



May 9, 2019

By Electronic Filing

Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street SW
Washington, DC 20554

Re: *Transforming the 2.5 GHz Band*, WT Docket No. 18-120

Ms. Dortch:

Voqal strongly supports the recent filing by the North American Catholic Educational Programming Foundation (“NACEPF”) and Mobile Beacon, which demonstrates the significant public interest benefits of rationalizing existing EBS license areas to align them with county boundaries.¹ As was made clear by a variety of commenters—including EBS licensees, national operators, and commercial trade associations—county-based rationalization would instantaneously put mid-band spectrum into the hands of both educators and their commercial partners, immediately stimulating new rural deployments and accelerating investment in 5G. At a time when the Commission is proactively seeking to accelerate rural broadband deployment and position the U.S. to win the “race to 5G,”² this proceeding—and specifically this decision on rationalization—has the potential to help or hinder these goals.

The benefits of rationalization are clear. The Commission in its NPRM explains two key benefits of rationalization. First, rationalization of existing GSAs would “be easier to determine than a circular GSA that cuts across regular geographic boundaries.”³ The

¹ Letter from Katherine Messier, NACEPF and Mobile Beacon, to Marlene H. Dortch, Secretary, Federal Communications Commission, WT Docket No. 18-120 (filed Apr. 25, 2019) (“NACEPF and Mobile Beacon Rationalization Ex Parte”).

² As Chairman Pai has explained, “when we talk about seizing the opportunities of 5G . . . [w]e are talking about unleashing benefits for all Americans.” See FCC Chairman Ajit Pai, Remarks at the National Spectrum Consortium 5G Collaboration Event, at 2 (Apr. 30, 2019), *available at* <https://docs.fcc.gov/public/attachments/DOC-357245A1.pdf>. Commissioner Carr has similarly emphasized that “[w]e want to see next-generation broadband and the economic opportunity it enables available in every community.” See FCC Commissioner Brendan Carr, Remarks at the Transatlantic Policy Dialogue, at 2 (Feb. 25, 2009), *available at* <https://docs.fcc.gov/public/attachments/DOC-356317A1.pdf>.

³ *Transforming the 2.5 GHz Band*, Notice of Proposed Rulemaking, 33 FCC Rcd. 4687, 4693 ¶ 15 (2018) (“NPRM”).

Commission goes on to explain that rationalization would “yield white spaces that also are based on the boundaries of census tracts and/or counties . . . rather than irregular shapes and slivers. This regularity in the shape and size of white spaces would facilitate new entry into the 2.5 GHz band.”⁴

The record overwhelmingly validates these advantages of rationalization relative to other proposals. Numerous EBS licensees have described their plans to deploy within *weeks* of a Commission decision that would allow them to expand their service in underserved rural areas. In fact, multiple requests are currently pending before the FCC seeking authorization to do just that.⁵ Similarly, Sprint, the commercial partner of many educational licensees, has already deployed 5G, massive-MIMO antennas at 1,500 sites, using 60 megahertz of contiguous 2.5 GHz spectrum in key markets.⁶ Rationalizing EBS license areas will immediately and significantly increase the area over which such contiguous holdings are possible. As a result, larger contiguous blocks covering greater geography will extend access to this revolutionary 5G wireless technology to more Americans.

Rationalization will also promote long-term investment in the band by easing the ongoing burdens on both licensees and the Commission itself of applying the existing archaic licensing scheme. Rather than the Commission setting out license boundaries, the existing scheme requires licensees themselves to perform sophisticated geospatial analysis to determine where license areas begin and end.⁷ Tellingly, although the Commission adopted its current “splitting the football” approach to defining license areas fifteen years ago,⁸ its own Universal Licensing System still does not properly reflect the license areas the Commission adopted. If the Commission forgoes rationalization altogether, it simply perpetuates this information failure. The Commission cannot rationally move forward to determine how best to allocate available EBS spectrum without providing itself, let alone interested stakeholders, better information on

⁴ *Id.* at 4693 ¶ 16.

