Before the
Federal Communications Commission
Washington, D.C. 20554

In re	)
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#Solutions2020 Call to Action Plan	)
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COMMENTS OF UNITED STATES CELLULAR CORPORATION

United States Cellular Corporation ("U.S. Cellular") is pleased to provide comment in response to the Commission's Public Notice (released Dec. 19, 2016) announcing the release of Commissioner Clyburn's #Solutions2020 Call to Action Plan.[1]

I. Introduction.

U.S. Cellular provides mobile wireless voice and broadband service in nearly 200 markets across 24 states located in regional clusters across the country. The overwhelming majority of the geography served by U.S. Cellular is in rural America. Accordingly, when it comes to improving the quality of mobile broadband in rural America, U.S. Cellular agrees with Commissioner Clyburn's opening remarks at the #Solutions 2020 Policy Forum, "what we need is less talk, and more action."[2]

It is now firmly established that mobile broadband is a transformative technology, driving economic development, increasing public safety, improving health care, and expanding educational opportunities. Roughly 88% of wireless subscribers use a smart phone device, one

[1] See, http://transition.fcc.gov/Daily_Releases/Daily_Business/2016/db1219/DOC-342689A1.pdf.

[2] See, https://www.fcc.gov/news-events/events/2016/10/commissioner-clyburn%E2%80%99s-solutions2020-policy-forum.

of the most powerful economic development tools available to our citizens. Undergirding the Commission's goals of making mobile broadband service affordable and ensuring that every citizen has an opportunity to adopt broadband in their lives, is infrastructure. Put simply, mobile broadband affordability and adoption only happen in areas where there is access.

U.S. Cellular focuses these comments on the Commission's Mobility Fund Phase II, which is critical to increasing access to mobile broadband in rural America, as well as laying the foundation for the coming 5G upgrade cycle. U.S. Cellular believes that the quality of FCC Form 477 data should be improved before support is disbursed, to ensure that public funds for mobile broadband are accurately targeted. Moreover, the number of road miles needing investment and the cost of providing high-quality coverage suggest, even using conservative estimates, that the Mobility Fund budget must be increased in order to provide rural America with reasonably comparable services, as set forth in Section 254 (b)(3) of the Act.

II. In Order to Successfully Deploy Mobile Broadband Support, The Commission Must Have an Accurate Picture of Mobile Broadband Availability.

While the Commission has made significant progress toward implementing its Mobility Fund Phase II, there remain significant problems with underlying deployment data that, if not corrected, will prevent many areas of the country from receiving high quality mobile wireless services. Specifically, FCC Form 477 data released in September of 2016 contains inconsistent mapping information because the Commission did not require a standardized reporting methodology. It appears that some carriers to have submitted data that produces relatively conservative levels of coverage, while others have submitted data that produces coverage at levels well beyond where a rural consumer could expect to initiate a high-quality data session.

In connection with its review of the 477 data, U.S. Cellular submitted drive test studies conducted by CostQuest Associates demonstrating significant disparities between Form 477 coverage and what a consumer actually experiences using a mobile device.[3] CostQuest's drive test project led to the following observations:[4]

- Network reliability differs a great deal inside and outside of Census Designated Places (cities and towns).
- Network reliability across road classifications differs a great deal.
- Throughput speeds are generally much lower in areas with lower population density.
- **The FCC's Form 477 data on mobile network availability, while helpful when trying to understand general presence of mobile providers, does not accurately represent customer experience with respect to access and use of networks.** Many areas that are shown as served by mobile providers in the 477 data are either completely unserved or served at speeds below what would be reasonably considered as broadband (4Mbps down) (emphasis in original).

As the new Commission prepares to invest Mobility Fund Phase II support, its first order of business should be improving the Form 477 process to ensure that it has accurately identified areas that have poor mobile broadband coverage. The dramatic differences in map resolution among various Form 477 submissions is well illustrated in the Competitive Carriers Association's October 25, 2016 *ex parte* presentation.[5] Overstatement of coverage in Form 477 data is particularly harmful to rural consumers living in areas with poor quality service, because it prevents additional investment with universal service support, perhaps forever.

[3] See, https://www.fcc.gov/ecfs/filing/10280176023122/document/102801760231222864.

[4] See, CostQuest Associates, South Carolina Mobile Broadband Performance Survey, (October 25, 2016), at https://ecfsapi.fcc.gov/file/10280176023122/2016%201027%20SC%20Benchmarking%20Overview_CQA.pdf at p. 8.

[5] See, https://ecfsapi.fcc.gov/file/10250110228195/CCA%20et%20al.%20Ex%20Parte%2010.25.16.pdf.

