

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

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| In the Matter of |) | |
| |) | |
| Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz |) | GN Docket No. 17-183 |
| |) | |
| Petition for Rulemaking to Amend and Modernize Parts 25 and 101 of the Commission's Rules to Authorize and Facilitate the Deployment of Licensed Point-to-Multipoint Fixed Wireless Broadband Service in the 3700-4200 MHz Band |) | RM-11791 |
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**COMMENTS OF FRONTIER COMMUNICATIONS
CORPORATION, WINDSTREAM SERVICES, LLC, AND
CONSOLIDATED COMMUNICATIONS, INC.**

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I. INTRODUCTION AND SUMMARY.

Frontier Communications Corporation (“Frontier”), Windstream Services, LLC (“Windstream”), and Consolidated Communications, Inc. (“Consolidated”) hereby submit comments to the *Mid-Band Spectrum Notice of Inquiry*.¹ Together, these three carriers have successfully expanded broadband to millions of rural Americans and are eager to continue bringing faster broadband to millions more. Our companies believe that expeditious access to the 3.7-4.2 GHz band spectrum for rural fixed point-to-multipoint deployments, such as through the rules proposed by the Broadband Access Coalition (“BAC”),² would provide another key tool in the toolbox to reach the hardest to serve rural Americans..

¹ *Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz*, Notice of Inquiry, 32 FCC Rcd 6373 (2017) (“*Mid-Band Spectrum NOI*”).

² Petition for Rulemaking of the Broadband Access Coalition, RM-11791 (June 21, 2017) (“*BAC Petition*”).

In particular, our companies are in the process of investing more than three billion dollars to bring broadband to more than a million homes and businesses (representing more than two and a half million Americans) each year as part of Phase II of the Connect America Fund (“CAF”) program. Given this massive scale of investment – scheduled through year-end 2020 – making this spectrum available as quickly as possible would enable our companies to provide broadband to more Americans, especially in the most rural parts of our footprints. This underutilized spectrum presents the Commission with a rare opportunity to further promote rural broadband expansion.

At the same time, allocating this spectrum for rural fixed point-to-multipoint use would not foreclose other intensive uses in the future. Today there is a relative spectrum abundance in rural America, and this mid-band spectrum, which is perfect for providing robust capacity, is more likely to be intensively used by mobile carriers in urban and suburban, rather than rural, areas. Just as the Commission plans to do with the 3.5 GHz band, it can permit fixed wireless deployment now and allow a spectrum access system to mediate coexistence of other uses at a later date. With the massive benefits that fixed point-to-multipoint use can bring to rural America today, the Commission cannot afford delay.

II. FRONTIER, WINDSTREAM, AND CONSOLIDATED HAVE EXPANDED RURAL BROADBAND TO MILLIONS OF RURAL AMERICANS AND ARE COMMITTED TO BUILDING ON THAT TRACK RECORD.

Our companies have an extensive track record in bringing broadband to rural Americans, particularly in rural areas to which other large internet providers will not build. Even before the Commission adopted the CAF program as part of the *2011 USF/ICC Transformation Order*, Frontier, Windstream, and Consolidated made significant investments to bring high speed

internet services to rural areas.³ As the Commission explained in adopting the CAF, “[t]he fact that incumbent LECs’ have had a long history of providing service” in rural America “puts them in a unique position to deploy broadband networks rapidly and efficiently in [these] areas.”⁴ And the Commission’s prediction has proved true, with our companies continuing to make significant investments in rural America, including through the CAF program. For example, with CAF Phase I, our companies collectively deployed broadband to hundreds of thousands of previously underserved and unserved rural Americans.⁵

CAF Phase II has presented an even greater opportunity and is on track to be an even greater success. Our companies have collectively committed to bring speeds of 10/1 Mbps or faster to nearly 1.3 million households and businesses (covering an estimated 2.6 million rural Americans) by year-end 2020.⁶ We are already well on our way, with a deadline to reach 40 percent of those homes and businesses – over 500,000 – by year-end 2017.⁷ We also continue to explore all possible avenues for further expanding broadband in high-cost rural areas, including through the CAF Phase II Auction. As we continue this effort to bridge the digital divide, we believe that wireless spectrum allocated with rules that accommodate fixed point-to-multipoint

³ See, e.g., *Ex Parte* of Frontier and CenturyLink, WC Docket 10-90 at 2 (Oct. 8, 2014).

⁴ *Connect America Fund*, Report & Order, 26 FCC Rcd 17663 ¶ 177 (2011) (“*2011 USF/ICC Transformation Order*”).

