Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	
Amendment of Parts 1, 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands	WT Docket No. 03-66 (Terminated)
Transforming the 2.5 GHz Band	WT Docket No. 18-120

REPLY COMMENTS OF VOQAL

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EXECUTIVE SUMMARY

The Notice of Proposed Rulemaking (NPRM) to modernize the Educational Broadband Service (EBS) is long overdue and provides the Commission the opportunity to address three of its key priorities: closing the homework gap and digital divide, expanding access to affordable broadband in rural areas, and accelerating the deployment of 5G at a time when the U.S. faces intense pressure from foreign competitors. The Commission can accomplish all of this without creating a new subsidy program and at little or no cost to taxpayers. The comments submitted on the NPRM offer the Commission a consistent message on how to achieve these goals: maintain EBS rules that are working, modernize educational use requirements, and license unused EBS spectrum by rationalizing service areas and issuing new licenses through priority filing windows.

First, hundreds of commenters voice strong support for maintaining current EBS eligibility and lease term rules. The few commenters that support modifying these rules offered no reason to do so. The current rules have promoted investment and substantial use, as is evidenced by significant deployment in the band, as well as the imminent roll out of 5G networks. The rules have also provided for extensive educational benefits. The record includes abundant examples demonstrating the resounding success of EBS; commenters explain that many of these impactful projects would not be possible if EBS eligibility and lease term requirements were eliminated. While some commercial operators have filed comments supporting rule changes, it is worth noting that these same entities strongly supported the adoption of these rules in the last EBS rulemaking and have benefitted from them since their adoption.

Second, the record provides compelling reasons why the Commission should modernize educational use rules for the broadband world. Existing rules, which were developed for the Instructional Television Fixed Service (ITFS) video era, are outdated. Rather than simply

eliminate these rules, the Commission should adopt new educational use rules that ensure that educational entities—including students, teachers, schools, libraries, community centers, and nonprofits—can access affordable broadband. Developing a new educational use standard will extend greater educational benefits and further address the homework gap, one of the central goals of this rulemaking.

The fundamental issue with the EBS band today is that the Commission has failed to license EBS spectrum in nearly half the United States. Commenters unanimously support making this spectrum available as soon as possible. There is overwhelming support for an automatic county boundary rationalization of existing Geographic Service Areas (GSAs) that would help fill in gaps between license areas that are unsuitable for standalone service. Automatic GSA expansion would immediately add this spectrum into the wireless broadband pipeline while avoiding the Commission's first proposed local priority filing window, which the Commission itself has acknowledged would be a slow process. Making this spectrum available for 5G services in a timely manner, while at the same time allowing educational licensees to continue offering cutting-edge services, is a win-win that the Commission can deliver. Commenters are also clear that no EBS licensee should lose service territory via rationalization, as existing services were built out with an expectation that GSAs would not be cut back. Modifying these areas would be highly disruptive to licensees, commercial providers, and those who rely on the service.

In the remaining white space areas, the record shows strong support for the Commission's proposed local priority filing windows as opposed to auctions. There is a significant level of interest from educational entities, nonprofits, and Tribal Nations to obtain EBS licenses, which have not been available for over two decades. Commenters demonstrate that

local priority filing windows are consistent with the statute and are in the public interest. In addition, commenters explain why the Commission rules should not arbitrarily exclude currently-eligible EBS entities with a track record of supporting local communities from participating in these windows. Furthermore, the Commission should avoid a narrow definition of "local presence" that arbitrarily excludes entities making a local impact but that may not have a local mailing address. Issuing licenses via windows rather than auction will ensure local communities can self-deploy or partner with commercial providers in a way that is economically feasible and will help solve the digital divide. The Commission should look no further than the handful of waivers it has already issued for this spectrum as proof that self-deployment is a viable solution to close the digital divide in rural areas. These buildouts show that EBS licensees can help schools and communities meet their broadband needs through self-deployment in areas that commercial providers are unwilling to serve.

The record also demonstrates that auctions in the EBS band are likely to fail and would result in a significant loss of educational benefits. Incentive auctions would suffer from a lack of participation from licensees due to existing lease agreements and overlay auctions would significantly disrupt existing services. Also, if an auction were pursued, there would be no incentive for winning bidders to serve the educational marketplace. The record shows that the Commission is already achieving its goal of ensuring that EBS spectrum is put to its "highest and best use" with the deployment of 5G networks, making auctions unnecessary.

I. THE COMMISSION SHOULD PRESERVE THE EDUCATIONAL NATURE OF EBS

A. Eligibility Rules Are Key to the Success of EBS

The record shows that EBS connects students, families, and communities that would not otherwise have internet access at a time when educational technology is pervasive.[1] EBS also provides educational entities with valuable resources necessary to carry out their missions, while frequently allowing commercial entities access to this spectrum. Commercializing the band would put at risk educational benefits and connectivity provided today and would throw away an opportunity to employ EBS spectrum to do even more, including help close the digital divide, one of Chairman Pai's top priorities.[2] Two organizations that represent the interests of EBS licensees, the National EBS Association (NEBSA) and the Catholic Technology Network (CTN), explain that "the existing EBS licensing and leasing model has been a success, both in terms of serving the interests of local educators and meeting the needs of commercial entities deploying 4G and 5G broadband networks."[3] Hundreds of comments showing support for EBS have been submitted to the record, including numerous EBS success stories. A sample of these

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1 Comments of Digital Wish, WT Docket No. 18-120 (filed Aug. 8, 2018) ("Digital Wish Comments") ("As more US schools transition from traditional textbooks to online learning, internet access for all students is critical. Without it, schools moving to online learning are inadvertently creating a condition of inequality where students without home access to the internet have a more difficult time getting homework done."). Unless otherwise noted, all comment citations herein are to comments filed on August 8, 2018 in WT Docket No. 18-120.

2 Chairman Ajit Pai, *Setting the Record Straight on the Digital Divide*, FCC Blog (Feb. 7, 2017, 12:45 PM), https://www.fcc.gov/news-events/blog/2017/02/07/setting-record-straight-digital-divide.

3 Joint Comments of Catholic Technology Network National EBS Association and at 16 ("CTN and NEBSA Comments").

success stories is compiled in Appendix 1. Together, these comments undeniably demonstrate that EBS is providing real benefits to educators and learners across the country.

Many of these successful EBS projects are a result of strong partnerships between commercial entities and EBS licensees, which have been encouraged by the Commission for over 30 years. These programs are directly tackling two of the Commission's major priorities, namely closing the digital divide and the homework gap. These examples are also evidence that past decisions by the Commission were prudent and have created an environment for commercial providers to invest while also supporting the educational missions of licensees. The Commission should avoid a transformation of the 2.5 GHz band that would harm or eliminate these successes.

The record clearly shows that the key to the success of EBS is the Commission's decision to allow educational license holders to partner with commercial providers while also mandating educational use.[4] AT&T erroneously claims that allowing current licensees flexibility to sell is good for licensees and the public interest.[5] However, if the Commission were to eliminate

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[4] *See, e.g.*, Comments of Sprint at 2–3 ("Sprint Comments") (touting the breadth and success of its 3G/4G network, which has only been made possible through leasing EBS spectrum from its educational partners); Comments of North American Catholic Educational Programming Foundation and Mobile Beacon at 3 ("NACEPF and Mobile Beacon Comments") ("Under the current model, the dual goals of commercial deployment and educational connectivity are achieved through public-private partnerships . . . ."); Comments of Northern Arizona University Foundation, Inc.at 5–7 ("NAUF Comments") (demonstrating that partnerships are "vital to NAUF's mission" and to providing financial support in the wake of reduced government funding); CTN and NEBSA Comments at 4–8 (discussing the key role of public-private partnerships in the success of EBS); Joint Comments of South Florida Licensees at 2 ("South Florida Licensee Comments") (noting that "educators have been successfully partnering with commercial entities" to produce both the educational and commercial benefits of the EBS paradigm); Comments of Voqal at 9–14 ("Voqal Comments") (cataloguing EBS partnership success stories).

[5] Comments of AT&T at 7 ("AT&T Comments").

educational eligibility, allow licensees to sell to currently ineligible buyers, and cease to require even a very modest level of educational use, the likelihood that these successful programs will continue would be greatly diminished.[6] The North American Catholic Education Programming Foundation (NACEPF) and Mobile Beacon point out that the Commission's proposal to allow licensees to sell would trigger the "rapid erosion of the educational EBS user base, and isolat[e] the committed educators and educational providers that remain. This would undermine both the historical purpose of the allocation and the public value of spectrum designated for the education sector."[7] Northern Arizona University Foundation, Inc. (NAUF) further explains that "allowing direct commercial entrants into the EBS system could not only foreclose future educational

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[6] *See, e.g.*, Digital Wish Comments at 3 ("If this spectrum were sold off to commercial parties, it would certainly damage the growth of our current internet based educational programs, create greater inequity among students, and create an added tax burden to taxpayers if the government [were] to provide an equivalent program . . . ."); Comments of PCs for People at 4 ("PCs for People Comments") ("Commercializing EBS by allowing non-educational entities to hold the license and removing educational use requirements will ultimately lead to the elimination of educational use of the band."); South Florida Licensee Comments at 5 n.10 ("It is anticipated that if eligibility were open, an operator, finding itself able to own EBS licenses, might well seek to exit its current leases, depress offered rates for new leases or forego new leasing altogether . . . . [which] might prove disastrous for . . . EBS licensee[s] . . . ."); Comments of TechSoup Global at 3 ("TechSoup Comments") ("Without the educational eligibility and education use requirements that enabled Mobile Beacon to negotiate for the substantial number of broadband accounts and devices being used by the education and nonprofit sector, we believe thousands of anchor institutions and the hundreds of thousands of people they serve will be left behind and unable to partake in essential activities.").

