



August 23, 2016

Via ECFS

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

RE: NOTICE OF EX PARTE
WT Docket No. 10-208: *Universal Service Reform – Mobility Fund*
WC Docket No. 10-90: *Connect America Fund*

Dear Ms. Dortch,

The Rural Wireless Association, Inc. (“RWA”) writes in reaction to recent filings and activity in the above-referenced Mobility Fund proceeding. Dedicated support for mobile voice and broadband services remains as critical as ever in rural America, and RWA supports the creation of a mechanism that will provide specific, predictable, and sufficient support to sustain and advance the availability of mobile services in high-cost areas. Specifically, this letter responds to a recent blog post by Commissioner O’Rielly,¹ and *ex parte* letters filed by a group of Rural Senators,² United States Cellular Corporation,³ and others. In the absence of a Commission solicitation of public comment on these submissions, RWA believes it is important to update the record with this submission.

MOBILITY SUPPORT MUST BE APPROPRIATELY SIZED AT \$500 MILLION OR MORE ANNUALLY.

RWA agrees with the 26 United States Senators from rural states that recently told Chairman Wheeler “sufficient support must...be available to preserve and expand mobile voice and broadband.”⁴ RWA continues to be concerned by the proposed downward adjustment of the \$500 million annual budget that was originally proposed for Mobility Fund Phase II. The Commission’s proposal to reduce the budget was predicated on estimated February 2014

¹ Federal Communications Commissioner Michael O’Rielly, [A Path For Mobility Fund Phase II?](#), FCC Blog (July 25, 2016) (*Commissioner O’Rielly Blog Post*).

² [Letter](#) to Chairman Tom Wheeler, FCC, from United States Senators Wicker, Manchin, *et. al.* (“Rural Senators”) (July 16, 2016) (*Senate Letter*).

³ [Letter](#) from David LaFuria, Counsel for U.S. Cellular, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 10-208 (Feb. 25, 2016) (*U.S. Cellular Ex Parte*).

⁴ *Senate Letter* at pp. 1-2.

disbursement figures indicating that \$185 million was going to two national providers with announced commercial LTE roll-outs and about \$400 million of annual support was going to smaller and regional wireless providers.⁵ However, this estimate reflects an amount that was frozen and ratcheted down to 60% of the 2011 baseline. \$400 million was not reflective of carriers' costs *then*, and it certainly isn't reflective of carriers' costs *now*.⁶

As noted by United States Cellular Corporation, networks in rural areas are particularly costly to build and maintain.⁷ A rural-based provider's decision to provide robust coverage throughout its entire service area, rather than only providing service along major transportation routes or in population centers, results in additional capital expenses in the form of more radio access network equipment, towers, and "greenfield" backhaul facilities, with a sparse customer base from which to recover costs. Further, rural areas are often far from population centers, surrounded by mountainous or otherwise difficult-to-serve terrain, and experience extreme weather conditions - all of which make equipment and material transport costly from both a construction and operational perspective.

These higher capital expenses are coupled with higher operational expenses including: annual maintenance, administrative support, and software and hardware upgrades. Due to serving sparsely populated areas, rural-based providers are not able to spread capex and opex costs across a large customer base like nationwide providers. Rural carriers pay higher per-unit prices for access to the latest mobile devices because they are not offered volume-based discounts from original equipment manufacturers and distributors. Conversely, the Tier 1 nationwide providers are able to average the costs of their select rural sites with their numerous and more return-on-investment-friendly urban and suburban sites. Rural-based providers simply do not have this option, which creates a huge competitive retail pricing disadvantage.

Simply put, rural wireless carrier costs per subscriber are higher than those of nationwide and regional carriers. Yet, rural carriers must price their retail services in line with nationwide and regional carriers because rural consumers have come to expect to pay the same price for service as urban and suburban consumers. In order to price services for rural consumers on par with services for urban and suburban consumers, a high-cost support subsidy is needed. RWA again urges the Commission to reconsider its proposal, and at a minimum retain the \$500 million

⁵ *Connect America Fund, et al.*; Report and Order, Declaratory Ruling, Order, Memorandum Opinion and Order, Seventh Order on Reconsideration, and Further Notice of Proposed Rulemaking; WC Docket No. 10-90, *et al.*; [FCC 14-54](#), at ¶ 243 (rel. June 10, 2014) ("*FNPRM*").

⁶ See *Connect America Fund, Universal Service Reform – Mobility Fund*, [Comments of Rural Wireless Association, Inc.](#), WC Docket No. 10-90, WT Docket No. 10-208, p. 5 (August 8, 2014) ("*RWA Comments*"); see also *U.S. Cellular Ex Parte*, [Slide Presentation](#) at p. 18 (noting that "[s]izing the program first (e.g., \$400 M), without even estimating the annual cost of providing reasonably comparable access, contravenes Congressional directive to take meaningful action to close the divide.")