⁵ See, e.g., FCC, *Price Cap Carrier Resources* (last accessed Sept. 9, 2017), <https://www.fcc.gov/general/price-cap-resources#p1>.

⁶ See FCC, *State, County and Carrier Data on \$9 Billion, Six-Year Connect America Fund Phase II Support for Rural Broadband Expansion* (Sept. 15, 2015), available at <http://bit.ly/2yoy13r>.

⁷ See, e.g., Frontier, *Frontier Communications Reaches Connect America Fund Milestone in Nine States: 40 percent Milestone Reached Well Ahead of Schedule* (July 18, 2017), <http://bit.ly/2fjG3Wx>.

use in rural America would increase the broadband speeds our companies can offer at some locations and the number of Americans served in the most rural portions of our footprints.

III. MID-BAND SPECTRUM ALLOWING FOR FIXED POINT-TO-MULTIPOINT DEPLOYMENTS COULD GREATLY EXPAND BROADBAND AVAILABILITY AND SPEEDS IN RURAL AMERICA.

Mid-Band Spectrum – particularly the 3.7-4.2 GHz band contemplated in the NOI – is prime spectrum for rural fixed wireless broadband deployment. This spectrum enables high-bandwidth applications while still allowing for non-line-of-sight deployments over considerable distance. As, for example, Rise Broadband explains, this band “hits the sweet spot for rural, fixed wireless terrestrial services. Unlike 5 GHz or higher bands, these bands allow greater success connecting homes and businesses through obstructions such as trees and buildings.”⁸ Of course, allowing fixed point-to-multipoint rural deployments in other bands the Commission is considering as part of this *NOI* – such as the 5.925-6.425 GHz and the 6.425-7.125 GHz bands – would also greatly aid in rural broadband expansion. The 3.7-4.2 GHz band, however, offers a unique opportunity to greatly increase bandwidths offered and expand broadband reach.

Frontier, Windstream, and Consolidated believe that dedicated spectrum with rules that allow for fixed point-to-multipoint deployments in rural areas would allow us to serve additional hard-to-reach locations and enable faster speeds to others. As part of CAF Phase I and CAF Phase II, we have been deploying to very rural, high-cost areas where the Commission has determined that, absent a subsidy, there is not an economic case for buildout. Based on our experiences, in certain of the hardest to reach, most expensive areas to serve, fixed wireless is another tool we could use to reach more locations or upgrade underserved locations with fast

⁸ Comments of Rise Broadband, RM-11791 at 2 (Aug. 3); *see also BAC Petition* at 4.

speeds (25/3 Mbps and faster).⁹ Fixed point-to-multipoint is another effective way to leverage CAF's investments in driving fiber closer to less-densely populated areas of the Nation and to reach Americans who otherwise would be too far or difficult to connect to broadband.

Frontier, for example, has already begun testing fixed wireless in very rural CAF areas. As Frontier's Chief Financial Officer has explained, Frontier believes that this could be a "good solution" to the deployment challenge "in very rural America[,] and if it works the way [Frontier is] expecting it to work, . . . [Frontier] will deploy more of that next year."¹⁰ As he continued, Frontier is a "big proponent[] of the FCC releasing more spectrum in the 3.5 and higher gig space that we can use. . . . [Frontier] see[s] [it] as another opportunity to . . . create a better broadband product" in rural America.¹¹

With our companies already experimenting with fixed wireless deployments, and with our extensive ongoing investments in rural America, our companies stand ready and eager to deploy more broadband in the most rural parts of our footprint as soon as additional spectrum (and associated equipment) become available.

IV. MAKING FIXED POINT-TO-MULTIPOINT SPECTRUM AVAILABLE IN THE QUICKEST FEASIBLE TIMEFRAME WILL PAY GREAT DIVIDENDS IN RURAL AMERICA.

Time is of the essence. The more quickly the Commission can make fixed spectrum available for rural deployments, the more likely our companies will be able to deploy broadband to more unserved locations and upgrade speeds to underserved rural Americans. With CAF

⁹ See also *BAC Petition* at 17-18.

¹⁰ Perley McBride, CFO, Frontier Communications, *Interview at Goldman Sachs Annual Communacopia Conference* (Sept. 12, 2017), available at <http://bit.ly/2xeHbla>.