[7] NACEPF and Mobile Beacon Comments at 9 ("Far from empowering licensees with greater flexibility over the long-term, eliminating educational eligibility will leave EBS licensees with *fewer* options to partner with entities that would otherwise assist them in building, operating, and maintaining a robust network that utilizes this spectrum.").

opportunities for licensees but also disrupt the existing and very successful EBS licensing and leasing model."[8]

In prior proceedings, commercial providers like the Wireless Communications Association International (WCA) advocated for the rule changes that were ultimately adopted and that are currently reflected in the leasing flexibility model. [9] In its comments in this proceeding, despite claiming that efficiency requires open eligibility, WCA at the same time heralds the leasing model as a success, stating that "the market has worked efficiently since the Commission's 1983 decision permitting leasing . . . . [L]icensees and commercial operators have had no trouble finding each other and negotiating beneficial arrangements."[10] Voqal agrees that today's EBS system is working. The ultimate adoption of more flexible rules, in combination with the eligibility and educational use requirements, helped lead to today's successful EBS model. As a result, the EBS model is providing substantial educational benefits, supporting the roll out of 5G in several markets, and underpinning successful fixed wireless partnerships that have closed the digital divide in rural areas. The Commission should maintain current eligibility rules, which are the key to the success of these partnerships.

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8 NAUF Comments at 8.

9 Comments of the Wireless Communications Association International, Inc. at 5–6, WT Docket Nos. 03-66, 03-67, 02-68, MM Docket No. 97-217, RM-10586, RM-9718 (filed Jan. 10, 2005) (explaining that "[i]t cannot be overemphasized that the purpose of this proceeding is to move BRS/EBS to a regulatory model that empowers BRS/EBS operators to respond quickly to marketplace demand for innovative new services, and to otherwise take advantage of the substantial opportunities that next generation BRS/EBS technology offers for the provision of commercial services and educational applications.")

10 Comments of the Wireless Communications Association International at 34-35 ("WCA Comments").

B. Current Rules Support the Public Interest Role of the Band

Not only is the EBS community opposed to eliminating educational eligibility rules, but also the Commission has previously concluded that "it is in the public interest" to maintain those rules.[11] In the last major 2.5 GHz rulemaking, in which Instructional Fixed Television Service (ITFS) became Educational Broadband Service (EBS), the Commission wrote: "We believe that the public interest favors preserving this spectrum for licensing to ITFS-eligible entities and that doing so will further the educational objectives that led to the establishment of ITFS."[12] The Commission went further, explaining that "[t]he record demonstrates that the EBS service provides critical educational services"[13] and that ITFS (now EBS) is:

> the only spectrum specifically reserved for educators. In an open market, we are concerned that educators could not effectively compete against broader commercial interests. Indeed, pursuant to an open eligibility scheme, the inability to bid against commercial operators for this spectrum would effectively deny educators any future entry strategy into the band.[14]

The record continues to support this view—that EBS is a unique public resource providing significant educational benefits that would evaporate if the eligibility rules were removed.

Other commenters agree, pointing out that retaining EBS eligibility rules ensures that EBS provides both a commercial and an educational benefit, which ultimately serves the public

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[11] *Amendment of Parts 1, 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands et al.*, Report and Order and Further Notice of Proposed Rulemaking, 19 FCC Rcd. 14,165, 14,222 ¶ 152 (2004) ("EBS R&O").

[12] *Id.*

[13] *Id.*

[14] *Id.* at 14,225 ¶ 159.

interest. As the Schools, Health & Libraries Broadband (SHLB) Coalition explains, "[a]llowing the licenses to be sold to commercial parties, as the FCC proposes, would conflict with the public interest nature and goals of this spectrum band."[15] NEBSA and CTN also observe that allowing EBS licenses to transfer from educational to commercial interests would not be in the public interest.[16] Furthermore, they conclude that "EBS licensees use their spectrum, including services and funding provided through leases, for non-profit educational purposes, including closing the digital divide and the homework gap. As a matter of public policy, these are goals that the Commission has supported and should continue to support through EBS."[17] Voqal agrees.

C. The Record Shows Near Unanimous Support From EBS Licensees to Maintain Eligibility Rules

The Commission has proposed to provide existing EBS licensees "flexibility to assign or transfer control of their licenses to entities that are not EBS-eligible."[18] As noted in our comments, Voqal strongly opposes privatizing this vital public resource.[19] Allowing for commercialization will lead to the end of EBS. Unsurprisingly, the EBS community was nearly unanimous in its opposition to such a plan to eliminate educational eligibility rules. Of the

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15 Comments of the Schools, Health & Libraries Broadband (SHLB) Coalition at 9 ("SHLB Comments").

16 CTN and NEBSA Comments at 17.

17 *Id.*

18 *Transforming the 2.5 GHz Band*, Notice of Proposed Rulemaking, FCC No. 18-59, WT Docket No. 18-120, ¶ 20 (rel. May 10, 2018) ("NPRM").

19 Voqal Comments at 14.

dozens of EBS licensees and their partners that filed comments in this docket,[20] only one[21] supported "flexibility" to sell its license.

Other commenters make unfounded claims as to the support of EBS licensees for this "flexibility" proposal. For example, WCA claims that "likely a silent majority" of EBS licensees

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[20] Comments of AASA, SSA, and AESA at 5; Comments of Consortium for School Networking at 5–6 ("CoSN Comments"); Digital Wish Comments at 1, 3; Comments of Educators and Broadband Providers for American Rural Communities at 9 (filed Aug. 7, 2018) ("EBPARC Comments"); Comments of Happy House Daycare, Inc. at 2, (filed July 24, 2018) (supporting the 2014 Consensus Proposal, which retained existing eligibility requirements); Comments of Hispanic Information and Telecommunications Network, Inc. at 2, 5–7 ("HITN Comments"); Comments of Nebraska Department of Education (NDE), Nebraska Educational Television (NET), and the State of Nebraska Office of the Chief Information Officer (OCIO) at 5–6, 7–8 ("Nebraska Comments"); CTN and NEBSA Comments at 16–18; Comments of North Carolina Department of Information Technology, Broadband Infrastructure Office at 5–6 ("North Carolina Comments"); NAUF Comments at 8–9; Comments of Northern Michigan University at 9–10 ("NMU Comments"); PCs for People Comments at 4; Comments of Rural EBS Coalition at 7; SHLB Comments at 9; Comments of Select Spectrum at 6 ("Select Spectrum Comments"); South Florida Licensee Comments at 5 & n.10; Comments of State Educational Technology Directors Association at 7 ("SETDA Comments"); TechSoup Comments at 3; Comments of Utah Education and Telehealth Network at 5–6 (filed Aug. 7, 2018) ("UETN Comments"); Voqal Comments at 8–15; *see also* Comments of the Chickasaw Nation at 8 ("Chickasaw Nation Comments") (non-licensee seeking access to EBS spectrum); Comments of Amelia Education Foundation, Inc. at 2 (filed July 24, 2018) (non-licensee supporting the 2014 Consensus Proposal, which retained existing eligibility requirements); Comments of Hackett School District at 2 (filed June 28, 2018) (same); Comments of King George County Schools at 1 (filed July 24, 2018) (same); Comments of Lawrence County School System at 2 (filed June 21, 2018) (same); Comments of Torstrick Ministries, Inc. at 2 (filed June 28, 2018) (same); *cf.* Comments of Imperial County Office of Education and California K-12 High Speed Network at 23 (filed Aug. 7, 2018) ("K12HSN Comments") (recommending that "white spaces be made available to non-EBS eligible entities, *only* when all options have been afforded to EBS eligible entities") (emphasis added); Comments of the National Digital Inclusion Alliance at 3 ("NDIA Comments") (asking that existing EBS licensees have "unequivocal priority over for-profit entities in the allocation of underutilized spectrum").

[21] Comments of Bridge the Divide Foundation, Inc. and Rocky Mountain Broadband, LLC at 5 ("BTD and RMB Comments").

would prefer to have flexibility in the rules,[22] yet they do not cite specific licensees, groups, or other examples. On the contrary, with only the single exception noted above, each and every EBS license holder or organization representing EBS license holders that filed on this issue has voiced opposition to allowing licensees to sell their licenses.[23] The Commission should reject WCA's assertion—which is plainly inconsistent with the Commission's obligation to act based on record evidence—and maintain current eligibility restrictions for EBS licenses, as licensees have overwhelmingly requested.

