codified at 47 U.S.C. § 309(j)(8)(G) (“Spectrum Act”), available at <https://www.congress.gov/112/plaws/publ96/PLAW-112publ96.pdf>.

<sup>67</sup> § 309(j)(8)(G)(ii); Spectrum Act § 6402. Under the Act’s incentive auction authority, “at least two competing licensees must participate in a reverse auction to determine the amount of compensation for voluntarily relinquishing spectrum usage rights.” *NPRM* at 33-34, n. 150, citing § 309(j)(8)(G)(ii).

only justify the payments because most of the reverse auction winners were turning in their licenses and literally going off air (or, in some cases, sharing with another station on half as much spectrum). Unlike the Spectrum Clearing Alliance – or the C-Band Alliance companies in this proceeding – incumbent licensees were not simply consolidating operations into a smaller portion of an overly-large band and keeping their current revenue streams. To the extent that compressing incumbent C-band operations into substantially less than 500 megahertz imposes costs on satellite operators and certain earth station licensees, PISC believes an incentive auction methodology would be most consistent with Congressional intent and best serve the overall public interest.

***C. Abdicating Control of Spectrum Reassignment to a Private Consortium Lacks Transparency and Creates Risks of Backdoor Deals and a Less Competitive Mobile Market***

The needless giveaway of Treasury revenue is not the only flaw in the “market-based” approach outlined as an option in the *NPRM*. Without full transparency and close FCC supervision, a private sale is far more likely than a FCC-administered auction to distort competition in the mobile market, because it will make spectrum available to potential bidders based only on maximizing the incumbent licensees’ profit rather than the broader public interest. Moreover, it would set a dangerous precedent, suggesting that incumbent licensees should always wage maximum resistance against giving up or sharing unused spectrum unless the Commission agrees to give them *all* the public revenue that until now has always, with few exceptions, flowed back to the public, as Section 309(j) clearly intends.

Setting aside the monetary return to the public, PISC is also very concerned about the impact of a private auction on competition and consumer choice. If the Commission authorizes a



private auction, will it also determine – through notice and comment – the geographic areas and other characteristics of the flexible use licenses in the 3.7 GHz band? Will the license areas be nationwide, or Partial Economic Areas, or Cellular Market Areas, or counties, or a mix? Will there be bidding credits for small operators? Will every willing bidder be given a fair and equal chance to acquire these licenses? What level of transparency will ensure that this is so? PISC believes that at a bare minimum the Commission will need to address all of these concerns – and many more – through public notice and comment rulemaking *prior to* handing the actual administration of the “market-based” auction over to the satellite companies. The stakes are too high for a hands-off approach that privatizes the Commission’s responsibilities precisely because the emerging 5G wireless ecosystem is so important to a wide variety of stakeholders and ultimately to consumers.

Finally, PISC believes that a private sale will set a dangerous precedent that deters band sharing in particular. That is already evidenced in this proceeding. Intelsat, SES and their want-to-be Transition Facilitator (the C-Band Alliance) adamantly oppose even the consideration and testing of coordinated shared use of unused frequencies in the band, even in the most remote rural areas. This is not surprising, since any vacant FSS spectrum put to use in addressing the rural broadband gap is spectrum that they fear they won’t be able to monetize later. The Commission has fulsome authority to modify licenses and to relocate incumbent licensees if it clearly serves the general public interest. We’ve seen this, as described above, in relation to local broadcast stations in the 600 and 700 MHz bands. PISC fears we will never see it again or, if so, only after far more lengthy and costly battles against incumbents who will feel entitled (and be incited) to wage all-out opposition to spectrum sharing or other progress that they could potentially hold hostage for an iconic “C-band windfall.”

## V. CONCLUSION

The 3.7-4.2 GHz band presents a prime opportunity for the Commission to authorize robust band-sharing rules that achieve a win-win-win trifecta of critical public policy goals: first, to enable fixed wireless providers to bring high-speed broadband access to unserved and underserved rural, tribal and other areas; second, to reallocate a substantial portion of the band available for mobile 5G networks; and third, to protect incumbent Fixed Satellite Services (FSS) licensees from undue disruption or harmful interference. PISC therefore urges the Commission to authorize fixed P2MP broadband operators to coordinate shared use of unused spectrum on a licensed or opportunistic basis across the entire 3.7-4.2 GHz band. Unlocking every megahertz of the grossly underutilized C-band will serve as part of the foundation for a more inclusive and robust 5G wireless ecosystem.

While reallocating lightly-used FSS spectrum for 5G “flexible use” licensing is in the public interest, it must not be accomplished through a private auction or negotiated sale controlled by a few incumbent and foreign-based companies, and with no return of the anticipated \$10 to \$30 billion or more to the Treasury. A “market-based” approach that is tantamount to a private auction or sale would be an end-run around Section 309(j) of the Communications Act in clear contravention of Congressional intent and precedent.

Respectfully Submitted,

**THE PUBLIC INTEREST SPECTRUM COALITION**

Open Technology Institute at New America,

Consumers Union

Consumer Federation of America

National Hispanic Media Coalition

American Library Association

Next Century Cities

Public Knowledge

Common Cause

Institute for Local Self-Reliance

Access Humboldt

<s> Michael Calabrese

Amir Nasr

Wireless Future Project

Open Technology Institute at New America

740 15<sup>th</sup> Street NW, Suite 900

Washington, D.C. 20005

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