¹¹ *Id.*

Phase II, we are investing over three billion dollars in rural areas to improve broadband speeds for millions of Americans. Enabling fixed wireless deployments as quickly as possible could allow us to leverage that technology in the areas that are most expensive to serve and potentially provide even faster speeds over a greater area during this once-in-a-generation expansion of rural broadband.

A. Traditional Mobile Licenses Prevent Fixed Wireless Deployments.

The rules necessary to enable rural fixed point-to-multipoint wireless deployments are no secret. Fixed broadband providers need dedicated spectrum, whether licensed or on a first-come-first-served lightly-licensed basis, to ensure they can meet customer expectations, not to mention CAF quality of service requirements, where applicable.¹² And rules must allow for point-to-multipoint deployment for fixed wireless broadband; point-to-point rules are insufficient and too costly.¹³ Likewise, traditional large area mobile licenses cover much too great of an area and are simply not practical or affordable when a fixed provider may cover only a small portion of that area – perhaps only a single or a few towers in a census tract.¹⁴

Put differently, traditional mobile licensing schemes and license areas do not foster fixed wireless deployment and can impede rural broadband deployment if the spectrum remains

¹² *See, e.g.*, Comments of Cal.net, RM-11791 (Aug. 7, 2017) (“The unlicensed 2.4-GHz band is too narrow, and the unlicensed 5-GHz band is frequently too noisy to find wide enough usable bandwidth to support [faster] speeds while simultaneously serving large numbers of customers.”).

¹³ *See, e.g.*, Comments of GeoLinks, RM-11791 (Aug. 7, 2017) (“[P]oint-to-point licensed services (in the 6, 11, 18 and 23 GHz bands) are very expensive to deploy, requiring additional equipment and infrastructure to then provide connections to multiple users.”).

¹⁴ *See, e.g.*, Comments of Mimbres Communications, RM-11791 (Aug. 7, 2017) (“A traditional spectrum auction would require us to bid on a license covering multiple counties, traversing mountain ranges and areas where we would never realistically be able to provide service.”).

underutilized. Even if mobile licensees are not actively using spectrum in a specific rural area, mobile companies are not interested in negotiating reasonable site-by-site access to fixed operators. This is not an attack on mobile companies – their business models likely do not align, for whatever reason, with subleasing site-by-site fixed wireless deployments. Based on our experiences, we suspect the costs of such individual negotiations may be too great to attract the attention of mobile providers with so many competing business priorities. Adopting near-term rules for the 3.7-4.2 GHz band that accommodate fixed wireless, such as that proposed by the BAC, obviates these problems with traditional mobile schemes.

B. The Broadband Access Coalition Proposes a Straightforward Path for Updating Part 101 Rules So That the Spectrum Can Be Made Available Immediately to Close the Digital Divide.

The BAC has filed a petition for rulemaking proposing a straightforward way to update Part 101 rules so that this spectrum can be made available in the very near term. As Alphabet, for example, explains, “BAC’s proposals would allow limited deployments of point-to-multipoint systems, which would advance the Commission’s goal of expanding broadband service, especially in the remote and underserved areas where terrestrial service is critical and relatively few FSS sites exist.”¹⁵ Similarly, Starry notes that “[b]y making this spectrum available now for point-to-multipoint operations, it can be used to the benefit of broadband consumers across the country.”¹⁶ In particular, the BAC proposal builds on a well-understood, existing framework, Part 101, and appears to propose accommodations to make the framework readily updateable, whether through a future electronic coordination system or a spectrum access

¹⁵ Reply Comments of Alphabet Access, RM-11791 at 5 (Aug. 22, 2017) (“*Alphabet Reply Comments*”).

¹⁶ Comments of Starry, Inc., RM-11791 at 2 (Aug. 7, 2017).

system. While our companies continue to evaluate the specifics of this plan, at a minimum it focuses the Commission upon the correct goal: ensuring that the spectrum is not locked into large mobile wireless geographic licenses that do not allow for fixed wireless use. Simply put, BAC's proposal offers a straightforward path to unleashing this spectrum, and it may be the best way to start ensuring this spectrum starts paying dividends to rural America.

C. Immediately Unleashing the 3.7-4.2 GHz Band for Rural Fixed Wireless Is Consistent with the Commission's and Congress's Priorities in Closing the Digital Divide.