⁷ [Letter](#) to Marlene H. Dortch, Secretary, FCC, from David LaFuria, Counsel for United States Cellular Corporation, WT Docket No. 10-208, WC Docket No. 10-90 (May 31, 2016).

annual mobility support budget as originally proposed so that rural consumers receive mobile broadband services on par with urban and suburban consumers.

AN ALTERNATIVE MOBILITY SUPPORT MECHANISM IS NECESSARY.

Because the Commission has drawn heavily from Mobility Fund Phase I (“MFI”) for its proposed MFII framework, it should carefully consider what did and did not work in MFI.⁸ As Commission staff and MFI recipients are aware, aspects of the post-auction implementation of MFI – buildout verification, coverage reporting, and funding disbursements – have taken significantly longer, and have proven to be much more difficult, than expected. RWA agrees with U.S. Cellular that, rather than conduct another reverse auction, which proved to be an inefficient means of distributing support in Auction 901, the Commission should consider alternatives that increase targeted investment and leverage program funds, and seek comment on further alternative methods of distributing support.⁹

In particular, RWA believes that, while expansion of service is incredibly important, this expansion must not come at the expense of currently functioning networks that would not exist without high cost support. An alternative mobility fund proposal recommends dividing the MFII budget into two separate funds – one to support capital expenditures that would expand mobile broadband coverage to completely unserved areas, and another to support operational expenses of existing networks that provide coverage to high-cost areas.¹⁰ RWA supports further consideration of this alternative proposal, as well as the additional cost and coverage information submitted by U.S Cellular.¹¹

A situation in which rural wireless carriers currently operating towers using high-cost funding would have to turn off certain towers without continued funds – deemed the “Rusty Tower”

⁸ *Connect America Fund et al.*, WC Docket No. 10-90 *et al.*, [Report and Order and Further Notice of Proposed Rulemaking](#), 26 FCC Rcd 17663, ¶ 1136 (Nov. 18, 2011) (“*USF/ICC Transformation Order*”) (noting that the Commission planned to “take into account [its] experience implementing Mobility Fund Phase I” in making decisions regarding maximizing consumer benefits during the implementation of MFII).

⁹ *U.S. Cellular Ex Parte*, Slide Presentation at p. 21; *see also* [Letter](#) to Marlene H. Dortch, Secretary, FCC, from Grant B. Spellmeyer, Vice President – Federal Affairs & Public Policy for United States Cellular Corporation, WT Docket Nos. 10-208, 10-112, WC Docket No. 10-90, pp. 1-2 (April 18, 2016) (stating “concerns over using a reverse auction format like the one used in Auction 901 for Mobility Fund II,” and that a reverse auction “placed mountainous terrain at a distinct disadvantage over flat terrain to stand a reasonable chance of winning and the further difficulty of being able to accurately project the costs of deploying facilities in such geography in advance of submitting bids.”).

¹⁰ *See Ex Parte* [Letter](#) from Rebecca Murphy Thompson, General Counsel, CCA to Marlene H. Dortch, Secretary, FCC, WT Docket No. 10-208 (filed Nov. 16, 2015).

¹¹ *See U.S. Cellular Ex Parte*, “[Ongoing Support for Operations & Maintenance of Rural Mobile Networks](#)” (Feb. 22, 2016), “[Mobile Voice and Broadband Coverage: An Analysis of Sources, Measures and Reporting Methods](#)” (updated Feb. 22, 2016).

problem¹² – is not only possible, it is *probable*. RWA members and other small carriers operate wireless sites that, while important for public safety and area coverage, do not generate enough revenue to pay their own operating costs. While some contend that “[m]uch of this territory...is already covered by *multiple* 4G carriers,”¹³ the Commission’s current MFII proposal would eliminate funding in areas where there is *only one* nationwide 4G LTE carrier. Further, as discussed below, currently available data makes it very difficult to tell exactly where carriers actually provide service, and achieving universal voice coverage in an area currently requires service by both a CDMA and GSM carrier. For all of these reasons, a mechanism that maintains existing USF-supported infrastructure is necessary.

THE HALT OF PHASE-DOWN SUPPORT SHOULD BE MAINTAINED UNTIL 50 PERCENT OF AUTHORIZED MOBILITY FUND PHASE II FUNDS HAVE BEEN DISBURSED.

Section 254(b)(5) of the Communications Act of 1934, as amended, requires the Commission to ensure that it has in place “specific, predictable, and sufficient Federal... mechanisms to preserve and advance universal service.”¹⁴ Rural wireless carriers need predictability to formulate the business decisions that allow them to continue providing services or deploy new services to high-cost areas. When the Commission adopted its freeze and phase-down of legacy support in 2011, it anticipated this need for specific, predictable, and sufficient support when it adopted a stopgap measure to temporarily halt the phase-down at 60 percent of the baseline “[i]n the event that the implementation of Mobility Fund Phase II has not occurred by June 30, 2014.”¹⁵ Indeed, June 30, 2014 has passed and Mobility Fund Phase II is not yet implemented or operational.