⁵ *See, e.g.*, Application of the Board of Trustees of Northern Michigan University, ULS File No. 0008274506 (filed June 28, 2018); Application of the Havasupai Tribe, ULS File No. 0026881680 (filed Apr. 24, 2018); Application of Kings County Superintendent of Schools, ULS File No. 0007949112 (filed Oct. 3, 2017).

⁶ Dan Meyer, *Sprint and T-Mobile Throw More 5G Pieces on the Table*, SDX Central (Jan. 7, 2019), <https://www.sdxcentral.com/articles/news/sprint-and-t-mobile-throw-more-5g-pieces-on-the-table/2019/01/>; Seeking Alpha, *Sprint Corporation (S) CEO Michel Combes on Q4 2018 Results-Earning Call Transcript 2*, available at <https://seekingalpha.com/article/4261276-sprint-corporation-s-ceo-michel-combes-q4-2018-results-earnings-call-transcript?page=2> (last visited May 9, 2019).

⁷ This process involves drawing a 35-mile radius circle from a specified center point and then, where these circles overlap, split the “football” resulting from this overlap by drawing a chord from the two points where the perimeters of the license intersect.

⁸ *See 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*, Report and Order and Further Notice of Proposed Rulemaking, 19 FCC Rcd. 14165, 14169–70 ¶ 6 (2004).

the contours of existing license areas. Rationalization solves this problem and the Commission should take this opportunity to bring the EBS licensing regime into the twenty-first century.

Although the rationalization process will expand existing license areas, the public interest benefits of rationalization vastly outweigh theoretical concerns about “windfalls”—even more so than in the Spectrum Frontiers proceeding where, facing similar equities, the Commission concluded that the need to “expedit[e] service” and ease coordination outweighed any concerns about granting additional spectrum to existing licensees.⁹ Here, the large majority of licensees would gain only a very modest amount of spectrum—fractions of a small number of counties, largely in rural areas. And even in the few cases where licensees’ license areas may grow significantly, they would do so only because the licenses cover portions of very large, rural counties—the areas most in need of broadband connectivity, and those least likely to receive it through purely commercial deployment. Moreover, the Commission could impose robust build-out requirements on any newly licensed area to ensure that the spectrum is either put to use or returned to the Commission for relicensing. Finally, the beneficiaries of any purported windfall would be existing EBS licensees. Pursuant to existing eligibility rules, these licensees are exclusively educational institutions and nonprofit organizations that serve educators. For the Commission to grant substantial windfalls to existing commercial licensees in other 5G spectrum bands but decline to undertake a modest rationalization of EBS spectrum when students and educators most stand to benefit would be arbitrary at best.

An EBS overlay auction is highly problematic and likely to fail. Rationalization would also be a far more effective means of quickly spurring 5G deployment than an overlay auction—especially in rural areas. Unlike an overlay auction, rationalization could occur extremely quickly, likely in a matter of months. The Commission need only issue an order announcing its decision to rationalize. An overlay auction, by contrast, would require substantial additional proceedings. Although the NPRM mentions the possibility of an overlay auction in passing,¹⁰ it did not solicit, and did not receive, any substantial comment on how or whether an overlay auction could be conducted in practice. There is also virtually no record on technical questions about cross-border interference between underlay and overlay licensees.

Cross-border interference issues will be especially pressing because EBS spectrum is already widely licensed and deployed, with the vast majority of Americans living in EBS coverage areas. Thus, in most EBS overlay license areas, the overlay licensee would be forced to operate, if at all, in small, fragmented areas in close proximity to the underlay licensee’s territory, making harmful interference virtually guaranteed in the absence of clear Commission rules.