D. Educational Eligibility Is Not Hampering Investment

Some commenters suggest that eliminating eligibility restrictions will enable greater investment in the 2.5 GHz band;[24] however, this claim ignores the high levels of investment EBS licensees and lessees have already made and the services currently provided in the band. In fact, it was the Commission's adoption of a lease model that enabled those significant investments. NEBSA and CTN explain that "history shows that commercial licensing of EBS is not necessary to stimulate investment in the 2.5 GHz band. One need only to look at the investment Sprint has made in 2.5 GHz leases and buildouts to support that proposition."[25] Sprint's CEO, Michel Combes, has noted that the company plans to invest $5 billion to $6 billion this year,[26] with a

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22 WCA Comments at i.

23 *See, e.g.*, CTN and NEBSA Comments at 16–18; NACEPF and Mobile Beacon Comments at 6–9; Voqal Comments at 14–15; NAUF Comments at 8–9, SHLB Comments at 9; NDIA Comments at 3.

24 *See, e.g.*, WCA Comments at 15–17.

25 CTN and NEBSA Comments at 16.

26 *Sprint's CEO Michel Combes at J.P. Morgan Global Technology, Media and Communications Conference (Transcript)*, Seeking Alpha (May 16, 2018, 7:16 PM)

heavy focus on its 2.5 GHz assets—what Combes calls the "sweet spot for 5G mobile."[27] According to Sprint's then-CEO Marcelo Claure, the company plans on deploying "40,000 outdoor small cell solutions, 15,000 strand mounted small cells through the company's partnerships with cable companies, along with the deployment of up to 1 million Sprint Magic Boxes."[28] This is clear evidence that the current EBS leasing model and regulatory rules are not hampering investment, but rather are enabling strong partnerships that are delivering on the Commission's goals and serving the American people.

E. Commercial Offerings Are Not Achieving the Commission's Digital Divide Goals

As discussed above, the record shows that complete commercialization of the EBS band will not achieve the Commission's goals of closing the digital divide and homework gap. Commercializing the band would eliminate the public-private partnerships that are central to existing EBS successes and would result in a significant loss for educational users.[29] Some commenters argue that commercial providers would make up for this loss, but the record, as well as current commercial offerings, clearly demonstrate that this is not the case. Commercial offerings are already failing to achieve the Commission's goals, and there is no reason to think

("*Combes Transcript*"), https://seekingalpha.com/article/4174863-sprints-sceo-michel-combes-presents-j-p-morgan-global-technology-media-communications.

[27] *Id*. ("Let's be clear once again and let's be fact based on this one. Mid band spectrum is the sweet spot for 5G mobile.").

[28] Mike Dano, *Sprint Promises to Launch Nationwide Mobile 5G Network in First Half of 2019*, FierceWireless (Feb. 2, 2018, 11:16 AM) ("*Sprint Promises to Launch*"), https://www.fiercewireless.com/5g/sprint-promises-to-launch-nationwide-mobile-5g-network-first-half-2019-and-to-raise-unlimited.

[29] *See supra* notes 4 & 6 and accompanying text.

that commercial operators will have additional incentive to close the digital divide and homework gap outside of the EBS public-private partnership model.

For example, WCA makes the bombastic claim that "Sprint is providing the same if not better opportunities through its 1 Million Project."[30] This is demonstrably false. Based on Sprint's own 1Million Project Terms and Conditions sheet,[31] the program offers a paltry 3 GB of data per month before users exhaust their data cap allowance and are reduced to 2G service.[32] Research from Mobile Beacon shows that users of its EBS-enabled service require up to 87 GB per month.[33] Moreover, what low-cost plans for-profit entities do currently offer fail to reach many of the groups most in need of connectivity. The Commission should not be duped by commercial providers claiming they will serve this market with affordable, high-quality service for all. They have had ample opportunity to do so but have restricted their offerings—when provided at all—to service levels far below that offered by educational entities through EBS. The Commission can only ensure adequate service to unserved and underserved communities by maintaining EBS eligibility.

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30 WCA Comments at 16 n.37.

31 Sprint, *1Million Project Terms and Conditions* 9, https://bit.ly/2MsTwef (last visited Aug. 24, 2018).

32 To be fair, this service is better than no service for families lacking connectivity; however, this limited data allowance is wholly inadequate for the way in which users access the internet and is less than a third of the amount of data that Sprint offers in its other retail mobile hotspot plans.

33 Samantha Schartman-Cycyk & Katherine Messier, *Creating Opportunity Through Connectivity: How Mobile Broadband for Anchor Institutions Impacts Communities* 18, Mobile Beacon (2017), *available at* https://www.mobilebeacon.org/wp-content/uploads/2018/01/CreatingOpportunitiesResearchPaper_2018-1.pdf ("*Creating Opportunity Through Connectivity*").

Other commenters share the concern that commercial providers alone do not and will not solve the homework gap and digital divide, particularly in rural areas. As the Bad River Band of the Lake Superior Tribe of Chippewa Indians expressed in their comments:

> Superior Connections and CenturyLink DSL are the only providers of broadband services on the Bad River reservation, and Superior Connections is providing high-speed internet service at download speeds exceeding 25 Mbps to approximately 300 Tribal members using the EBS spectrum. CenturyLink's DSL offering provides download speeds of less than 3 Mbps at a higher cost than Superior Connections' 25 Mbps offering. In addition, the fact that CenturyLink service has not improved on the Bad River reservation despite CenturyLink's acceptance three years ago of over $55 million in annual Universal Service Fund support to build out high-speed broadband infrastructure in rural Wisconsin suggests that CenturyLink has no intention of building out or enhancing their internet service on the Bad River reservation.[34]

The main reason why the commercial sector is unwilling to invest in rural markets is the low return on investment for these projects. The Consortium for School Networking (CoSN) supports this claim. CoSN notes that:

> [W]e know market incentives are not sufficient to drive major commercial providers - the only entities that have the resources required to buy licenses - to meet the needs of marginalized students. If market forces were sufficient, this connectivity problem would not exist in so many rural and other hard to serve areas.[35]

The beauty of EBS is that partnerships enabled by the current rules make the economics of deployment more favorable for commercial entities when they partner.[36] Commercial providers

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[34] Comments of the Bad River Band of the Lake Superior Tribe of Chippewa Indians at 3–4 ("Bad River Band Comments").

[35] CoSN Comments at 6.

[36] Mark Colwell et al., *The Social Impact of Broadband: A Case Study of Red Cliff, Colorado*, Interdisciplinary Telecommunications Program, University of Colorado-Boulder 1 (Apr. 9, 2018), http://nwccog.org/wp-content/uploads/2018/05/The-Social-Impact-of-Broadband-Colwell-Schumann-Shakfa_FINAL3.pdf.

do not have to spend valuable resources in auctions, and can instead invest capital in building out networks in sparsely populated areas. EBS partnerships provide a win-win-win for EBS licensees, commercial providers, and communities because they lower the barriers of entry to deployment.[37] As well, self-deployments are a viable option, as is evidenced by such examples as the networks built by Imperial County Office of Education/California K-12 High Speed Network,[38] the Kings County Superintendent of Schools,[39] and Northern Michigan University.[40]

Importantly, if the Commission were to allow EBS licensees to sell their spectrum, there are significant concerns about buyer market power in the 2.5 GHz band. As Voqal points out in a separate proceeding, the dominant commercial partner in EBS, Sprint, already "controls 100% of the allocated EBS and BRS channels in such Cellular Market Areas (CMAs) as Chicago, Washington D.C., Pittsburgh, Miami, Baltimore, Minneapolis-St. Paul, Denver, and Phoenix."[41] According to Sprint executive Mike Dano, the company holds an average of 160 MHz of 2.5 GHz spectrum out of a possible 194 MHz in the top 100 markets,[42] which amounts to 82 percent of the available spectrum in those top 100 markets. Furthermore, based on Appendix L-1 of the

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37 This is particularly true for smaller rural providers, as EBPARC notes: "EBS licenses have been the basis for construction of networks by both educators and smaller commercial operators in rural areas. These predominantly fixed wireless networks have served to provide the means for students and faculty members to bridge the homework gap and the digital divide that plagues much of rural America." EBPARC Comments at 2.

38 *See generally* K12HSN Comments.

39 *See generally* Comments of Kings County Superintendent of Schools.

40 *See generally* NMU Comments.

41 *See* Petition to Deny the Above-Captioned Applications as Currently Proposed of Voqal at 12, *T-Mobile U.S., Inc. and Sprint Corporation Consolidated Applications for Consent to Transfer Control of Licenses and Authorizations*, WT Docket No. 18-197 (filed Aug. 27, 2018) ("Petition to Deny").

42 *Sprint Promises to Launch*.

