Testimony of
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Subcommittee on Communications, Technology, Innovation, and the Internet

regarding

"The Universal Service Fund and Rural Broadband Investment"

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Good morning Chairman Wicker and Ranking Member Schatz. Thank you for holding this hearing, and thank you for the invitation to appear before you this morning to offer testimony on The Universal Service Fund and Rural Broadband. My name is Eric Graham, and I am the Senior Vice President for Strategic Relations for Cellular South, Inc., the provider of C Spire Wireless services ("C Spire"). We are the largest privately-held wireless provider in the United States with an operating area that primarily consists of Mississippi, but also includes portions of southwest Tennessee (including the Memphis area), as well as coastal Alabama (including the Mobile area). Our company also provides both fiber to the home and enterprise broadband at Gigabit speeds, but the primary focus of my comments today will be wireless broadband, both mobile and fixed.

The network that C Spire has constructed is an example of everything that can go right with a federally supported infrastructure program when a local company has the commitment to provide the latest technology to the people in its region. For over fifteen years, our company has

participated in the Universal Service Fund's High Cost program and we have used that support to help in building a wireless network in Mississippi that covers virtually the entire geography of the state. We continue to upgrade the wireless network with the latest generation of technology so that Mississippians from Tunica in the northwest to Gautier in the southeast, have access to the same techno logy as people in Jackson and Tupelo. For that matter, we ensure that people in Jackson and Tupelo have access to the same technology as people in New York, San Francisco, and Washington, D.C.

A. Background on C Spire and Wireless Expansion

Why do we do it? Quite simply, it's in our DNA to provide telecommunications services to hard-to-reach areas of Mississippi. Our company traces its roots to a pair of rural independent telephone companies, the first of which our owners began operating in 1959. In that time, in rural Mississippi, telephone service wasn't available everywhere. The Bell incumbent served the easy-to-reach areas, and people living outside those areas had no access unless an independent telephone company stepped in to serve the area. In one of the areas served by our rural independent telephone companies, two sisters lived within sight of each other's houses, but they were separated by a river. Although they could see each other from a distance, they had no real way to communicate until our company laid the telephone lines that allowed them to call each other. It was an expensive effort, and it would have been far more convenient not to provide telephone service to one or both of those ladies, but our belief then – and our belief today – is that people in rural and hard-to-serve areas need connectivity and access to modern technology just as much as those who live in densely-populated, easy-to-serve areas of our country.

Congress believed the same thing in 1996 when it passed the Telecommunications Act. Recognizing that competition results in better service, the Senate and the House constructed a new Universal Service support mechanism that promoted competition for the first time and moved rural consumers away from telecommunications monopolies. The FCC adopted rules to implement the 1996 Act, ensuring that wireless providers could qualify for Universal Service funding on a competitively neutral basis. The result was tremendous expansion of wireless networks across the country, including areas where independent providers such as C Spire now had the missing piece of the financial model that made it feasible to build wireless networks in rural areas.

B. Problems with the USF Structure

1. Distribution Problem

There were two important flaws in the USF structure. The first flaw was in the way that support was distributed to carriers. Under the distribution mechanism, the reimbursement amounts were based on the local landline carrier's average cost to serve a customer. This was a simple exercise of dividing allowable expenses by the number of a landline company's subscribers in its service area, and providing an equal "per customer" amount of monthly support to the competitive provider that won the customer.

As wireless networks expanded, cord-cutting became a practical option and there was a dramatic decline in the number of landline customers. However, the landline companies never lost USF support despite losing almost half of their lines over the past 10-15 years. The result was that the competitive carrier (almost always a wireless provider) received USF support to provide service to the customers it won, while at the same time the landline carrier continued to

receive support for the customers it lost. This was a problem in 2009 when I testified before the House of Representatives on the topic of USF, and it remains a problem today.

2. Contribution Problem

The second flaw in the USF structure is that contributions are based on a percentage of interstate and international telecommunications (long distance) revenues. Today, a small percentage of basic telephone service is interstate or international and that revenue base is shrinking rapidly as consumers now use Internet-based services to communicate. As interstate/international telecommunications revenues continue to decline, the FCC must increase the percentage assessed on the remaining revenue base, because it has no authority to assess intrastate telecommunications service revenues, or on any other service that is not telecommunications (such as information services).