Another technical concern highlighted in the docket is with regard to the EBS band plan for newly-licensed areas. Some carriers have called for a reconfiguration of the band plan to produce larger contiguous blocks of spectrum more suitable for broadband buildout. This

⁹ *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services*, Report and Order and Further Notice of Proposed Rulemaking, 31 FCC Rcd. 8014, 8030 ¶ 38 (2016).

¹⁰ NPRM at 4705 ¶ 61.

particular technical issue could further delay the Commission, as it would likely elicit a variety of commercial interest and create complications in the decision process. Certain proposals to reconfigure the EBS band plan raise additional technical issues. One commenter, for example, has proposed to reconfigure the band to produce contiguous blocks of spectrum.¹¹ To determine whether and how to achieve such a reconfiguration will also require significant additional proceedings. In fact, any such reconfiguration of the band plan will increase the extent of encumbrance for an overlay auction. A wider channel will be encumbered whenever there is an encumbrance in any of the existing EBS channels of which it is composed.

Areas already covered by EBS licenses will also badly distort any auction for overlay spectrum rights. In fact, as illustrated below, many overlay license areas will be almost impossible to commercialize for any operator that does not also have access to geographically adjacent EBS licenses on the same channel,¹² meaning that they will either remain unlicensed or be licensed to the incumbent operator for pennies on the dollar. History bears this out. In Auction 86, the Commission's auction for similarly encumbered BRS spectrum, the Commission received only \$19.4 million in bids, with more than a fifth of the licenses made available failing to clear their reserve prices—largely in rural areas.¹³ The licenses that *did* clear their reserve prices overwhelmingly went to Clearwire, which also had access to the corresponding underlay licenses.

At the same time, an overlay auction will likely fail to identify the entity that could truly put the spectrum to its highest and best use: the educational entity that holds the underlay license. Educational institutions and nonprofits are unlikely to prevail in any overlay auction, not because they will not put the spectrum to efficient use, but simply because they do not have the same capital raising capabilities as commercial operators. Some may be legally barred from participating in commercial auctions.¹⁴ And in cases where the most effective use of spectrum *does* involve commercial deployment, the Commission has encouraged¹⁵ educational licensees to enter into partnerships with commercial operators to maximize both the commercial and non-

¹¹ Comments of the Wireless Internet Service Providers Association, WT Docket No. 18-120, at iv (filed Aug. 8, 2018) (“The Commission should conduct auctions in four contiguous channel blocks at the county level to better harmonize with the expanded GSAs for existing EBS licensees.”).

¹² *See, e.g.*, Comments of AT&T Services, Inc., GN Docket No. 12-354, at 8–9 (filed July 24, 2017).

¹³ *See Auction of Broadband Radio Service Licenses Closes; Winning Bidders Announced for Auction 86*, Public Notice, 24 FCC Rcd. 13572, Attachment A at 13582–85 (2009).

¹⁴ *See* Joint Comments of National EBS Association and Catholic Technology Network, WT Docket No. 18-120, at 12 (filed Aug. 8, 2018) (quoting the FCC's concerns in the NPRM regarding how “public and educational institutions may be constrained from participating in competitive bidding by statutory or institutional constraints, such as mandates regarding budget processes”); Comments of WCA, NIA and CTN at 105 n.225, WT Docket No. 03-66 (filed Sept. 8, 2003) (“It is doubtful whether many public educational entities would be able to participate in an auction for frequencies, either because of legal or financial restrictions.”).

¹⁵ *See* Comments of Voqal, WT Docket No. 18-120, at 3 (filed Aug. 8, 2018) (“Voqal Comments”); Comments of North American Catholic Educational Programming Foundation, Inc. and Mobile Beacon, WT Docket No. 18-120, at 39–40 (filed Aug. 8, 2018).

commercial, educational benefits of EBS spectrum for connecting rural America and closing the digital divide. By contrast, rationalization will make spectrum available to these existing educational licensees immediately, without requiring them to raise millions of dollars to purchase the spectrum they need to serve their communities.