As RWA has stated in past filings, the Commission should clarify that Mobility Fund Phase II is deemed to have been “implemented” and “operational” only after 50 percent of Phase II funds have been disbursed to carriers and without regard to whether a particular competitive ETC is a winning bidder or not.¹⁶ Disbursement of at least 50 percent of the Phase II funds will ensure that the phase-down of legacy support does not re-start until Phase II replacement support is realized

¹² *Commissioner O’Rielly Blog Post*.

¹³ *Id.* (emphasis added).

¹⁴ 47 U.S.C. § 254(b)(5).

¹⁵ 47 C.F.R. § 54.307(e)(5). *See also USF/ICC Transformation Order* at ¶ 519 (“If the Mobility Fund Phase II is not operational by June 30, 2014, we will halt the phase-down of support until it is operational”).

¹⁶ [Letter](#) to Chairman Tom Wheeler, FCC, from Caressa D. Bennet, General Counsel, Rural Wireless Association, Inc., WC Docket No. 10-90 *et al*, at p. 3 (April 14, 2014); *see also RWA Comments* at pp. 1-4; *see also Ensuring Intermodal USF Support for Rural America Before the S. Comm. on Commerce, Sci., and Transp. Subcomm. on Commc’ns, Tech., Innovation, and the Internet*, 114th Cong. (Feb. 4, 2016), [statement of Steven K. Berry](#), CEO & President of Competitive Carriers Association, at p. 8 (“reaffirming that there will be no further reductions in support absent an operational replacement mechanism helps to provide certainty while also encouraging the FCC to focus on creating a sufficient Mobility Fund Phase II.”) (*CCA Testimony*).

by winning bidders. Moreover, non-winning bidders will have had sufficient time to seek replacement funding and plan accordingly. The results of the Mobility Fund Phase II auction will have a lasting impact on the rural wireless landscape, and carriers will need time to adapt their business plans around the specific and predictable sources of available funds. A two-year phase out of current support is not sufficient.¹⁷ Only by halting the phase-down of legacy support until carriers have at least half of their Phase II funds in hand can the Commission ensure the continued provision of wireless services and deployment of new wireless services to high-cost areas.

A POPULATION-BASED METRIC ALONE DOES NOT SERVE THE PUBLIC INTEREST.

Mobility support should be used to sustain and deploy mobile broadband networks that provide coverage to devices and connections – not just people. RWA agrees with AT&T that “[r]ural areas deserve robust wireless networks capable of meeting the demand and capacity needs of populated rural areas as well as their roadways,”¹⁸ but *disagrees* that the best way to accomplish this is the use of a population-based metric. Population-based buildout requirements allow carriers to build their networks in a way that serves those in highly profitable population centers and leaves residents in outlying areas without service. With respect to many parts of rural America, nationwide providers often focus coverage only on towns with populations greater than 5,000 and major highways. At best, these carriers place sparsely populated areas at the very bottom of their network upgrade list. At worst, these areas have no coverage at all. Such a strategy may be acceptable to subscribers who are merely passing through a rural area, but it is not adequate for the rural Americans that live and work there.¹⁹

In addition to the population requirement’s impact on coverage, a population requirement is not an appropriate metric for today’s wireless industry. Many of America’s agriculture and energy producers are located in areas where there is no (or very little) population. They increasingly rely on mobile broadband connectivity to utilize machine-to-machine (M2M) and Internet of Things (IoT) devices.²⁰ A population metric fails to accurately account for areas where the need for mobile broadband is great – like agricultural, energy production, and tourism centers – but where there are no or few permanent residents. Reliable mobile coverage in such high-cost, rural areas is necessary to support economic development and public safety.

IoT devices and M2M communications include smart tractors, connected combines, remote-controlled Center Pivot Irrigation systems, livestock monitoring systems, and other precision

¹⁷ *Commissioner O’Rielly Blog Post.*

¹⁸ [Letter](#) from Mary L. Henze, AT&T, to Marlene Dortch, FCC, WT Docket No. 10-208 (July 8, 2016) (*AT&T Ex Parte*).

¹⁹ USF recipients use high-cost universal service funds specifically to provide service in areas with little population. As such, employing a solely population-based bidding unit or build out requirement is not appropriate and is counterintuitive.