Unleashing this spectrum on an accelerated basis in rural areas would further the Commission's goal of closing the digital divide, including with programs such as CAF. The Commission, through the CAF program, has already identified the areas where fixed broadband deployment is uneconomic, and it is investing \$4.5 billion annually to encourage buildout in those areas – over \$500 million alone with the carriers that are making this filing.¹⁷ Enabling fixed point-to-multipoint broadband deployments in the very near term would greatly further those goals by providing another important avenue for reaching those hardest to serve Americans.¹⁸

At the same time, Congress and the Commission have also been focused on new, innovative solutions for closing the rural digital divide, discussing the possibility of investing auction proceeds towards rural buildout.¹⁹ Immediately enabling rural fixed point-to-multipoint

¹⁷ See, e.g., *2011 USF/ICC Transformation Order* ¶ 18.

¹⁸ See also Comments of GeoLinks, AU Docket No. 10-90 (Sept. 18, 2017) (arguing for spectrum policy that would enable fixed wireless deployments in CAF areas).

¹⁹ See Remarks of FCC Commissioner Ajit Pai, *A Digital Empowerment Agenda*, The Brandery, Cincinnati, Ohio (Sept. 13, 2016) (“*Chairman Pai Digital Empowerment Remarks*”), <http://bit.ly/2pluTEe>; AIRWAVES Act, S.1682 (2017) (“[T]he Commission shall allocate 10 percent of the proceeds from each system of competitive bidding conducted under this Act for

deployments is entirely consistent with this policy – dedicating rural spectrum or proceeds from spectrum to rural deployment. By providing the means for fixed broadband deployments and granting targeted spectrum rights exactly where needed most, the Commission will enable carriers to provide faster speeds to more customers.

Moreover, there is spectrum abundance in rural areas – for example, it is well documented that mobile carriers do not use spectrum as intensively in high-cost areas.²⁰ Chairman Pai has explained that a “wireless carrier may never build out to [rural high-cost] areas if it’s never required to do so, even though its exclusive license prevents anyone else from building out to that same area with that same spectrum.”²¹ Given the relatively less intensive mobile usage in rural areas, fixed point-to-multipoint broadband makes perfect sense for the 3.7-4.2 GHz band. As Alphabet explains, “many point-to-multipoint operations will be in the remote, unserved areas where fixed service is needed most,” while mobile carriers are more likely to use spectrum for “capacity improvements in urban areas.”²²

the deployment of wireless infrastructure in areas that the Commission has determined are underserved or unserved with respect to wireless broadband Internet access service.”), *available at* <https://www.congress.gov/bill/115th-congress/senate-bill/1682/text>.

²⁰ See, e.g., *Connect America Fund*, Report and Order and Further Notice of Proposed Rulemaking, 32 FCC Rcd 2152 ¶ 1 (2017); *Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless Including Commercial Mobile Services*, Nineteenth Report, 31 FCC Rcd 10534 ¶¶ 40-43, 99 (2016).

²¹ *Chairman Pai Digital Empowerment Remarks*.

²² *Alphabet Reply Comments* at 6.

D. Immediately Enabling Rural Fixed Wireless Deployments Does Not Foreclose or Threaten Mobile or Other Uses of the Band in the Future.

Finally, allowing immediate fixed point-to-multipoint operations, particularly in rural areas, would not preclude implementing a different licensing regime or auctioning the spectrum in the future. For instance, fixed deployments could be integrated into a spectrum access system at a later date, much like the Commission is planning for the 3.5 GHz band.²³ As Alphabet, for example, explains, “the Commission can make these changes to Part 101, and permit investment in point-to-multipoint services in underserved parts of the country, without foreclosing or prejudicing” future FCC action in the band.²⁴ As Alphabet further elaborates, the BAC proposal would ensure that devices are “interoperable over the entire [3.7-4.2 GHz] band. This rule would ensure that such equipment will be capable of reconfiguration to adapt to any other future uses the FCC may permit in the band.”²⁵ With continuing innovations in spectrum management and coexistence, the Commission should not delay in delivering a rural dividend with the 3.7-4.2 GHz band.

²³ See, e.g., *Amendment of the Commission’s Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*, Report and Order and Second Further Notice of Proposed Rulemaking, 30 FCC Rcd 3959 ¶¶ 247-378 (2015).

²⁴ *Alphabet Reply Comments* at 6.

²⁵ *Id.*

V. CONCLUSION.

As the Commission is making substantial CAF investments to extend broadband to unserved rural Americans, it really has a once-in-a-generation opportunity to accelerate those multi-billion dollar investments to unleash faster broadband for even more rural Americans. Authorizing point-to-multipoint fixed broadband deployments in the fastest possible timeframe, potentially in the manner the BAC has proposed, would pay great dividends for rural broadband.

Respectfully submitted,

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