Rationalizing existing licenses areas will also create secondary market opportunities for rural Wireless Internet Service Providers (“WISPs”) and other smaller commercial entities that may not be able to meaningfully participate in an auction. Although a fifth of licenses did not meet their reserve prices in the BRS auction, there are surely numerous rural WISPs that could have put that spectrum to effective use if they had the opportunity to enter a public-private lease arrangement with an educational licensee. The same will very likely be true in any potential EBS overlay auction. Unlike large commercial operators,¹⁶ educational institutions have a proven track record of partnering with WISPs and other entities to provide service in rural America.¹⁷

Far from a minor concern, if the Commission fails to rationalize current licenses, these problems will pervade an EBS overlay auction. Using the current GSAs for existing licenses, it is true that some fraction of counties will be fully covered by existing EBS licensees and another fraction will be fully uncovered. But—absent rationalization—the *majority* of counties will be encumbered by underlay licenses that give rise to all of the complications and challenges discussed above. Looking at channel G1, our analysis shows that 1,662 of the nation’s 3,200 counties will be encumbered—twice as many as compared to either those that are fully covered or fully available. Analysis of other EBS channels shows a similar pattern.

¹⁶ See, e.g., Comments of EBTX Wireless, LLC, GN Docket No. 12-354, at 2 (filed July 21, 2017) (“Rural WISPs serve a great portion of the map that the big guys do not really care to provide enough equipment to cover.”); Comments of New Lisbon Broadband and Communications (NLBC), GN Docket No. 12-354, at 1 (filed July 21, 2017) (“These WISPs will deploy faster and in more rural areas than large Cellular companies will ever consider.”); Comments of Virginia Everywhere, LLC dba All Points Broadband, GN Docket No. 12-354, at 1 (filed July 21, 2017) (“[W]e deploy . . . broadband service to areas where there are no terrestrial alternatives or a lack of choice.”).

¹⁷ See, e.g., Voqal Comments at 12–13 (describing how FORETHOUGHT.net, a local WISP, utilized an EBS lease agreement with the Eagle County School District to deploy service to the small mountain town of Red Cliff, Colorado).