Accordingly, while the size of the federal Universal Service Fund has not increased significantly over the past seventeen (17) years, the percentage of interstate/international revenues that consumers pay in (the "Contribution Factor") has risen from about four percent (4%) to nearly twenty percent (20%).[1] Over the years, some mischaracterized growth in the Contribution Factor as evidence of a USF crisis, when in fact it is not. Reforming the contribution mechanism has been on the FCC's radar for over fifteen (15) years, and the Federal-State Joint Board on Universal Service has recommended multiple solutions that have never been implemented.[2] In today's world, where many connected devices use alternative means of

[1] *See,* http://www.usac.org/cont/tools/contribution-factors.aspx

[2] Over the years, the Joint Board has addressed contribution reforms on multiple occasions. Most recently, in August of 2014, the FCC requested the Joint Board to make recommendations, but they have yet to act. See, https://apps.fcc.gov/edocs_public/attachmatch/FCC-14-116A1.pdf, at n.5.

communicating that do not use the public switched telephone network, and incur little or no interstate/international telecommunications charges the contribution mechanism is hopelessly outdated.

C. Compounding the USF Problems

As shown above, rather than fix the way that Universal Service funds are collected, the FCC has ignored the problem. Its actions to date on distribution reform have protected certain classes of providers and short-changed mobile wireless networks that rural citizens desperately want and need.[3] Today, wireless consumers contribute over half of the $8+ billion dollar annual USF budget, which covers schools and libraries, rural health care, Lifeline, and High Cost (Connect America Fund and Mobility Fund), yet annual High Cost support going to mobile broadband is approximately $600 million (only 7.5% of all USF support) and is scheduled to be cut back to only $453 million (less than 6% of all USF support) when Mobility Fund II is implemented.

Recently, CostQuest estimated the cost of building out a high-quality mobile broadband network throughout the unserved/underserved areas in rural America to be approximately $25 billion, with another $1 billion of support needed for annual operating costs.[4] And these figures don't even touch the coming 5G revolution. Does an annual budget of $453 million sound like the FCC has a sense of urgency to help build out modern 4G LTE networks in rural America?

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[3] *See, One Nation, Divisible | Rural America is Stranded in the Dial-Up Age*, J. Levitz & V. Bauerlein, WSJ (June 15, 2017: https://www.wsj.com/articles/rural-america-is-stranded-in-the-dial-up-age-1497535841

[4] *See,* https://ecfsapi.fcc.gov/file/10217086509033/2017%200216%20CQ%20Cost%20Study%20for%20Unserved%20Areas%20FINAL.pdf.

At that pace, it will take more than twenty years to get the job done, and even then, rural America will be further behind than it is today.

Providers like C Spire, and many other small independent carriers who participated in the Universal Service program in the early years, used that support to expand and maintain their networks and were able to compete aggressively for customers in areas where networks improved. But starting in 2008, the federal USF mechanism was capped, artificially preventing prevented many carriers from constructing comprehensive networks. That lack of coverage continues today in many of your states, and the FCC is proceeding down a path that will make the problem worse. In fact, history is about to repeat itself, as the new Universal Service mechanisms for broadband have two structural flaws of their own.

D. Flaws in Current USF Reform Plans

1. Lack of Accurate Data to Direct New Network Construction

First, the Commission is preparing to distribute funding without an accurate view of where support is needed. This will be the second time in the past five (5) years that the FCC has done this. The Commission intends to base funding decisions for Mobility Fund Phase II on data submitted by wireless providers across the country purporting to show where broadband exists or is lacking. This sounds reasonable on its face, but if you scratch slightly below the surface, you find that the FCC never established a consistent standard for how wireless carriers provide coverage information. This is a serious problem. Some providers submitted data showing coverage that an engineer would guarantee at all times and under all conditions, while others submitted data that would make a marketing department blush. To be clear, these differences are not necessarily malicious. Theoretical coverage, outdoors, in a low-foliage, flat landscape will

always appear greater than real-world, indoor coverage in rolling terrain. While both coverage simulations have legitimate purposes, the problem is the FCC permitted providers to submit data using factors the providers chose, and the resulting maps show either accurate, overstated, or understated coverage, depending upon how each carrier presented their respective mapping data.