T-Mobile/Sprint merger documents, in 125 out of the first 200 counties listed, Sprint controls 80.7 percent of the 2.5 GHz spectrum, and in 187 out of the first 200 counties, Sprint controls at least 69.1 percent.[43] If the merger were approved, these market shares would correspond to Herfindhal-Hirschman Index (HHI) scores of 4774.8 and 6512.5 respectively. Both of these well exceed the DOJ/FTC Guidelines' threshold of a "Highly Concentrated Market." In addition, Sprint boasts that "EBS leases typically include provisions such as rights of first refusal on the sale of the license," as well as "exclusivity terms, which preclude any negotiations regarding alternative spectrum uses."[44] Sprint's buyer market power, which is at a dangerous level in the 2.5 GHz band, in combination with its protective contractual rights, should be concerning to the Commission. Combined with the clear failure of the market to close the digital divide and homework gap, they render disingenuous Sprint's and other commercial providers' claims that pure flexible use rules will solve these problems. If they have not done so outside of EBS, they will not do so under a fully commercialized 2.5 GHz band. For these reasons, Voqal joins the overwhelming majority of licensees in urging the Commission to reject eliminating eligibility rules that would allow for commercialization of EBS.

F. The Commission Should Not Eliminate 30-Year Maximum Lease Terms for EBS Licenses

The Commission has proposed elimination of maximum lease terms of 30 years for EBS licensees who enter into lease arrangements with commercial providers. Voqal strongly opposes this proposal. Neither the Commission nor any commenters in this docket have provided justification to support eliminating this rule, which is an important mechanism to help deliver

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43 *See* Petition to Deny at 12.

44 Sprint Comments at 14.

continued educational benefits. In addition, not a single EBS licensee filed comments in support of this proposal. As the Commission notes, under the current lease term rule:

> EBS licensees are prohibited from leasing their facilities for a term longer than 30 years and lessees are required to provide EBS lessors with the opportunity to revisit their lease terms at years 15, 20, and 25 to review their "educational use requirements in light of changes in educational needs, technology, and other relevant factors and to obtain access to such additional services, capacity, support, and/or equipment as the parties shall agree upon in the spectrum leasing arrangement to advance the EBS licensee's educational mission."[45]

The rationale for this rule has not weakened since it was adopted, as educational technology is being developed and adopted at a much more rapid pace.[46] These realities of how education is being delivered through technology today support lessors having the ability to revisit lease agreements to ensure their educational mission is met. The required reviews also support intensive commercial use, allowing an opportunity for revised terms to support new commercial business models on the part of the lessee, or potentially the selection of a new commercial partner who is willing to make greater investments in deploying 2.5 GHz spectrum.

As CTN and NEBSA note, the 30-year lease rule "provides an adequate level of investor certainty for long-term planning while preserving the ability of EBS licensees to periodically reassess their partnerships and needs."[47] CTN and NEBSA go on to explain that longer lease

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45 NPRM ¶ 23 (quoting 27 C.F.R. § 1214(e)).

46 Nebraska Comments at 1 ("Schools and State Departments of Education are embracing personalized learning with greater utilization of digital resources in the learning environment. More and more, schools are providing laptops, tablets, or other computing devices for each student in a 'one-to-one' environment so that every student has what they need to complete their learning objectives. In Nebraska, 138 of 244 districts have deployed one-to-one initiatives in some or all of its grade levels. In the 2016-17 technology profile, Nebraska schools reported a total of 141 high/middle schools and 181 elementary schools with some type of one-to-one program for students.").

47 CTN and NEBSA Comments at 20.

terms are "not in the best interest of educators who will lose the opportunity to reevaluate lease terms and benefits derived from particular leases and lease partners."[48] Other EBS licensees echo opposition to eliminating lease terms.[49]

Neither the Commission, nor filers in this docket, have produced any evidence to suggest that a lessor would not need to review its lease terms periodically, as the Commission previously found essential. R Street Institute and WCA make unsubstantiated claims that maximum lease term rules create an element of uncertainty that deters investment;[50] however, there is ample evidence to the contrary. EBS lessees are making substantial investments today. As was previously noted, Sprint has publicly indicated that it would spend $5 billion to $6 billion in 2018 "in order to make this investment ready for 5G," and will substantially deploy small cell solutions and Sprint Magic Boxes.[51] This level of investment and deployment demonstrates that EBS lease terms are not hampering investment or buildout in the band. The Commission should maintain the current maximum lease term of 30 years and reject proposals to change rules that are providing the outcomes the Commission seeks.

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48 *Id.*

49 *See, e.g.*, EBPARC Comments at 6; South Florida Licensee Comments at 8–9; Voqal Comments at 16–17.

50 WCA Comments at 22 ("This requirement introduces an element of uncertainty that does nothing but deter investment."); Comments of R Street Institute at 3 (filed July 30, 2018) ("R Street Comments").

51 *See supra* notes 26–28 and accompanying text.

II. THE COMMISSION SHOULD ADOPT RULES THAT WILL ENHANCE THE EDUCATIONAL BENEFITS OF EBS

EBS has been able to deliver benefits to students, teachers, schools, and communities due to the educational use requirements provided by the Commission. The educational use requirements are the foundation of EBS. These rules ensure that the spectrum that has been dedicated to this important public interest pursuit will deliver on that promise. Some commenters wrongly assume that these rules are no longer needed. T-Mobile notes that "there is no downside—from an educational perspective—to elimination of the requirements."[52] This analysis is false. There is a severe downside to both existing and new EBS licensees if the Commission were to abandon educational use rules altogether. Educational use requirements have provided a floor for licensees in negotiating lease arrangements that deliver on their mandate to serve education.

Commenters, including Voqal, explain how these regulatory requirements, which were designed for the ITFS video era, should be modernized, rather than eliminated, to help deliver on the goals of the Commission.[53] This rulemaking presents a rare opportunity to update these rules and enhance the educational benefits of EBS. Adapting educational use rules for the broadband world will ensure that this spectrum can further help close the homework gap and digital divide. CoSN echoes these thoughts, explaining that the Commission should update the EBS educational use requirement to "encompass modern digital learning activities, so that licensees and leases share a guiding vision for meeting communities' digital learning infrastructure needs."[54] The

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[52] Comments of T-Mobile USA, Inc. at 2.

[53] *See* NACEPF and Mobile Beacon Comments at 14; SHLB Comments at 4–5; Voqal Comments at 15–16.

[54] CoSN Comments at 2.

Commission has all the authority it needs to modernize educational use rules to expand upon the programs that are connecting otherwise unserved students and families *today* using EBS spectrum.[55] It should not forgo this opportunity to use one of the only tools within its power to directly target the homework gap.

It is important to note that the Commission is proposing that new licensees "must reserve a minimum of 20 percent of the capacity of their channels for educational uses."[56] This proposed standard is incongruous in light of Commission's proposal to simultaneously eliminate educational use requirements for existing licensees.[57] The Commission should work to develop a new standard that would apply to both new licensees and existing licensees at the expiration of their current lease agreements.

III. THE COMMISSION SHOULD FINISH LICENSING EBS VIA RATIONALIZATION AND PRIORITY WINDOWS

One of the Commission's top directives from Congress is to ensure spectrum is put to the highest and best use in the public interest. Yet the Commission thus far has failed to license EBS spectrum in roughly half the United States. This rulemaking provides an opportunity to address this inaction and further the Commission's goal by licensing EBS in areas that remain fallow today. R Street Institute makes the dishonest claim that EBS spectrum remains unlicensed because incumbents are not productive users;[58] however, this is blatantly false. Where EBS

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55 While laudable, alternative ideas like creating a new subsidy or grant program using auction proceeds to address the homework gap, fall outside the Commission's authority. Even if that were not the case, as discussed below, *see infra* Section III.E, such an auction approach would actually raise few funds and require a lengthy implementation process, which would both delay and reduce the money available for such a free-standing homework gap program.

56 NPRM ¶ 48.

57 NPRM ¶ 22.

58 R Street Comments at 4.

spectrum has been licensed, it is being used for 4G LTE and 5G—arguably the highest and best commercial use. With regard to areas where the spectrum lies fallow, the EBS community has consistently been urging the FCC to license it for over two decades.

In order to license this spectrum, the Commission has proposed rationalizing current EBS Geographic Service Areas (GSAs) by expanding them to the boundaries of a "defined geographic area, namely, the sum of census tracts that are covered by, or that intersect, a licensee's existing GSA."[59] The record demonstrates overwhelming support for GSA rationalization.[60] Commenters urge the Commission to expand current GSAs to the nearest county boundary, and subsequently issue licenses through priority filing windows.

A. No Licensee Should Lose Service Areas Through Rationalization

The first principle of any rationalization process should be to do no harm to existing GSAs. Rather than reduce license areas, the Commission should allow existing licensees to maintain their current GSAs, as licensees and their commercial partners have built out systems and offered services within their GSAs[61] with the expectation that the Commission would not reduce their service area at a later date. Any rationalization process should avoid this potential disruption and harm to existing wireless broadband service to the public.

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59 NPRM ¶ 11.

60 *See, e.g.*, NAUF Comments at 7–8 ("While NAUF concurs with and supports any reasonable rationalization process, it does so provided that coverage of existing GSAs held by EBS licensees is not reduced.").