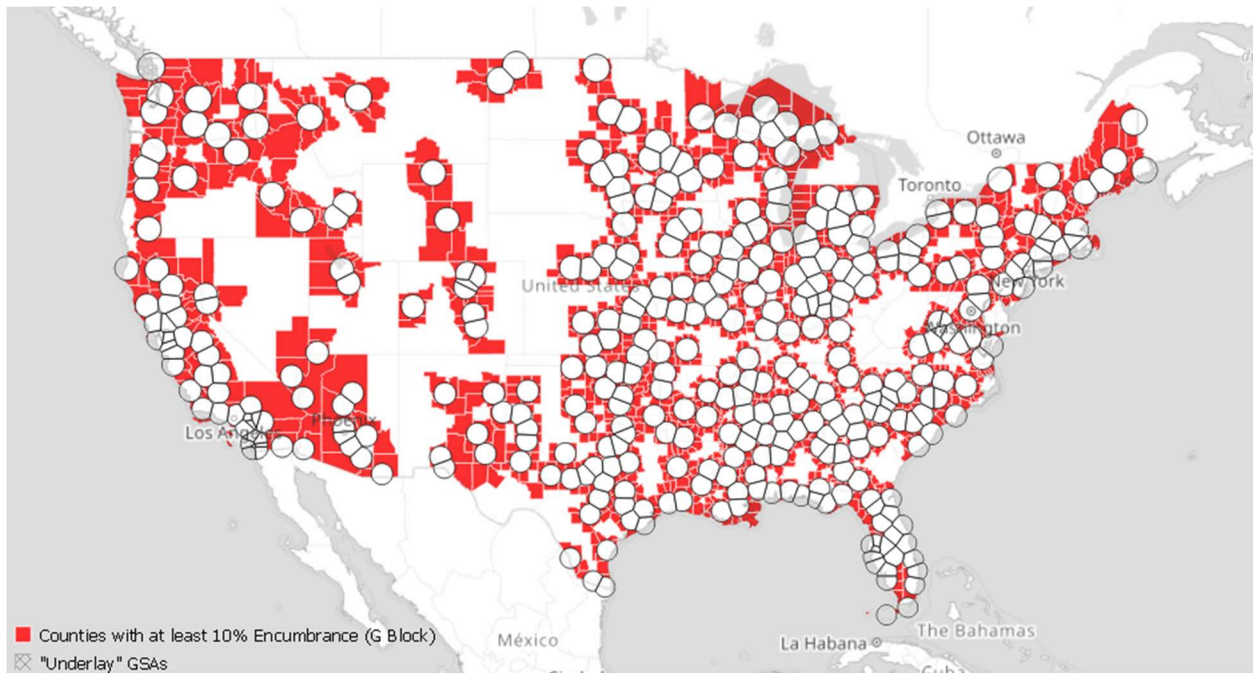


Figure 1: Counties with at least 10% encumbrance in channel group G1.

Because most population centers are covered by existing EBS licensees, these problems will particularly plague metropolitan areas. The maps below illustrate this for Kansas City, KS; Philadelphia, PA; Portland, ME; Toledo, OH; Akron, OH; and Detroit, MI:

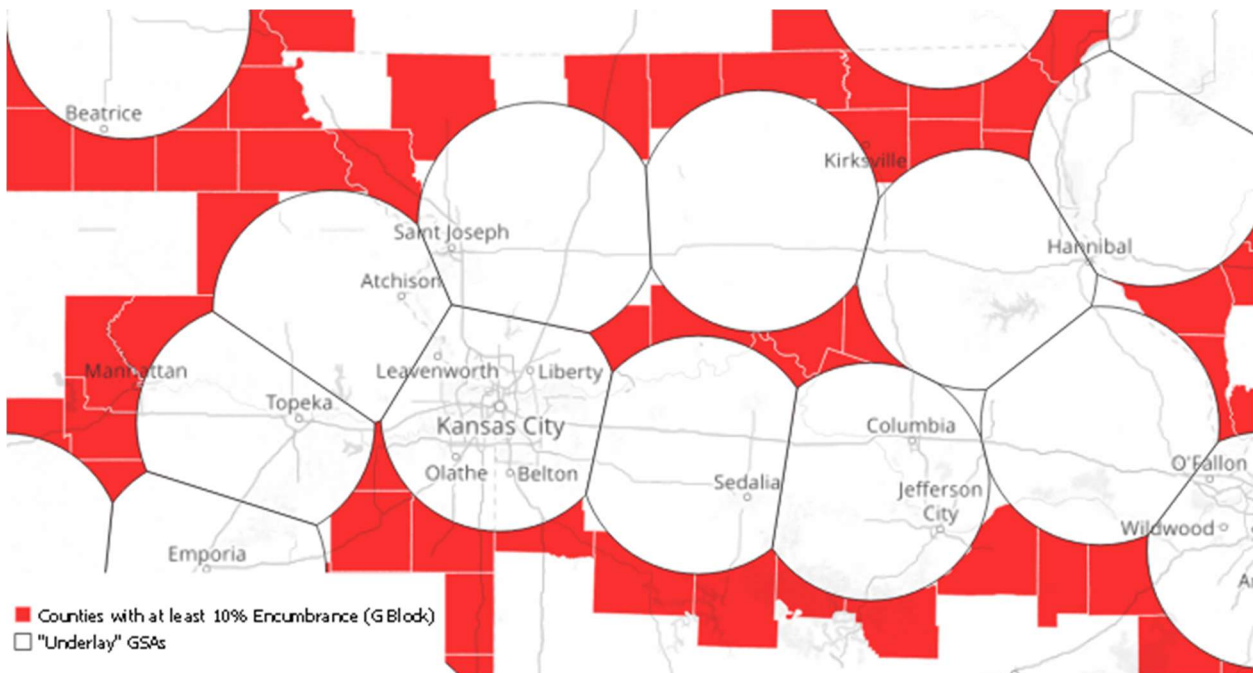


Figure 2: Counties with at least 10% encumbrance in channel group G1 near Kansas City, KS.