Members of this Committee have taken note and have pushed the FCC to take corrective action. Mr. Chairman, you and Senator Manchin recognized this problem in a letter to FCC Chairman Ajit Pai in April of this year, where you wrote:

> *…the Commission's efforts [to promote broadband deployment in unserved and underserved areas] must accurately target every area that is in need of support so that no one is left behind. Residents, first responders, businesses, public institutions, and travelers in rural areas need reliable mobile broadband access. To that end, collecting and using reliable, standardized coverage data are critical steps toward ensuring consumers in the most rural and remote communities have access to the comparable services that Congress mandated for Universal Service.*[5]

It is also clear that this Committee understands what is needed to correct this problem because you, Mr. Chairman, Ranking Member Schatz and Senators Manchin, Fischer, and Moran introduced legislation in May of this year to help solve the data problem facing the FCC.[6] That bill, the *Rural Wireless Access Act of 2017*, directs the FCC to establish a methodology to (1) ensure that wireless coverage data is collected in a consistent and robust way; (2) improve the

[5] *See,* April 12, 2017 Letter to FCC Chairman: https://www.wicker.senate.gov/public/_cache/files/d2d30dd8-76f2-4c45-8d3a-b64c9018265c/041217-fcc-rural-broadband-auctions-task-force-letter.pdf

[6] See, S.1104, 115th Congress, introduced May 11, 2017: https://www.congress.gov/115/bills/s1104/BILLS-115s1104is.pdf

validity and reliability of wireless coverage data; and (3) increase the efficiency of wireless coverage data collection. In introducing the bill, Senator Schatz put the need for its passage succinctly: "We can't close the digital divide if we don't know where the problem is."[7]

Additionally, just last Thursday, Senators Heller and Machin introduced the *Rural Broadband Deployment Streamlining Act*.[8] This legislation, as Senator Manchin noted upon its introduction, "includes an assessment of whether the data in the National Broadband Map accurately reflects the broadband coverage currently available to rural consumers and . . . is a critical step towards ensuring that the infrastructure necessary for broadband coverage in unserved and underserved communities is more quickly deployed."[9]

We are grateful for these efforts to correct this known problem, and we are hopeful that the FCC will recognize your concerns and amend its plan accordingly, but we believe it will take your active participation in this issue and vigilant oversight in order for the FCC to get it right.

To the FCC's credit, the Commission opened a proceeding this spring seeking comments on how to get more accurate data before the upcoming Mobility Fund II auction. C Spire participated in stakeholders' workshops to develop a set of standards that work for the industry and that could be adopted by the FCC in their entirety, or with minimal changes. The working group submitted its suggestions to the Commission last month, but we have no indication those recommendations will be adopted. At this point, it is unclear whether the Commission is

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[7] May 11, 2017, Press Release, "Manchin Introduces Bipartisan Bill to Expand Broadband Deployment Using Accurate Coverage Maps": https://www.manchin.senate.gov/public/index.cfm/2017/5/manchin-introduces-bipartisan-bill-to-expand-broadband-deployment-using-accurate-coverage-maps. We note that Congressman Dave Loebsack of Iowa has introduced similar legislation (H.R. 1546) aimed at improving the quality of mobile broadband coverage data. *See*, H.B. 1546: https://www.congress.gov/bill/115th-congress/house-bill/1546/text.

[9] June 15, 2017, Press Release, "Heller, Manchin Introduce Bill to Expand Access to Rural Broadband": https://www.manchin.senate.gov/public/index.cfm/press-releases?ContentRecord_id=A3E25E12-1A27-47B9-B1E5-BB9B93738916

prepared to make the hard but necessary decision to require all carriers to submit improved coverage data based on a consistent standard.

As part of this Committee's oversight responsibility, we urge you to see that the FCC does not spend $4.6 billion dollars until it has a clear picture of which areas will deliver the biggest bang for the buck for all Americans.

2. The FCC's Current Reform Plan Will Reduce Existing Coverage

The Commission's current plan to proceed with its overhaul of the Universal Service Fund is fatally flawed because it eliminates operating support for the very networks that the Universal Service Fund helped to construct. This could have the perverse effect of forcing carriers to decommission cell sites over the next year that were constructed with Universal Service Support as recently as last year, thus reducing coverage and leaving towers to rust. This "rusty tower" scenario is very real because the whole purpose of the High Cost mechanism was to help wireless operators across the country construct and operate towers in areas that cannot justify the expense of continuing operations without support. Indeed, ensuring that networks in rural high-cost areas are maintained is one of the core purposes that Congress set forth in Section 254(e) of the Communications Act, 47 U.S.C. §254(e). Consumers with dependable wireless broadband today could find themselves on the wrong side of the digital divide tomorrow, unable to access services they currently use for everything from social connectivity and directions to telehealth services and reaching first responders in times of emergency. Mr. Chairman, this result is exactly the opposite of the goals that you, Senator Manchin and twenty-eight (28) of your