61 NPRM ¶ 20.

B. County Boundary Expansion with 10 Percent Threshold Is the Best Way to Rationalize Existing Licenses

The record demonstrates broad support for a rationalization process that would expand existing licenses to the nearest county boundary as opposed to census tract expansion or auction.[62] Commenters support this option as opposed to census tract expansion or auction. An automatic county boundary rationalization will more effectively deliver on the Commission's goal of putting irregular shaped areas between licenses—many of which would pose technical challenges as individual service areas—immediately into the pipeline for mobile broadband buildout. This would not be the case via census tract expansion or auction.

As Sprint explains, expansion to census tracts would "exacerbate the irregular nature of these licenses, creating additional white space anomalies in dense urban and suburban areas."[63] Educational Broadband Corp.'s comments support that view as well. As it notes, census tract expansion makes "no improvement for anyone over the current situation due to the fact that all it will do is add 'saw blade teeth' to the current smooth circle. That will not only be extremely burdensome to map and rationalize the boundary, it will provide unmanageable amounts of interference to the areas within the 'teeth' from the areas between the 'teeth.'" [64] WCA also explains that "[c]ensus tracts are extremely small for the provision of a ubiquitous wireless service; the average size is from 0.6–0.8 square miles in total."[65]

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[62] *See, e.g.*, Sprint Comments at 4–8; WCA Comments at 8–9; Comments of the Competitive Carriers Association at 2–3; HITN Comments at 4–5; Voqal Comments at 17–20; Comments of NTCA—The Rural Broadband Association at 3; Comments of Gallatin Wireless Internet, LLC at 3–4.

[63] Sprint Comments at 4.

[64] Comments of Educational Broadband Corp. at 1 (filed July 2, 2018) ("EBC Comments").

[65] WCA Comments at 13–14.

The Commission has also acknowledged county boundaries are preferential to census tracts from an administrative perspective. As the Commission explained in a previous decision, county boundaries are "easy to administer and understand, population data based on county boundaries are widely available to the public, and county boundaries rarely change."[66] From a provider perspective, county boundaries are technically superior for buildout[67] as opposed to census tracts.[68] Finally, as is pointed out by several commenters, many school districts are governed at the county level. For all these reasons, county boundary rationalization should be adopted.

There is also wide-ranging support for allowing existing licensees that cover 10 percent of the geography of a county to expand. Voqal supports this plan. As is noted by several commenters, county boundary expansion with a 10 percent threshold, as measured by geographic coverage, provides key advantages. First, the threshold is low enough to ensure that many areas

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66 *See Facilitating the Provision of Spectrum-Based Services to Rural Areas and Promoting Opportunities for Rural Telephone Companies To Provide Spectrum-Based Services*, Report and Order and Further Notice of Proposed Rule Making, 19 FCC Rcd. 19,078, 19,087 ¶ 11 (2004).

67 "Counties are a good fit for the typical coverage area of a multi-base station wireless network. The propagation of a typical 2.5 GHz fixed wireless network can cover a county at moderate expense without creating significant interference issues in adjacent counties." EBPARC Comments at 6.

68 For example, CTIA recently urged the Commission in the 3.5 GHz proceeding to consider larger county-sized GSAs as opposed to census tracts, which are much smaller, for a variety of reasons, including that census tracts "[g]enerate interference concerns," "[i]ncrease the cost of deployment," "[h]arm rural investment," "[c]reate economic inefficiencies," and "delay access to spectrum." Letter from Scott K. Bergmann, Senior Vice President, Regulatory Affairs, CTIA, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 17-258, at 3-4 (filed June 15, 2018). These concerns may not all apply or may apply differently to the 2.5 GHz band, due to important differences between the 2.5 GHz and the 3.5 GHz licensing models.

that are unusable or technically challenging to serve on their own would be added to an existing GSA. Second, having this threshold will prevent licensees covering a *de minimis* portion of a county from expanding in an area where they provide very little service. The 10 percent threshold will also make it relatively easy for the Commission to quickly identify counties where a licensee would exceed the threshold, and would allow the Commission to expand these license areas automatically, as opposed to opening a filing window that would produce delays[69] and result in roughly the same outcome. Furthermore, using a 10 percent threshold, almost half the counties would be rationalized automatically, quickly adding this spectrum to the mobile broadband pipeline. Sprint notes that "using a 10% minimum threshold on an EBS per-channel basis, about 45% of the nation's 3200 counties would be rationalized, and 31.5% of the nation's counties would remain available for EBS white space licensing."[70]

C. Priority Windows Are the Best Method to Finish Licensing EBS

Following rationalization, the Commission has proposed using a system of local priority filing windows to license EBS "white spaces" that remain.[71] The record shows strong support for issuing licenses via such windows, and affirms the Commission's statutory authority to do so. Specifically, two plans were offered for licensing: use of local priority filing windows or a "first-come, first-served" licensing window, both of which the FCC could conduct within its present statutory authority.

There is strong demand from the educational community to acquire new EBS licenses. The Commission has not accepted applications for EBS licenses via a filing window since 1995.

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69 *See* NPRM ¶ 44.

70 Sprint Comments at 6.

71 NPRM ¶ 25.

Numerous educational entities expressed interest in applying for a license to serve their communities. For example, Educators and Broadband Providers for American Rural Communities (EBPARC) indicated it has a membership of over 50 educational entities and commercial providers that support the FCC issuing new licenses via priority window.[72] Among EBPARC's membership are 40 rural internet service providers, most of which are providing service in rural America today, and would like to partner with EBS licensees to extend service rather than compete in an auction for such licenses.

The Commission has proposed issuing new EBS licenses in three separate windows.[73] The first window would be for existing licensees to apply for expansion to the nearest county boundary. As noted in Section III.B of this document, several commenters point out that the Commission should conduct an automatic rationalization and expansion, eliminating the need for this local priority filing window. Automatic expansion provides multiple benefits. This window could be conducted instantaneously, immediately adding to the mobile broadband pipeline valuable spectrum that would not constitute a workable GSA on its own. In addition, this filing window would result in roughly the same outcome in terms of expansion, just at a much faster pace as most licensees would apply for expansion, just at a much faster pace. The Commission has acknowledged it "may not be able to accept applications for all available EBS licenses in one general filing window."[74] Multiple windows would further slow the licensing of EBS "white

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[72] EBPARC Comments at 1 ("While 50 members have joined the organization to date, we believe the group also speaks for hundreds or thousands of schools that would apply for licenses if the FCC makes the decision to open a window for new educational applicants.").

[73] NPRM ¶ 27.

[74] NPRM ¶ 44.

spaces" and result in delayed 5G buildout at a time when the U.S. is facing stiff competition from many other countries.[75]

The second proposed local priority filing window is designated for rural Tribal Nations.[76] Voqal voiced support for such a window in our original comments, and a number of commenters, including Tribal Nations and Tribal internet service providers, also support this plan.[77] Some Tribal Nations, such as the Coeur D'Alene Tribe, point out that "[o]ften, commercial telecommunications companies will hoard licenses without serving customers, sometimes refusing to negotiate with Tribes to access them."[78] Relying upon commercial entities—which has by and large failed to deliver much-needed service—is not the answer; in contrast, self-deployments or partnerships with commercial providers offer rural Tribal Nations

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75 Jessica Rosenworcel, Commissioner, FCC, Statement Before the U.S. Senate Committee on Commerce, Science and Transportation 2 (Aug. 16, 2017), https://www.commerce.senate.gov/public/_cache/files/1f5f778b-b43f-4ac2-9191-2401beae3440/77FBD0659C1D02706EB4DC2EE5C99728.statement.commissionerjessicarosenworcel.senate.081618.pdf ("[W]e are in a worldwide race to lead the future of wireless. We are making progress, but other nations are moving further, faster. South Korea, the United Kingdom, Spain, Italy, Germany, Ireland, and Australia have held or will hold a 5G auction before the United States. China, too, is poised to dole out key frequencies already reserved for 5G use. We have a blitz of bands under consideration, including 2.5 GHz, 3.5 GHz, 3.7-4.2 GHz, 4.9 GHz, 5.9 GHz, 6 GHz, 24 GHz, 26 GHz, 28 GHz, 32 GHz, 37 GHz, 39 GHz, 42 GHz, 47 GHz, 50 GHz, and above 95 GHz. But we have only one auction scheduled.").

76 NPRM ¶ 35.

77 *See, e.g.*, Comments of American Indian Higher Education Consortium at 2; Bad River Band Comments at 4–6; Comments of the Chemehuevi Indian Tribe at 1 (filed July 7, 2018); Chickasaw Nation Comments at 3–4; Comments of Ernest Stensgar, Chairman, Coeur D'Alene Tribe at 1 ("Coeur D'Alene Comments"); Comments of the Havasupai Tribe at 2–3 (filed June 19, 2018); Comments of Mural Net at 4 ("Mural Net Comments"); Comments of the National Congress of American Indians at 3; Comments of Native Public Media at 1 (filed July 26, 2018); Voqal Comments at 24.

78 Coeur D'Alene Comments at 1.

the greatest opportunity to close the digital divide on Tribal lands. Mural Net, an ISP working to develop Tribal networks, notes that "[d]ue to low equipment costs, use of existing infrastructure, partnerships with local educational institutions and ISPs, and the use of open source management software, networks can be erected for as little as $10,000 per node site."[79] Voqal encourages the Commission to work directly with Tribal Nations so that they are aware of this opportunity, can plan accordingly, and can close the digital divide in their communities.