²⁰ *See Senate Letter* at p. 1 (stating “Mobility is essential for new precision agriculture technologies to deliver productivity gains and environmental sustainability.”).

agricultural devices, all of which allow producers to make significant gains in real-time productivity and cost management. As stated by the Rural Senators, “Without the certainty that essential mobile broadband infrastructure will be deployed and maintained, investments in agricultural productivity will be delayed or bypassed altogether, and the potential efficiencies and benefits to rural communities will be lost. The extension of high-speed mobile and backhaul facilities to agricultural croplands and ranch lands must keep pace with the ongoing deployment of technology in the field. Increasing numbers of modems in the field means a growing demand for connectivity in the areas in which they operate.”²¹ RWA agrees with the Rural Senators that a geographic measurement is preferable to a population-based or road mile metric alone.²² However, not only is a geographic measurement preferable, it is *essential* if the Commission is going to meet its statutory obligations. Geographic coverage could be documented by using RF engineering scatter maps based on the Commission’s field strength standards.²³

THE UNRELIABILITY OF FCC FORM 477 DATA MUST BE ADDRESSED, AND THE COMMISSION SHOULD ADOPT A ROBUST CHALLENGE PROCESS.

RWA and other stakeholders have previously expressed concern that the Commission’s data and methodologies systematically overstate mobile broadband deployment, and that these results have led some to erroneously conclude that the job of deploying mobile broadband is largely done.²⁴ While the Eighteenth Mobile Competition Report stated that, as of January 2014, 99.9 percent of the total U.S. population lived in census blocks that were covered by at least one facilities-based mobile wireless provider,²⁵ it also stated that at least 22 percent of the U.S. land area receives absolutely *no* mobile wireless broadband coverage at all.²⁶ Further, according to the 2016 Broadband Progress Report, 87% of rural Americans lack access to mobile broadband at 10 Mbps/1 Mbps.²⁷

²¹ *Senate Letter* at pp. 1-2.

²² *Id.* at p. 2.

²³ *See infra* pp. 7-8.

²⁴ *See Letter* from Caressa D. Bennet, General Counsel, Rural Wireless Association, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 10-208 (Apr. 13, 2016); *see also U.S. Cellular Ex Parte* Slide presentation at p. 8.

²⁵ *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless, Including Commercial Mobile Services, Eighteenth Report*, WT Docket No. 15-125, Chart III.A.1 at p. 25 (rel. Dec. 23, 2015) (“*Eighteenth Report*”); *see also Commissioner O’Rielly Blog Post*.

²⁶ *Eighteenth Report* at Chart III.A.1 at p. 25.

²⁷ *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act*, GN Docket No. 15-191, [2016 Broadband Progress Report](#), FCC 16-6, ¶ 83, Table 4 (rel. Jan. 29, 2016).

The *Eighteenth Report* mentions many times that its analysis likely *overstates* the coverage experienced by consumers because of carrier-reported Mosaik data limitations.²⁸ Commission staff also notes that “coverage estimates based on Form 477 data are subject to similar methodological limitations...and consequently have the potential to overstate coverage.”²⁹ Form 477 data generally shows where carriers have reported that mobile wireless coverage is available, with the – often incorrect – assumption that the advertised speeds are available throughout an entire area at all times. As CCA has stated, “[w]hen the so-called ‘centroid’ of a census block has a particular level of service, the FCC counts each and every person in the census block as having that service, even when coverage is inconsistent or weakens over distance. In rural areas, where census blocks are geographically much larger and/or irregularly shaped than in urban areas, it is much more frequently the case that people are counted as having a high level of service, when in fact they have no service or are underserved.”³⁰

The more appropriate way to measure coverage would be to utilize propagation scatter maps that predict coverage based on sound RF engineering principles and build on RF signal strength formulas established by the FCC’s rules. For example, the FCC has sought to prevent interference by utilizing parallel field strength limitations for wireless services at market boundaries (*i.e.*, 40 dB μ V/m for low band spectrum³¹ and 47 dB μ V/m for high band spectrum³²). RWA proposes using field strength measurement to determine geographic coverage for purposes of determining if a census block is served.³³ If 25 percent or more of a census block’s geographic

²⁸ See, *e.g.*, *Eighteenth Report* at ¶ 34 (noting that “[i]f the center point...of a census block is within the coverage boundary of a Mosaik map, then [the Commission] consider[s] that block to be ‘covered’ by that provider and/or technology” and that the “coverage estimates...do not indicate the extent to which providers affirmatively offer service to residents in the covered areas.”); see also *id.* at Chart III.A.1, Chart III.A.2, Chart III.A.3, and Chart III.A.4 at pp. 25-29.

²⁹ *Eighteenth Report* at ¶ 35.

³⁰ *CCA Testimony* at p. 8. See also *U.S. Cellular Ex Parte*, Slide Presentation at p. 8 (stating “Coverage at a centroid point incorrectly assumes both coverage and speed threshold are met throughout the Census Block. Coverage data appears to depict homogenous speeds that do not accurately capture wide variances in throughput speed between cell tower and cell edge.”)