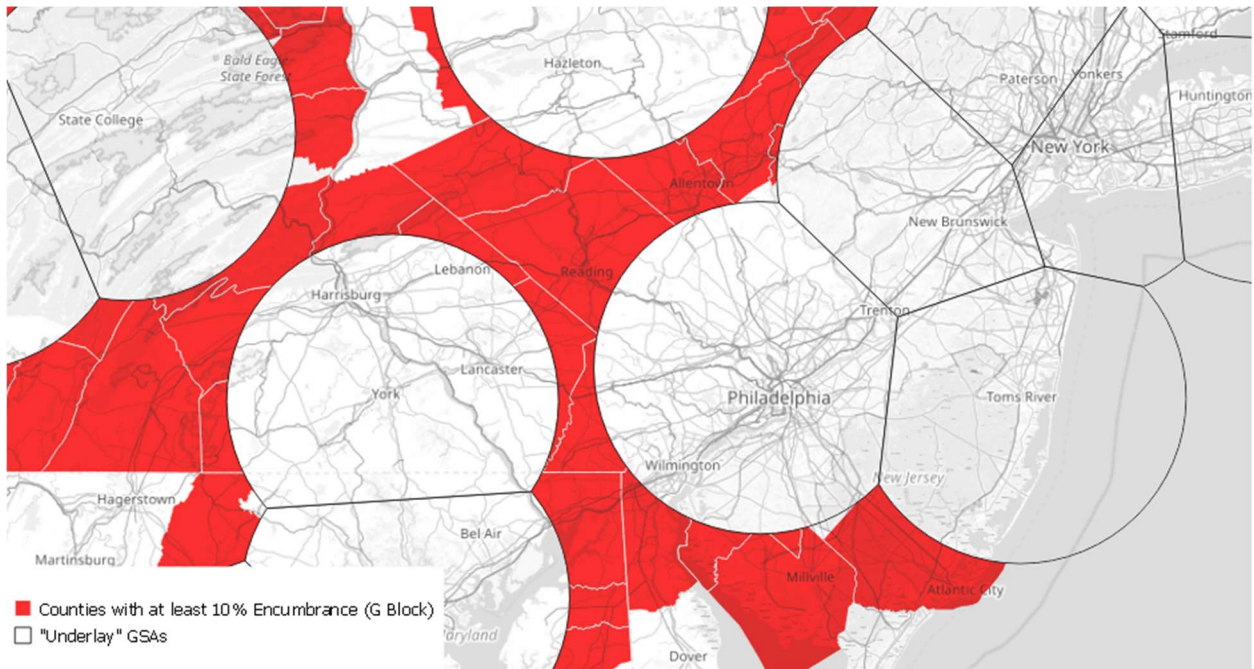


Figure 3: Counties with at least 10% encumbrance in channel group G1 near Philadelphia, PA.