The third and final proposed local priority filing window would be for new educational licensees to acquire licenses primarily in rural areas.[80] Just as many residents of Tribal lands lack broadband access, there are likewise a large number of residents in rural America that are unserved or underserved today. As the Commission found in its 2018 Broadband Deployment Report, over 30 percent of Americans living in rural areas lack access to broadband.[81] The Commission can address this problem by allowing more educational entities, including nonprofits serving education, access to spectrum, which they can use to self-deploy or partner with a commercial provider. An important message from the record is that the lack of commercial commitment—not the lack of commercial spectrum—inhibits rural broadband deployment.

The record clearly shows that the Commission has statutory authority to use priority windows to issue new EBS licenses. AT&T's assertion that such a system of priority windows would be unlawful is simply incorrect. On the contrary, the Commission has a statutory

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79 Mural Net Comments at 2.

80 NPRM ¶ 40.

81 *Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, 2018 Broadband Deployment Report, FCC 18-10, GN Docket No. 17-199, ¶ 50 (rel. Feb. 2, 2018).

"obligation in the public interest to continue to use . . . threshold qualifications, service regulations, and other means in order to avoid mutual exclusivity in application and licensing proceedings."[82] There is ample Commission precedent for using systems of priority windows to achieve these goals.[83] AT&T misreads § 309(j)(17)(A) to effectively require that *all* spectrum be assigned by auction, counter to these clear statutory instructions and longstanding Commission precedent.[84] But that section only relates to certain limitations on "participating in a system of competitive bidding." Plainly, the series of priority windows the Commission describes, which enjoys overwhelming support in the record, is not a "system of competitive bidding," making this provision inapplicable. In other words, to the extent that the Telecommunications Act includes an "open-auction requirement," that requirement only applies to *auctions*. It in no way affects the Commission's antecedent obligation to consider mechanisms other than auctions for assigning spectrum in the public interest. Moreover, AT&T's claim that the Commission cannot establish spectrum-band-specific eligibility rules has no basis in law. Indeed, AT&T cites no case, regulation, or statutory provision for this assertion. For example, if the Commission were to accept AT&T's baseless claims, it would be required to allow AT&T to bid in auctions for broadcast television spectrum, such as the recently concluded LPTV Special Displacement Window.[85] Indeed, AT&T's theory would preclude the Commission from making any rules at all designating particular bands for particular uses.

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82 47 C.F.R. § 309 (j)(6)(E).

83 *See* NACEPF and Mobile Beacon Comments at 35 (summarizing Commission precedent).

84 AT&T Comments at 3–4, 10–11.

85 *The Incentive Auction Task Force and Media Bureau Announce Procedures for Low Power Television, Television Translator and Replacement Translator Stations*, Public Notice, 32 FCC Rcd. 3860, 3866–67 ¶ 15 (2017).

AT&T's policy arguments fare no better. AT&T claims that a system of priority windows would delay availability of spectrum for 5G deployments, but the opposite is true.[86] Priority windows would ensure that a significant amount of 2.5 GHz spectrum is licensed quickly and placed either in the hands of educators or nonprofits who are motivated to deploy it themselves to serve rural students, or rapidly deployed through partnerships with commercial wireless providers. Although AT&T now urges the Commission to avoid relying on these types of secondary market transactions to stimulate 5G deployment, they have recently taken the opposite stance when they have stood to benefit. As AT&T explained in the ongoing 3.5 GHz proceeding "[s]econdary markets have long enabled the marketplace to determine the most effective use of spectrum."[87] The same is true with the 2.5 GHz band, except that here, unlike in the 3.5 GHz band, a system of priority windows would ensure vibrant educational use of spectrum to connect students in rural communities.

D. Currently-Eligible EBS Entities Should Be Allowed to Participate in Priority Filing Windows

The Commission has proposed limiting the third filing window only to "accredited institutions as well as governmental organizations engaged in the formal education of enrolled students."[88] In doing so, the Commission would arbitrarily exclude nonprofit entities serving education, including many existing EBS license holders from participation, despite the demonstrated educational benefits that these organizations deliver. Voqal opposes excluding

86 AT&T Comments at 11.

87 AT&T Comments at 8.

88 NPRM ¶ 21.

existing licensees from this window, as do other commenters.[89] As the National Digital Inclusion Alliance argues, the Commission should "give existing EBS holders, as well as local nonprofit and public educational institutions, an unequivocal priority over for-profit entities in the allocation of underutilized EBS spectrum."[90] SHLB also supports maintaining eligibility for "those non-profit organizations (such as Mobile Beacon and Mobile Citizen) that have experience in providing wireless broadband access to local communities using EBS spectrum in neighboring markets, even if they do not have a local presence in that particular community," noting that "[n]on-profit organizations that have a history of serving low-income customers have the expertise and experience and are most likely able to be able to get service up and running quickly."[91]

The Commission has proposed giving preference to entities with a "local presence" when assigning licenses via a local priority filing window. To determine a "local presence," the Commission proposes that an applicant be "physically located within the license area applied for."[92] As Voqal argued in its comments, a physical presence is not required to serve a local community; therefore, the Commission should define local presence in a way that does not unnecessarily exclude organizations that have a successful track record of serving local

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89 NACEPF and Mobile Beacon Comments at 35–38; NDIA Comments at 3; SHLB Comments at 8; Voqal Comments at 22–23, 24–25.

90 NDIA Comments at 3.

91 SHLB Comments at 8. SHLB goes on to note: "Existing licensees and non-profits who serve educational entities (who would be excluded under the FCC's proposal) may have expertise and experience that could benefit the deployment of service. A mailing address does not guarantee that the entity has a local presence and could be gamed." *Id*. at 6.

92 NPRM ¶ 29.

communities.[93] The record shows agreement with Voqal regarding the definition of "local presence." Educational Broadband Corp states: "National filers should not be discouraged and are good at spreading opportunity among several educators in the same area."[94] NACEPF echoes this sentiment, explaining that "merely having a mailing address or office within a community is a poor proxy for such local ties. Moreover . . . the absence of an EBS licensee's local physical mailing address does not preclude local educational entities from putting that EBS service to use in ways that serve the community's specific needs."[95] The Commission should adopt a definition of local presence that includes current lines of service in a community, schools or libraries served, or other broader measures that capture whether a licensee is helping achieve the key goals of the NPRM, namely closing the digital divide and homework gap.

E. Auctions Will Not Meet the Commission's Goals

The Commission also sought comment on the use of auctions for licensing EBS "white spaces." The record is clear that auctions should not be conducted, at least until educational entities (including currently eligible-entities) and Tribal Nations have had an opportunity to access new licenses. Educational entities have been waiting since 1995 to access EBS licenses and serve their communities. As was made abundantly clear in the record, commercial partnerships and self-deployments of EBS spectrum hold great promise in achieving the Commission's goals at little or no cost to the taxpayers.[96] The bottom line is that auctions are likely to fail.

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93 Voqal Comments at 21–22.

94 EBC Comments at 4.

95 NACEPF and Mobile Beacon Comments at 41.

96 *See, e.g.*, HITN Comments at 2–3 ("[L]easing has . . . provided such licensees with a funding mechanism not dependent on public tax dollars for the development and deployment of

The record shows many EBS licensees oppose auctions. The Hispanic Information and Telecommunications Network (HITN), for example, points out that auctions are unnecessary for putting 2.5 GHz spectrum in the hands of commercial providers who wish to deploy service. As their comments explain, the "present voluntary leasing and secondary market system has proved successful in making excess capacity readily available for commercial service deployments, while allowing for the private funding and development of educational services and usage. Therefore, HITN does not see a need for opening up eligibility, changing rules to promote commercial ownership or conducting overlay or incentive auctions."[97] Voqal strongly agrees with this position.

In addition, CoSN notes that educational entities will struggle to compete in auctions, and that commercial entities have little interest in serving educators. They point out:

> Even in light of declining 2.5 GHz infrastructure costs, districts that acquire EBS licenses will have to allocate significant resources to build out the systems required to serve their students. Adding auction costs to this front-end investment may preclude districts from pursuing EBS licenses and we know market incentives are not sufficient to drive major commercial providers - the only entities that have the resources required to buy licenses - to meet the needs of marginalized students.[98]

One form of auction the Commission is considering is an incentive auction. The record shows this form of auction would fail. One reason is that many existing licensees may be contractually prevented from participating. As Sprint notes, the company:

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educational communications services and usage both on and off the band."); NMU Comments at 10 ("NMU believes that its experience validates the proposition that EBS is an effective mechanism—perhaps the most effective mechanism—to bring the promise of wireless broadband service to rural areas.").