³¹ See 47 CFR §27.55 (stating that 40 dB μ V/m is the field strength limit for the 600 MHz, 698-758, and 775-787 MHz bands); see also 47 CFR §22.983 (stating that 40 dB μ V/m is the field strength limit for the Cellular band).

³² See 47 CFR § 24.236 (stating that 47 dB μ V/m is the field strength limit for Broadband PCS spectrum); see also 47 CFR § 27.55 stating that 47 dB μ V/m is the field strength limit for the 1995-2000 MHz, 2110-2155, 2155-2180, 2180-2200, 2305-2320, 2345-2360, paired 1392-1395 and 1432-1435 bands, and the unpaired 1390-1392 MHz bands.

³³ The FCC determined that 40 dB μ V/m is an appropriate field strength limit that allows a cellular licensee to transmit its signal up to its license boundary and still avoid interfering with the network coverage of the neighboring licensee. See *Amendment of Parts 1 and 22 of the Commission’s Rules with Regard to the Cellular Service, Including Changes in Licensing of Unserved Area, et al.*, [Report and Order and Further Notice of Proposed Rulemaking](#), WT Docket No. 12-40, RM Nos. 11510 and 11660, FCC 14-181, at ¶¶ 16-23 (rel. Nov. 10, 2014). The FCC noted that this field strength limit is comparable to the broadband PCS field strength

area is unserved or underserved utilizing the appropriate spectrum-based field strength measurement, the census block should be considered unserved. In cases where census blocks are geographically large (*e.g.* over 300 square miles), it is in the public interest to classify these blocks as eligible for support if 20 percent or more of the census block's geographic area is unserved or underserved. Such a standard would provide a more accurate account of the service actually provided in a census block. RWA recommends that the Commission adopt a 50/57 dB μ V/m signal strength, which equates to a -85 dBm, for purposes of determining whether an area is deemed covered for determining eligibility for Mobility Fund Phase II funding.

In response to parties' concerns that the centroid method is an ineffective measure to determine whether areas are unserved, the Commission has sought comment regarding alternatives such as the proportional method.³⁴ In particular, the Commission asked whether it should consider any census block unserved if the data indicates more than 50 percent of the areas is unserved.³⁵ As the Commission has stated, there has been significant commercial deployment of mobile broadband services since the *USF/ICC Transformation Order* was adopted.³⁶ Given these "marketplace developments,"³⁷ claims of nationwide service by the country's two largest carriers,³⁸ and the growing need for mobile broadband coverage *everywhere* (not just over population centers and major roads) prompted by industrial M2M and IoT applications,³⁹ a

limit, since the cellular service utilizes a lower frequency band. As cellular licensees may exceed this limit by agreement with a co-channel adjacent market licensee, scatter maps are typically used to illustrate predicted coverage at field strengths in excess of the Commission's limits. Such scatter maps would also provide a realistic representation of true service coverage. To have reliable service coverage, the Commission would need to adopt a signal strength in excess of the respective 40/47 dB μ V/m signal strength which equates to a -95 dBm. RWA recommends that the Commission adopt a 50/57 dB μ V/m signal strength, which equates to a -85 dBm, for purposes of determining whether an area is deemed covered for Mobility Fund Phase II.

³⁴ *Further Inquiry Into Issues Related To Mobility Fund Phase II*, [Public Notice](#), WC Docket No. 10-90, WT Docket No. 10-208, DA 12-1853, at ¶ 9 (Nov. 27, 2012) (*Further Inquiry*).

³⁵ *Id.*

³⁶ *FNPRM* at ¶ 238.

³⁷ *Id.* at ¶ 239.

³⁸ See Verizon Communications Inc., [Second Quarter Report](#) (Form 10-Q), at p. 29 (July 29, 2016) (noting that Verizon Wireless "provides voice and data services and equipment sales across the United States"); see also AT&T Inc., [Second Quarter Report](#) (Form 10-Q), at p. 10 (August 4, 2016) (noting that the company's Consumer Mobility segment "provides nationwide wireless service to consumers and wholesale and resale wireless subscribers located in the U.S. or in U.S. territories").

³⁹ See *e.g.*, *Senate Letter*; see also *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans In a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act*, [Comments of Deere & Company](#), GN Docket No. 15-191, at p. i (Sept. 15, 2015) (noting that "[t]here are a number of broadband use markets, such as agricultural operations, that are simply overlooked by the Commission's current broadband deployment policies. By reviewing those

coverage requirement wherein only 50 percent of a census block must actually be served in order for the entire census block to be considered served is too low a bar to set in rural America. As discussed above, RWA believes that a 20 or 25 percent unserved coverage marker (depending on the size of the census block) – rather than 50 percent – is appropriate in today's wireless market.