Senate colleagues set forth in a February letter to Chairman Pai.[10] In that February letter, nearly one-third of the Senate – both Republicans and Democrats – provided this guidance to the FCC:

> *As you move forward with MFII, we ask that your efforts help to incent wireless carriers to preserve, upgrade, and expand mobile broadband in rural America, rather than degrade and reduce competition in areas that need it most. Competing in a capital-intensive environment, wireless carriers need long-term certainty of ongoing support to invest, deploy maintain and update their networks that provide vital mobile broadband services in rural areas.*[11]

The combination of these two flaws in the new Universal Service mechanism - the failure to gather accurate, standardized data and the failure to protect the Universal Services Fund's decades of existing investment in rural areas - is a recipe for tremendous waste as funding will be directed to areas that do not require it while portions of existing networks will be turned off and cell towers will be abandoned. At this point, it will take leadership from the Senate and the House to ensure that the Universal Service Fund promotes broadband deployment in a way that preserves and expands network availability in rural areas.

F. Effect if FCC Stays on Current Path

If network coverage and quality are reduced in rural areas, modern initiatives such as remote patient monitoring and precision agriculture are at risk along with many critical applications like distance learning and telecommuting that help people in rural areas participate

[10] *See*, February 2, 2017, letter to FCC Chairman Pai: https://www.manchin.senate.gov/public/index.cfm?a=files.serve&File_id=4B24485D-D61A-40D8-AE03-867D0139A37E

[11] Id.

in the todays digital and information economy. This is tremendously important because, according to the USDA's most recent figures, over 46 million Americans live in rural communities. That's fourteen percent (14%) of the total US population living in seventy-two percent (72%) of the nation's geography.[12]

During the Recession, almost 9 million jobs vanished from our US economy, GDP shrank by more than five percent (5%),[13] and our rebound has been uneven. Many of America's urban and coastal populations have recovered, and today they are generally ahead of where they were ten years ago. But, that's not true for tens of millions living in rural Americans, which remains well behind where it was before the Recession, some ten years ago.

Just last week, Chairman Pai participated in the inaugural Rural Prosperity Task Force meeting,[14] where he outlined how important policies that support broadband availability in rural areas are for demonstrating that the federal government cares about rural America. As he articulated, providing connectivity nationwide is at the core of why the FCC was created in 1934.[15] Chairman Pai shared examples of economic growth powered by broadband with the task force, including remote monitoring in a meat processing plant in Nebraska, feed lot monitoring of cattle in Kansas, connected combines and field monitoring in Maryland, and healthcare, education, and job creation advances all made possible by broadband.

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[12] USDA, Economic Research Service, Population & Migration Overview: https://www.ers.usda.gov/topics/rural-economy-population/population-migration/

[13] CBPP, *Legacy of the Great Recession*, June 9, 2017: http://www.cbpp.org/research/economy/chart-book-the-legacy-of-the-great-recession

[14] *See,* https://www.whitehouse.gov/blog/2017/06/16/secretary-perdue-hosts-inaugural-rural-prosperity-task-force-meeting

These examples are not purely anecdotal. The Hudson Institute recently found that the investments and ongoing operations of small rural broadband providers contribute $24.1 billion annually to the nation's gross domestic product, with sixty-six percent (66%), or nearly $16 billion, of that amount benefiting urban areas. The same report also found that an estimated 70,000 jobs can be attributed directly to economic activity of small, rural broadband providers, underscoring how broadband is an important driver of job growth.[16] A separate report has found that when a county gains access to broadband, there is approximately a 1.8 percentage point increase in the employment rate, with larger effects in rural areas.[17]

In testimony before this subcommittee last year, Mr. Darrington Seward, a Mississippi farmer, estimated a minimum "10-15% loss of efficiency when connections are disrupted" for their farm machinery alone.[18] New remote patient monitoring services can save millions for rural hospitals and state Medicaid budgets. In fact, C Spire has partnered with the University of Mississippi Medical Center on a diabetes monitoring project that has the potential to save Mississippi Medicaid over $189 million a year in hospitalization costs.[19] Secondary education, technical training, and even university degrees are available online, but only accessible for Americans with broadband services that support delivery of materials and facilitate interactive classes. The future of rural economic growth is directly tied to the availability of mobile broadband.