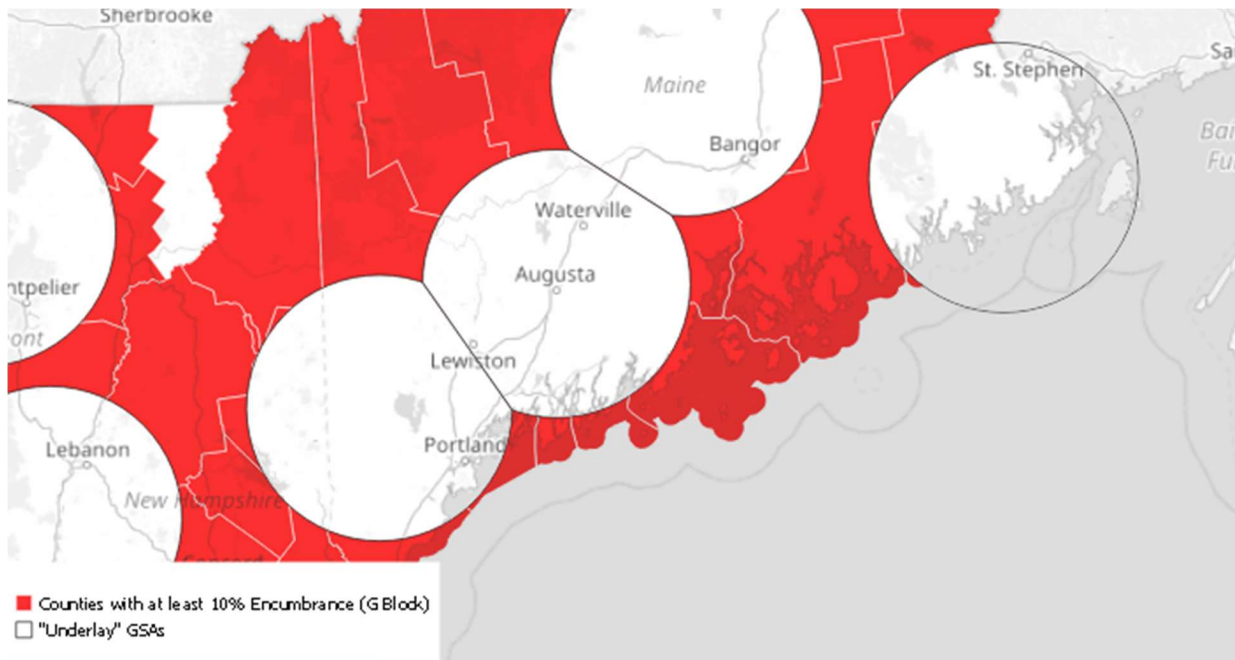


Figure 4: Counties with at least 10% encumbrance in channel group G1 near Portland, ME.