Once a coverage formula is adopted, any coverage/area eligibility issues should be addressed through a robust challenge process that provides all parties (not just those that are very large entities with nearly unlimited technological and personnel resources) sufficient time and opportunity to carefully review and provide input on areas determined to be both eligible and ineligible for support. In addition to relying on faulty analysis, Form 477 information is sometimes simply *incorrect*. The Wireline Competition Bureau has stated that “[t]he record...demonstrates that misinterpretation of the Form 477 filing instructions is not unusual; indeed, it appears that quite a few parties have failed to correctly file their Form 477 data.”⁴⁰ A robust challenge process is necessary because the work to deliver mobile broadband to rural America is not complete. The currently available data and centroid methodology ultimately results in many rural residents and visitors to rural areas being left without coverage, both at home and on some of the most dangerous roads and terrain in the country.⁴¹

GSM/CDMA INCOMPATIBILITY ISSUES WILL JEOPARDIZE PUBLIC SAFETY.

Due to the incompatibility of GSM and CDMA networks, the Commission's proposed rules fail to ensure the availability of mobile service in areas served solely by *either* AT&T or Verizon 4G LTE. AT&T's recent filing noted its “position that Mobility Fund Phase II funds should target areas that lack 4G LTE service offered by any mobile wireless provider and, to the extent possible, areas that already have 4G LTE service should not be eligible for Mobility Fund II support.”⁴² But, as both RWA and U.S. Cellular have stated in past filings, GSM/CDMA incompatibility raises public safety concerns and is an important issue in rural and remote areas.⁴³

areas of the economy that lack broadband access, rather than simply focusing on population-based coverage, Deere hopes that the Commission can start closing the broadband gap in rural and other underserved areas”); *see also* *Connect America Fund et al.*, [Notice of Ex Parte Presentation of Panhandle Telephone Cooperative, Inc.](#), WC Docket Nos. 10-90, 07-135, 05-337, 03-109, CC Docket Nos. 01-92, 96-45, GN Docket No. 09-51, WT Docket No. 10-208 (Dec. 17, 2014).

⁴⁰ *Connect America Fund*, [Order](#), WC Docket No. 10-90, DA 16-842, at ¶ 16 (July 25, 2016).

⁴¹ For instance, Montana's Highway 2 is considered one of the most dangerous roads in America. *See* Phil Berg, [10 of America's Most Dangerous Roads](#), *Popular Mechanics* (Aug. 9, 2013).

⁴² *AT&T Ex Parte* at p. 1 (emphasis in original).

⁴³ [Letter](#) from Anthony K. Veach, Sr. Regulatory Counsel and Erin P. Fitzgerald, Regulatory Counsel, Rural Wireless Association, Inc., to Marlene H. Dortch, Secretary, FCC, WT Docket No. 10-208, WC Docket No. 10-90 (Dec. 22, 2015); *see also* [Letter](#) from Erin P. Fitzgerald, Assistant Regulatory Counsel, Rural Wireless Association, Inc., to Marlene H. Dortch, Secretary, Federal Communications Commission, WT Docket No. 10-208, WC Docket No. 10-90 (Aug. 26, 2015); *see also* *U.S. Cellular Ex Parte*, Attachment at p. 17.

Alarming, the FCC's current MFII proposal will diminish access to emergency services because it would eliminate universal service support in areas where *either* AT&T *or* Verizon provides 4G LTE service as reported on FCC Form 477.⁴⁴ Despite the growing use of 4G LTE networks for mobile data services, the current incompatibility between CDMA and GSM networks due to band class differences and carriers' continuing need to rely on 3G or 2G networks for voice services (such that GSM-based smartphones cannot be used to make voice calls on a CDMA carrier's network and vice versa) will persist in the foreseeable future.⁴⁵ And the industry is years away from ubiquitous, interoperable VoLTE service.⁴⁶ AT&T and Verizon do not have an interoperable LTE roaming agreement in place for data services, much less an interoperable VoLTE roaming agreement for voice.⁴⁷ Given the fact that they do not exactly duplicate each other's network coverage, it is short sighted and disservices the public for the FCC

⁴⁴ *FNPRM* at ¶ 241 (proposing to “identify areas eligible for support, i.e., areas where neither Verizon nor AT&T provide 4G LTE...”).

⁴⁵ See, e.g., Fitchard, Kevin, “[Verizon Starts Killing Off 3G Networks To Make Room For LTE](#),” Gigaom (December 3, 2014) (“About 80 percent of Verizon’s mobile data traffic now rides over LTE, but some 40 million (41 percent) of the total devices on Verizon’s networks only have 2G and 3G radios. That means for the foreseeable future, Verizon will have to keep a modicum of EV-DO capacity online at every cell site to support those devices...As for 2G, it will be around even longer than 3G since it’s still Verizon’s primary voice network, but eventually Verizon will begin [sic] the bulk of its voice traffic onto its new voice-over-LTE service”).