97 HITN Comments at 2.

98 CoSN Comments at 6.

> has long-term lease arrangements involving approximately 1600 call signs in the 2.5 GHz band, which covers over 60% of the current EBS licenses. These licensees cannot return this spectrum to the Commission without implicating Sprint's contractual rights. Notably, EBS leases typically include provisions such as rights of first refusal on the sale of the license and the lease of the spectrum following expiration of the lease and exclusivity terms, which preclude any negotiations regarding alternative spectrum uses.[99]

Alternatively, even in the absence of such provisions, the existing lessee—Sprint, in most cases—would place a far greater value on spectrum that it already had leased than any other bidder, both because other bidders' use of the spectrum would be encumbered by the existing lease and because Sprint's existing infrastructure and lease portfolio would be highly complementary with any new 2.5 GHz spectrum acquisitions. These issues would likely result in greatly reduced auction proceeds, a windfall for a small handful of operators, and an overall failure of the auction mechanism to assign spectrum efficiently and fairly. Finally, such an auction would abandon the educational legacy of this band, eliminating any opportunity to use EBS to advance educational connectivity. The Commission lacks the authority to create a new subsidy program or otherwise target whatever meager funds may be raised by an incentive auction towards closing the homework gap. The Commission should not pursue this form of auction for EBS.

The Commission also sought comment on an overlay auction. Overlay auctions are a particularly bad option in this band because they would present challenges similar to those of an Incentive Auction. In an overlay auction, the lessee of any underlay license would generally place a far greater value on the overlay spectrum than any other bidder, due to complementarity with existing spectrum and other infrastructure. At the same time, the value of this spectrum to other prospective bidders will be significantly depressed due to the long-term encumbrance of

[99] Sprint Comments at 14.

the underlay license by a potential competitor. This would be exacerbated by the fact that overlay licenses will be unlikely to cover the most desirable markets, which are generally already licensed to EBS operators, and instead cover only suburban and rural areas at their peripheries. These factors considered together may make the overlay spectrum valuable to an underlay lessee but few (if any) other bidders. As with an Incentive Auction, this would fundamentally disrupt any effort to conduct a competitive auction, yielding depressed revenues and inefficient results. Moreover, an underlay auction would likely result in multiple operators, potentially using different equipment and technologies, operating in close proximity to one another. This will raise the need to take a fresh look at the necessary technical rules for preventing interference between licensees, likely a complex and lengthy process.

CONCLUSION

In this proceeding, the Commission has a rare opportunity to address three of the most important telecommunications challenges Americans face today: closing the digital divide and the homework gap, expanding broadband access in rural areas, and accelerating 5G deployment at a time when our country faces intense international competition. EBS is a successful system that is working and is primed to help meet these challenges. The Commission need not abandon the rules that have led to these successes. As NAUF opines "the Commission should be careful to not 'throw the baby out with the bathwater' in an attempt to transform the band."[100] Instead, the Commission should focus on licensing the full capacity of the EBS band and implementing a modernized, meaningful educational use standard. By retaining educational eligibility and lease terms, modernizing educational use, and freeing up unused EBS frequencies, the Commission

[100] NAUF Comments at 4.

can position the United States to deliver better service to more students, close the digital divide, and win the race to 5G.

Respectfully submitted,

_____/s/_____
John Schwartz
President

Mark Colwell
Director of Telecommunications Strategy

September 7, 2018

Appendix I

These success stories were filed in the WT 18-120 docket either directly by the organization or location listed in column one, or were referenced by another filing in the docket. For success stories listed as part of another filing, the filing is listed in parentheses directly under the organization or location name. In addition to these success stories, nearly every express comment is a success story filed by an end user that benefits from EBS today.

Organization	Success Story
Albermarle County Public School District **(Consortium for School Networking Comments)**	"[S]erves approximately 14,000 students in a mostly rural area covering over 700 square miles in Central Virginia. ACPS delivers broadband access to a portion of the district's unserved and underserved students using EBS spectrum. The ACPS EBS system utilizes mountainside towers that link to connections on nearby schools. The district is working to expand the system to provide greater broadband access to more of its students and it offers an ancillary community benefit through a partnership with local emergency service providers who will also use the spectrum for emergency communications. The project's final phase will provide outdoor routers (one for every house with students) designed to deliver connections from the towers to school-issued computers free of charge."
Bad River Band of the Lake Superior Tribe of Chippewa Indians	Leases spectrum from Northern Michigan University ("NMU") to provide broadband service to educational institutions on and around the Bad River reservation. "[T]hrough its wholly owned non-profit business corporation, Superior Connections Communications, Bad River is offering this service to the educational institutions on and around the Bad River reservation. As indicated above, Superior Connections and CenturyLink DSL are the only providers of broadband services on the Bad River reservation, and Superior Connections is providing high-speed internet service at download speeds exceeding 25 Mbps to approximately 300 Tribal members using the EBS spectrum. CenturyLink's DSL offering provides download speeds of less than 3 Mbps at a higher cost than Superior Connections' 25 Mbps offering. In addition, the fact that CenturyLink service has not improved on the Bad River reservation despite CenturyLink's acceptance three years ago of over $55 million in annual Universal Service Fund support to build out high-speed broadband infrastructure in rural Wisconsin suggests that

	CenturyLink has no intention of building out or enhancing their internet service on the Bad River reservation."
Desert Sands Unified School District **(Consortium for School Networking Comments)**	"*Connect* initiative is using EBS to connect students to broadband at home. Located in the central area of the Coachella Valley in the desert of Southern California, Desert Sands serves children from Bermuda Dunes, Coachella, Indian Wells, Indio, La Quinta, Palm Desert, and Rancho Mirage. The district is 750 square miles, separated into five trustee areas. Through *Connect*, students that need a WiFi connection at home will be issued a MiFi device, so they can use the district's LTE network. This exciting project, scheduled to begin for the 2018/2019 school year, will involve students at the district's middle and high schools and a few elementary schools. During the 2019/2020 school year all students in grades two through twelve will participate in the initiative."
Digital Wish	"Over the past five years, Digital Wish has been working with Mobile Beacon to bring internet to schools, teachers and students that have been without access for a variety of reasons including geography and prohibitive costs. The need for hotspot donations and discounted internet service has been the highest need (most requested technology donation) of our 65,000 Digital Wish USA educator members. Digital Wish is a 501©(3) nonprofit organization with a mission of helping US public and private nonprofit schools with the safe and effective use of educational technology. Helping our members get access to affordable internet for advancing learning opportunities is a key element of our mission. Mobile Beacon's broadband service supports thousands of students and teachers across the United States with a reliable internet connection to accomplish their education work and learning. In addition, schools are saving significant budgeted dollars with an EBS-enabled, private, $10/month internet plan that offers uncapped data. These savings are reinvested to support other critically underfunded educational programs. Some school districts using the Mobile Beacon service are saving tens of thousands in internet costs each year. Mobile Beacon's donation program has provided over 3,100 free 4G hotspots to 660 US schools and the requests for donations have been steadily increasing as more teachers learn about this program."
Eagle County, Colorado **(Voqal Comments)**	"In other areas, school districts are bridging the digital divide and the homework gap using EBS frequencies by partnering with wireless internet service providers (WISPs) to deploy fixed wireless systems. One such example is in the rural town of Red Cliff in Eagle County, Colorado. The Eagle County School District implemented a program to provide a connected device to every student, but families

	in Red Cliff had no home broadband access. In December 2017, that changed when enabled by an EBS lease agreement FORETHOUGHT.net, a local WISP, deployed broadband to the small mountain town. Before broadband, residents were paying $120 to $160 per month for satellite internet plus additional costs for satellite television. Both services were severely impaired by weather-related outages, which were common due to the 150 to 350 inches of snowfall Eagle County receives annually. To access the broadband necessary to complete their homework assignments, parents with school-aged children were forced to travel 20 miles roundtrip on windy mountain roads. The town had urged the local phone company to deploy broadband to no avail. With the help of state grants, Red Cliff took matters into its own hands and built towers both in town and on a ski lift nearby. FORETHOUGHT.net, which had a lease agreement to utilize the Eagle County School District's EBS license, received state grant funding for broadband equipment, and was then able to deploy service. Today, residents have true broadband speeds – 25 Mbps download and 5 Mbps upload – for just $70 per month. Roughly 70 homes are now subscribers, and each is receiving better service and saving hundreds per month when factoring in the use of broadband-enabled technologies, such as video streaming and Wi-Fi calling, as substitutes for traditional services. This a significant boost for the local economy. The EBS lease agreement was key to the project's success; without this public-private partnership encouraged by the FCC, FORETHOUGHT.net would not have been able to provide such a service."
Florida Atlantic University **(South Florida EBS Licensees Comments)**	"FAU has used funds generated from its leasing of EBS spectrum for such projects as the construction and support of a new IP based streaming video platform, as well as network and classroom technology buildouts. Miami-Dade and Broward each use funds received from their leases to subsidize the operation of their programming and online production departments as well as technology and communications projects within the districts."
Kings County School District **(Consortium for School Networking Comments)**	"Located in the San Joaquin Valley, the district serves 27,000 students living across a 1400 square mile, mostly agricultural region. District leaders recognized that many students in the district lacked access to reliable broadband to complete homework. After evaluating the problem, Kings County leaders decided to use EBS to provide home broadband connectivity for district students. Launched in 2011, the Kings County 9 EBS system uses towers built on school roofs. District leaders credit the EBS system with supporting district performance improvements including declining suspensions (60% decrease), fewer failed classes (10% decrease),