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[16] *See*, https://hudson.org/research/12429-hudson-institute-releases-report-on-economic-impact-of-broadband-in-rural-communities

[17] *See*, http://digitalcommons.ilr.cornell.edu/ilrreview/vol66/iss2/2/

[18] *See*, https://www.commerce.senate.gov/public/_cache/files/86a9b24c-e124-4b4b-a701-f0fe165be074/F3297DD6CC57D51B9EA2A54F209F07E3.darrington-seward-testimony.pdf

[19] *See*, https://www.fcc.gov/faces-connected-care-mississippi-story

We see examples nearly every week that demonstrate how we are, in many ways, living in a time of two Americas. Our most recent national election showed that there are millions of Americans who feel like they have been detached from the process and are being left behind, and many of these live in rural areas. I certainly won't claim today that wireless broadband availability alone will solve that complex problem, but I truly believe that if we do not connect our fellow citizens in rural areas the way that we have in urban and coastal parts of our country, economic and social divides will get worse. The good news is that policymakers can choose to connect these Americans if USF is properly channeled to support broadband in rural areas.

G. Options to Promote Rural Broadband Deployment

The FCC's biggest USF shortcoming has been its unwillingness to aggressively pursue the core goal that Congress set before it: that rural citizens should have access to modern services that are reasonably comparable to those in urban areas in both quality and price.[20] The FCC's timidity in this area is a bipartisan problem, stretching back more than a decade. If the FCC cannot bring itself to do the job Congress gave it by increasing investment to close the urban/rural broadband access gap, then Congress must act.

Chairman Pai has suggested that, "any direct funding for broadband infrastructure appropriated by Congress as part of a larger infrastructure package should be administered through the FCC's Universal Service Fund (USF) and targeted to areas that lack high-speed Internet access."[21]

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[20] *See, 47 U.S.C. §254 (b)(3).*

[21] *See, "Bringing the Benefits of the Digital Age to All Americans,"* Remarks of Chairman Ajit Pai at Carnegie Mellon's Software Engineering Institute, March 15, 2017: https://apps.fcc.gov/edocs_public/attachmatch/DOC-343903A1.pdf

Given the big gap that exists and the efficiencies that can be gained from using an existing mechanism that would not require creating a new program or bureaucracy, one way to provide a big boost to rural broadband is to make a special USF appropriation in each of the next five years, targeted to rural infrastructure, and with accountability protections. Projects could be funded as soon as the FCC accurately determines the areas that are most in need.

Alternatively, Congress could implement a fix to the contribution mechanism to spread the cost of universal service more equitably. This would provide the FCC with more flexibility than it has now to meet the needs of rural America because the Universal Service Fund would have a contribution base that is reflective of today's broader network usage, and a greater amount of funding available to provide support for rural broadband networks that our country clearly needs.

What cannot happen is more of the same. Rural America has fallen behind and we need policymakers to demonstrate a sense of urgency to fix this problem now.

H. Conclusion

Let's return, for a moment, to where I began my testimony this morning. I shared with you how C Spire has spent its history providing connectivity and modern telecommunications services to people in rural and hard-to-reach areas. Today, we've built an advanced fiber optics network that provides ultra-fast broadband connectivity to some of the most rural communities in Mississippi. We have almost 5,000 miles of fiber throughout Mississippi that can be a foundation to extend connections to rural communities. We're engaged in field trials of 5G equipment that can deliver wireless speeds of multiple Gigabits per second without needing a physical connection to a household or business. In the millimeter wave spectrum bands, technology has

caught up with spectrum availability, and equipment is now available to utilize spectrum that has been fallow for decades. The missing piece is the financial model that proves in the deployment of advanced wireless networks in rural America. That's where support from the Universal Service Fund can, as it has throughout its history, bridge the gap. In order to do that, policymakers must solve the problems that I highlighted earlier: accurately map broadband availability so that support can go where it is truly needed, and preserve the networks that the Universal Service Fund has helped to build.

Thank you again for inviting me to be here today. I welcome your questions and look forward to our dialogue this morning.