⁴⁶ See Bill Welch, Senior Product Manager, Sonus, RCRWireless News Webinar, [VoLTE Reality Check – How Long Will your Legacy Network Need to Live?](#) (Oct. 15, 2015) (noting that Voice over LTE (VoLTE) has the fastest technology adoption of all wireless technologies, yet only 28% of wireless subscribers are expected to be using VoLTE by 2020). It is important to differentiate LTE from VoLTE service. While many small and rural carriers have upgraded to LTE, VoLTE implementation will take years. Nationwide carriers drive industry-wide technology adoption – like VoLTE. Verizon will shut down its 2G CDMA 1X network by the end of 2019, and AT&T has previously announced plans to shut down its 2G network by 2017. See Mike Dano, [Verizon to Shut Down 2G CDMA 1X Network by the End of 2019](#), FierceWireless (July 13, 2016); see also AT&T, Frequently Asked Questions Regarding 2G Sunset, available at https://www.business.att.com/content/other/2G-Sunset-FAQ_2016.pdf (last visited August 21, 2016). Preserving/expanding universal voice service and 911 access should be a Commission priority. Rural carriers’ networks must be VoLTE compatible or customers will not be able to use their phones outside of their home area. There is no way for rural carriers to overlay their existing CDMA/GSM networks and implement VoLTE without universal service support.

⁴⁷ Dan Meyer, [Verizon Signs VoLTE Roaming Deal With KDDI](#), RCR Wireless News (June 7, 2016) (stating “Verizon Wireless customers may still lack formal nationwide voice-over-LTE roaming...Domestic roaming remains murky as carriers have only publicly announced limited capabilities, despite three of the market’s four nationwide operators claiming network-wide service...VoLTE users encounter three to four times as many dropped calls as they experience on legacy voice systems.”)

to think that Mobility Fund Phase II support should not be available to a rural carrier when there is already one national LTE carrier in a rural area.

In situations where only AT&T or Verizon 4G LTE service is available, a USF-supported carrier may be the only mobile wireless provider serving customers using “the missing” network. For example, in an area where Verizon provides 4G LTE service, a USF-supported carrier may be the only mobile wireless provider serving GSM customers throughout that entire area (including customers roaming on AT&T or T-Mobile). Without that USF-supported network, those GSM customers would be “left in the dark” because they would be unable to connect to Verizon’s CDMA network for voice calls.⁴⁸

This is a serious issue because 25 percent of America’s road miles and 50 percent of its square miles lack coverage by both GSM and CDMA networks.⁴⁹ Denying mobility support to supported carriers where either AT&T or Verizon provides 4G LTE service will harm the public interest, particularly with respect to public safety, by jeopardizing the availability of voice and 911 services. Ongoing high cost universal service support for the provision of mobile wireless service is necessary to ensure continued voice and 911 emergency call capabilities. Eliminating mobility support as proposed could leave half of an area’s consumers without voice service – including access to 911, police, fire departments, and other public safety resources. This is an unacceptable result.

IMPLEMENTATION OF MOBILITY FUND PHASE II AS PROPOSED WILL COMPOUND THE NEGATIVE IMPACT ON MOBILE BROADBAND COMPETITION CAUSED BY RURAL WIRELESS CARRIERS’ LIMITED ABILITY TO ENTER INTO BILATERAL DATA ROAMING AGREEMENTS.

AT&T expresses its opinion that “Mobility Fund Phase II funds should target areas that lack 4G LTE service offered by any mobile wireless provider and, to the extent possible, areas that already have 4G LTE service should not be eligible for Mobility Fund II support.”⁵⁰ The idea of not subsidizing competition seems innocuous enough, but what gets lost in translation is that the nation’s largest carriers oppose Mobility Fund funding in areas where 4G LTE is reported on FCC Form 477 *and* oppose any real efforts to ensure access to commercially reasonable data roaming, thereby hampering competition.

RWA agrees with Sprint that the nation’s largest carriers fail to acknowledge the role high-cost universal service policies have played in both supporting network buildout and in guarding

⁴⁸ *U.S. Cellular Ex Parte*, Slide Presentation at p. 17 (noting “[a] person with a CDMA-only phone cannot complete a call when they are in an area served only by GSM, and vice-versa. As a result, the current reality in rural areas is a patchwork quilt of coverage by incompatible technologies, frustrating the goal of seamless access. For public safety, it is critical that rural Americans have access to wireless networks capable of connecting both kinds of devices, just as those who live in cities do.”)

⁴⁹ *Id.*; see also *Eighteenth Report* at p. 28, Chart III.A.3.