At the heart of solving this problem is developing consistent standards for submitting FCC Form 477 data. U.S. Cellular fully realizes that improving 477 data may prove to be a contentious process, as carriers have competing viewpoints on how coverage should be presented. That said, the status quo, in which widely divergent depictions of coverage are present in the Form 477 data base, is counter-productive and cannot continue.[6] If the Commission is unable to adopt a consistent methodology to improve the 477 data collection process, then it must explore alternative means of gathering better data about the state of wireless deployment in rural America. While U.S. Cellular believes that adopting standardized reporting metrics within the 477 data process would be the most cost effective means of improving Form 477 data, in the absence of changes to that process, the Commission should seriously consider gathering drive test data from whatever sources are available. It would be wise for the Commission to seek comment on what novel approaches might exist to gather deployment data if the 477 process changes recommended by U.S. Cellular cannot be accommodated.

In sum, the Commission is embarking on an investment of billions of dollars of public funds. It has an obligation to ensure that investments are made in areas that will deliver the biggest benefit for rural America. The Commission should not hold a reverse auction without confidence that public funds will be properly invested efficiently and effectively to drive the

[6] U.S. Cellular has previously suggested that the Commission open a separate proceeding, focused exclusively on addressing and resolving mobile broadband data problems. See, Reply Comments of U.S. Cellular in GN Docket No. 16-245, at p. 14: https://ecfsapi.fcc.gov/file/10921077546010/2016%200921%20(2)%20USCC%20Reply%20-%20Twelfth%20Broadband%20Progress%20NOI%20-%20FINAL%20AS%20FILED.pdf.

many benefits of mobile broadband to the greatest number of people and the largest possible area.

III. After Getting Accurate Data, The Commission Must Necessarily Revisit the Mobility Fund Budget.

To date, the Mobility Fund budget has been largely driven by ad hoc negotiations among the FCC and various industry groups. The FCC has never properly estimated the cost of providing mobile broadband service to rural America that is reasonably comparable to that which is available in urban areas, a core universal service goal.[7] Two critical questions have never been fully addressed: First, how much would it cost to fulfill the goal of Section 254(b)(3), to provide reasonably comparable services to rural America? Second, how long does the FCC wish to take to finish the job?

With respect to the first question, once the FCC gathers accurate coverage data as discussed above, it must revisit the issue of the size of the Mobility Fund. We strongly believe that more accurate data will show a large job awaits the FCC. For instance, even using the most recent FCC Form 477 data, which U.S. Cellular believes significantly underestimates the amount of work to be done in order to provide high-quality 4G LTE service in rural America, one can conclude that a budget of roughly $500 million per year is inadequate, by a large margin. In his blog post accompanying the release of new FCC Form 477 data, Wireless Telecommunications Bureau Chief Jon Wilkins noted that the FCC's data show that there are, "approximately 470,000 square miles, and 550,000 miles of road in the U.S. do not have 4G LTE coverage."[8]

[7] See, 47 U.S.C. §254(b)(3).

[8] See, Jon Wilkins, Mobility Fund II: Improving the Data We Use to Identify & Close Mobile Coverage Gaps, at https://www.fcc.gov/news-events/blog/2016/09/30/mobility-fund-ii-improving-data-we-use-identify-close-mobile-coverage.

Using the FCC's very conservative assessment that there are 550,000 miles to be covered, the cost of building out rural America can be estimated using Auction 901 data, where bids for the Lower 48 topped out at approximately $40,000 per road mile.[9] Even if the next 550,000 road miles cost an average of $40,000 per road mile (another very conservative assumption), it will cost an estimated $22 billion to cover rural America with 4G LTE (550,000 x $40,000 = $22,000,000,000).

The second question, "how quickly does the FCC intend to complete the 4G LTE build out?" drives the budget. If the answer is that the last 550,000 miles should be served in twenty years, then a $500 million annual budget is the correct number. U.S. Cellular suggests that there should be a greater sense of urgency attached to delivering mobile broadband to rural America. Even if the FCC commits to a $1 billion-dollar budget, and decides to fund only half the unserved road miles, this results in a 5.5 year universal service commitment for 4G LTE, and an undetermined amount following that for 5G deployment.

The point here is to highlight that the Commission has not permitted the size of the Mobility Fund to be driven by the needs of rural Americans. It is now time to rethink this, and reconsider prior FCC decisions that fail to confront the questions of how much it will cost to fulfill Congress's goal, and how fast does the Commission wish to complete the task.

[9] See, https://auctionbidding.fcc.gov/auction/index.htm?CFID=7296886&CFTOKEN=55913190&jsessionid=LWvTYx0Kw2tfvLFpdhVFYxJRCbl4rb1Lmn8v41Kr2zlJfzLH061w!760746405!-1769997722!1483814026027.

IV. Conclusion.

Commissioner Clyburn's #Solutions2020 outreach is exactly what the agency needs – a concerted effort to develop real solutions to some of the most important telecommunications problems facing our citizens. U.S. Cellular continues to believe that rural Americans want and deserve mobile broadband infrastructure every bit as much as urban and suburban citizens, and that a robust Mobility Fund is the best and most efficient way to deliver it.

Respectfully submitted,

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