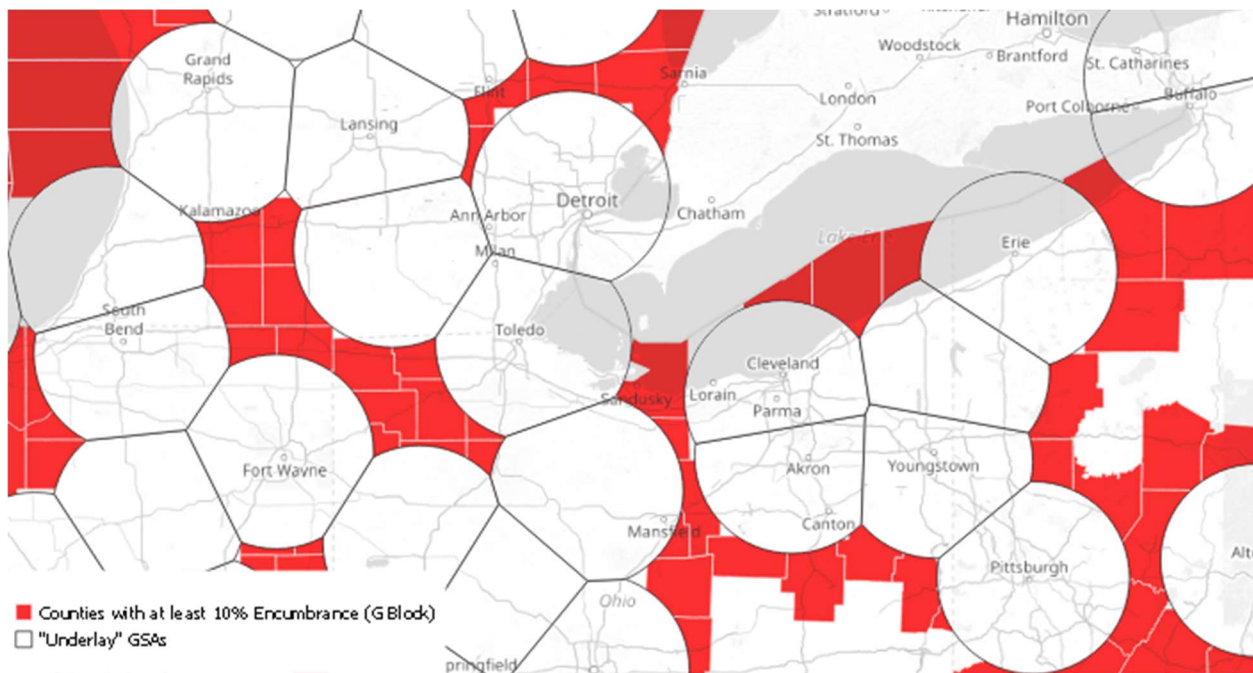


Figure 5: Counties with at least 10% encumbrance in channel group G1 near Akron, OH, Toledo OH, and Detroit, MI.

These examples are not isolated—in fact, similar GSA configurations exist in every channel group and in many geographic areas throughout the U.S. For the reasons discussed above, the technical and economic challenges of serving the slivers of area interleaved around these urban centers will doom any EBS overlay auction to failure. Rather than duplicate the flawed BRS auction, the Commission should expeditiously fill such EBS coverage gaps and accelerate deployment by rationalizing the outdated GSAs to county boundaries.

Finally, all EBS licenses should be treated equally. The Commission should not arbitrarily exclude classes of existing licensees from the rationalization process. Plainly, the Commission cannot fully rationalize EBS spectrum through a process that only applies to certain licenses. Rationalization of some but not all license areas would have serious consequences, namely in availability of 5G. Deployment of 5G is dependent upon large contiguous blocks of spectrum. While 5G deployment accelerates in certain markets through the availability of newly contiguous blocks of spectrum and greater geographic reach, others that are not rationalized would be arbitrarily left behind simply because the existing licensee belongs to a disfavored class. Similarly, while some rural areas will benefit from expanded broadband access, others would remain left behind.

In fact, not only would an inconsistently rationalized band fail to achieve many of the goals of rationalization, it would *worsen* the administrability problems that affect existing EBS licenses. In an inconsistently rationalized band, operators would be faced with all the challenges they face today in determining the boundaries of licenses under the “splitting the football” approach, which would continue to apply to many licenses, *plus* the added challenge of

Ms. Marlene H. Dortch

May 9, 2019

Page 9 of 9

determining in each case which system applies to a given license. Because the only difference between rationalized and unrationalized licenses would be the identity of the licensee at the time the Commission chooses to rationalize—not frequency, geography, or any other easily determined characteristic of the license—this could present a significant additional complication.

Unlike overlay auctions, which are sparsely mentioned in the record let alone defended with economic analysis, the Commission has developed a robust record that addresses the benefits of rationalization and provides several concrete proposals for achieving this goal.¹⁸ If the Commission seeks to immediately expand access to rural broadband and promote the deployment of 5G services, all while continuing to reap the educational benefits of the existing EBS rules, it can do so simply by adopting the county-based rationalization strategy that has strong record support.

Sincerely,

/s/ Mark Colwell

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¹⁸ See, e.g., NACEPF and Mobile Beacon Rationalization Ex Parte; Letter from Mary N. O'Connor & Paul J. Sinderbrand, Counsel, Wireless Communications Association International, to Marlene H. Dortch, Secretary, Federal Communications Commission, WT Docket No. 18-120 (filed Mar. 11, 2019).