⁵⁰ *AT&T Ex Parte* at p. 1.

against competitive overbuild.⁵¹ In a 2015 *ex parte*, Verizon argued that the Commission’s mobility fund programs are available for Sprint (and presumably others) to build out its network, rather than rely on roaming.⁵² As Sprint stated, “Verizon, however, knows that Mobility Fund Phase I funds were not available in areas already served with 3G or better wireless service. Verizon itself successfully advocated for this restriction for the Mobility Fund Phase I and for the forthcoming Mobility Fund Phase II stating that the purpose of USF funds is to expand coverage rather than subsidizing competitors in already served areas.”⁵³

American consumers have come to expect nationwide coverage without added retail roaming rates, and small and regional providers cannot provide facilities-based nationwide coverage if their respective spectrum holdings are limited to local or regional markets. Nonetheless, the nation’s largest carriers often refuse to enter into bilateral voice and data roaming agreements under commercially reasonable rates, terms and conditions. Furthermore, these same carriers often refrain from offering their own subscribers access to rural roaming coverage on small carrier networks (including those operated by RWA members) even when their own coverage is inferior or non-existent.⁵⁴ These rural carrier networks, built with the help of universal service funds, should be made available to the American public in areas that are unserved or underserved by nationwide networks.

⁵¹ [Letter](#) from Charles W. McKee, Vice President, Government Affairs, Federal & State Regulatory, Sprint, to Marlene H. Dortch, Secretary, FCC, *Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers and Other Providers of Mobile Data Services*, WT Docket No. 05-265, at p. 5 (Nov. 4, 2015) (*Sprint Ex Parte*).

⁵² [Letter](#) from Tamara Preiss, Vice President, Federal Regulatory Affairs, Verizon, to Marlene H. Dortch, Secretary, FCC, *Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers and Other Providers of Mobile Data Services*, WT Docket No. 05-265, at p. 2 (Aug. 17, 2015).

⁵³ *Sprint Ex Parte*, at p. 5. In fact, nationwide carriers and their subscribers benefit from universal service funds in ways that are not easily quantified. For example, many rural carriers have strategic alliances with Verizon wherein they utilize Verizon spectrum and vendor agreements. These carriers have used USF dollars to purchase the RAN equipment and backhaul and build the towers necessary to provide wireless service in rural markets for their own *and Verizon’s* subscribers. In this way, the Verizon LTE in Rural America (LRA) program has allowed Verizon to indirectly leverage USF dollars. See Phil Goldstein, [Verizon: All 21 LTE in Rural America Carrier Partners Have Launched Service](#) (Oct. 15, 2015) (stating that “LRA members lease Verizon’s 700 MHz Upper C Block spectrum. They then build out their own networks and sell service to their own customers, but have access to Verizon’s network vendors, LTE device portfolio and their subscribers can roam onto Verizon’s nationwide LTE network and the networks of other LRA partners... The program also allows Verizon to quickly and *cheaply* build out rural areas.”) (emphasis added).

⁵⁴ See *Improving Resiliency, Reliability and Continuity of Mobile Wireless Communications Networks*, [Comments of the Rural Wireless Association, Inc. and NTCA – The Rural Broadband Association](#), PS Docket Nos. 13-239 and 11-60, pp. 3-8 (May 31, 2016); see also *U.S. Cellular Ex Parte*, Slide Presentation at p. 14 (noting that “Roaming is no longer a stable revenue source.”)

This financially-motivated decision by the nation’s largest carriers might simply be annoying to their subscribers in most cases. Yet, this decision threatens public safety in the event of a natural disaster or emergency that causes debilitating damage to the large carrier’s network. In such an emergency, an untold number of mobile users (including front-line public safety users) may be unable to communicate in the affected area. In addition to posing public safety concerns, the lack of bilateral roaming eliminates a source of non-federal revenue that small rural providers could use to offset network costs. This, in turn, renders them more reliant on both state and federal universal service support.

CONCLUSION.

The Commission’s proposal to provide support only in areas where neither Verizon nor AT&T provides 4G LTE⁵⁵ *limits* competition in high-cost areas by its very terms. This is a far cry from other proceedings, such as the 600 MHz Incentive Auction, where the drumbeat of “competition, competition, competition” and its importance to consumers informed Commission action. Given limited USF resources, the Commission’s desire to avoid subsidizing competition is understandable. But, as it develops a structure to provide support for universal mobile broadband service, RWA urges the Commission to seriously consider the interrelated nature of competition, universal service funding, the need for accurate coverage data, the need for functional bilateral roaming agreements at commercially reasonable rates, and public safety. Actions taken (or not taken) on one issue will impact each of the others, particularly in rural areas where there are fewer service options. RWA thanks the Commission for its efforts in this proceeding thus far, and stands ready to work with Commission staff as this process moves forward.

Pursuant to Section 1.1206 of the FCC’s Rules, 47 C.F.R. § 1.1206, this *ex parte* is being filed electronically with the Office of the Secretary.

Respectfully submitted,

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⁵⁵ *FNPRM* at ¶ 241.