	better standardized test scores (students passing core courses has doubled) and higher graduation rates (over 90%)."
Lee County, North Carolina **(North Carolina Department of Information Technology, Broadband Infrastructure Office Comments)**	"Lee County schools collaborated with a cell phone company to create a pilot to provide English as a second language (ESL) students with home access. The pilot uses cache software program that allows teachers to download assignments to the students' devices. The cell phone company then provides a hotspot and a low bandwidth connection at home. During the pilot, there is no cost to the students.'
Miami-Dade and Broward Counties, Florida **(South Florida EBS Licensees Comments)**	"In 2012 both Miami-Dade and Broward converted their video distribution systems to digital and changed frequencies to comply with the FCC's new band plan. Broward's system was redesigned and upgraded to implement a state of the art digital video distribution system to provide 8 discreet video streams to most of its 327 schools using its two of its mid-band channels. Through BECON Broward produces and provides produced educational programming to its schools, classrooms and other district sites. Miami-Dade similarly updated its digital video distribution system both at its studios and at most of its 467 schools and district sites to provide 12 video streams using two of its mid-band channels. Miami-Dade uses its production and distribution capabilities to provide both produced and procured educational and informational programming to its schools."
Montgomery County and Catawba County, North Carolina **(North Carolina Department of Information Technology, Broadband Infrastructure Office Comments)**	"In Montgomery County, the school district equipped school buses with mobile hotspots. The hotspots and service were purchased through the state's contract with Verizon Wireless and cost $38 per month. These hotspots allowed those students with lengthy commutes, some up to 120 minutes, to complete homework assignments. An unforeseen benefit was the dramatic decrease in reported behavior problems on buses. Catawba County implemented a similar program sponsored by GoogleFiber, added teachers to the buses and created a mobile study hall."
Mural Net	"Mural has worked with tribes such as the Havasupai and ISPs like Niles Radio Communications to build and maintain LTE networks that deliver high-speed internet to the homes of students on rural tribal lands at no cost to the tribe. Due to low equipment costs, use of existing infrastructure, partnerships with local educational

	institutions and ISPs, and the use of open source management software, networks can be erected for as little as $10,000 per node site. For the Havasupai, this was sufficient to cover the whole town of Supai, the most remote community in the lower forty-eight states. In fact, if the FCC allowed the Havasupai Tribal Council to utilize two sets of contiguous 20 MHz bandwidth, every home in the remote town could have high speed internet within a week."
National EBS Association	"Indeed, in areas where it is licensed, the 2.5 GHz band already carries the highest percentage of Sprint's LTE data traffic and provides Sprint with significant additional capacity for future growth, particularly for 5G deployments.6 At the same time, the band is used for a wide variety of educational purposes including, for example, providing thousands of teachers and students in Los Angeles with Sprint-connected iPads, providing Internet connectivity to learning centers and off-the-grid school areas in the San Francisco Bay Area, and providing home and hospital bound students in Florida with mobile hotspots to keep them connected to virtual classes, counselors and online learning resources while coping with health and corrective issues. Other EBS licensees provide mobile hotspots to schools, libraries, nonprofits, and low-income communities across the country in an effort to bridge the digital divide and address the homework gap."
North American Catholic Educational Programming Foundation and Mobile Beacon	"As the service organization of an EBS licensee, Mobile Beacon strengthens communities across the United States by providing anchor institutions with high-speed, unlimited, $10/month mobile internet access so they can better serve their local communities. Today, 799 schools, 739 libraries, and 4,322 nonprofits rely on Mobile Beacon's internet service each day. Given the number of individuals an anchor institution serves, one broadband connection has an educational, social, and economic multiplier effect. We estimate that anchor institutions are using Mobile Beacon's internet service to benefit more than 425,000 individuals throughout the United States."
Northern Arizona University Foundation, Inc.	Serves as a vital partner to 22 tribal communities in Arizona, enrolling more than 1,500 students from 128 tribal communities in the US. Through a commercial partner, NAUF through NAU Online provides distributed learning at more than 30 campuses throughout Arizona.
Northern Michigan University	"Today, NMU operates the nation's largest, self-deployed, educational LTE network covering significant portions of the 12,764 square miles of rugged terrain in Michigan's rural Upper Peninsula. Nearly 9,000 of its students, faculty and staff access this network to

	complete study and teaching assignments. NMU offers its educational broadband service throughout Michigan's Upper Peninsula over an eight-GSA region, primarily in areas where commercial broadband is unavailable. Even where there is overlapping service with traditional cable or DSL broadband, NMU's LTE provides an affordable alternative that is specifically designed to serve educational needs. The University provides over 435 courses that benefit from on-line access. Of the total number of courses offered annually, an average of 2,500 classes use the University's online course management software, EduCat, to facilitate faculty and student access to class notes, research material, assigned readings and multi-media content. Additionally, NMU offers 219 online courses that allow enrolled students to complete their coursework without having to maintain a physical presence on NMU's campus. Web-based courses such as these continue to grow in popularity due to the flexibility they afford students who increasingly must balance the demands of employment, school, and family obligations."
Orange County and Charlotte-Mecklenburg Library Systems **(North Carolina Department of Information Technology, Broadband Infrastructure Office Comments)**	"The Orange County and Charlotte-Mecklenburg Library systems created a "wifi to go" program that allows patrons check out mobile hotspots for use at home. The programs have been incredibly successful. Using this idea our office partnered with the State Librarian's office and received an International Museum and Library Sciences (IMLS) grant for $250,000 to create a digital literacy instructor and playbook that includes a hotspot checkout program for K-12 students."
PCs for People	"For twenty years, PCs for People has provided affordable technology to qualifying low-income individuals and families. As a national 501©(3) organization providing much-needed technology and support to underserved Americans in all 50 states, we have become a nonprofit leader in the digital inclusion world…Today, more than 11,500 low-income households in 45 states have high-speed, reliable internet service that they could not otherwise afford. Recipient households have on average 3.2 individuals with 1.8 children per home, and they are surviving on an average of just $14,000 per year. Without this service, children in these households would fall further behind the homework gap, and parents and other adults in the home would be unable to take online courses, apply for a job or develop other in-demand marketable workforce skills, falling further behind in our highly-digitized world."

Rural EBS Coalition	The Coalition is comprised of EBS licensees, lessees and interested parties that serve very rural portions of the United States. Several Coalition members, such as Central Texas Communications, Inc. and Coleman County Telephone Cooperative, Inc., have leased and operated EBS spectrum for more than 15 years, first providing wireless video services and later transitioning to much-needed broadband services in unserved and underserved areas. Due to its success with the 2.5 GHz band, Coalition member Mark Twain Communications Company recently reinvested in the band by acquiring lease rights to four additional licenses, adding to the nine licenses it already leases. Other Coalition Members such as Peoples Wireless and Etex Communications, L.P. have recently acquired EBS leases in order to provide fixed wireless services to customers who would not otherwise have access to broadband services at all."
South Florida EBS Licensees	The South Florida EBS Licensees represent a cross section of educational stations licensed on the EBS band and include three of the ten largest school districts in the nation as well as a State University and a State College. Each of the schools hold EBS licenses and each has contributed its excess capacity, through leasing, to allow for the construction of large robust commercial communications platforms with enhanced speed and broadband capacity on campus and within their communities. In all cases, as part of their leasing arrangements, the schools have received and have made use of broadband enabled devices for educational and administrative uses by students and faculty. Additionally, the facilitation of these robust networks, using leased educational spectrum, has allowed students, faculty and their families more access, through both provided and commercially available wireless devices, to educational content on campus, at home and throughout the community, thereby contributing to the incremental bridging of the digital divide and the homework gap. Under each lease, funds generated through the leasing of excess capacity have been channeled into projects that help to enlarge the communications and wireless capacity and educational capabilities of these institutions. In addition, a number of licensees have continued to use the mid-band capacity of their channels for traditional video distribution networks. For example, in 2012 Miami-Dade and Broward school districts invested over ten million dollars to modify, modernize and upgrade their EBS video distribution networks at both their transmission facilities and at almost 800 schools."
TechSoup Global	"TechSoup is a San Francisco-based 501(c)(3) nonprofit organization established in 1987. TechSoup's mission is to bridge the "digital divide" that spurs inequality in communities across not just the U.S., but the globe. Working with over 66 donor partners,

	including major technology providers like Microsoft, Adobe, Google, and Amazon, TechSoup provides technologically underserved communities with vital technology and connectivity services. Included among such services are internet access, funding, hardware, software, and training, including product donations to the social sector valued at over $11.6 billion USD.". . . "As of June 2018, TechSoup has facilitated donation requests resulting in more than 24, 000 Mobile Beacon hotspot devices and internet service plans being distributed to 7,103 eligible 501(c)(3) schools, nonprofit organizations, and public libraries across the nation. These community-based organizations and their constituencies rely on affordable, unlimited, high-speed internet service every day."