

**Testimony of
L. Elizabeth Bowles
President & CEO, Aristotle Unified Communications**

**Before the
United State Senate
Committee on Agriculture, Nutrition and Forestry**

2023 Farm Bill: Perspective from the Natural State

**June 17, 2022
Jonesboro, Arkansas**

Good morning, Chairwoman Stabenow, Ranking Member Boozman, and Members of the Committee. I am Elizabeth Bowles, President and CEO of Aristotle Unified Communications (Aristotle), a broadband Internet service provider headquartered in Little Rock, Arkansas. Aristotle deploys fiber-to-the-home and hybrid fiber/fixed wireless networks, and we serve mostly rural Americans in Arkansas. Our mission is to ensure all people have equal access to broadband regardless of where they choose to live, and we are committed to bring connectivity to unserved and underserved communities in Arkansas and throughout the United States. In addition to my position as CEO of Aristotle, I also served as the Chair of the FCC's Broadband Deployment Advisory Committee (BDAC), a body tasked with making recommendations to the FCC for eliminating the digital divide. In that capacity, I was keenly focused on policies designed to improve access to broadband in rural America. It is an honor for me to appear before the Committee today, and I would like to share my perspectives on broadband as a woman-

owned small business, something that I have been extremely passionate about for over twenty years.

Aristotle was formed in 2010. In 2018, we were awarded \$12.2 million in Phase II Connect America Funds (CAF) to bring broadband to rural areas in parts of five states: Arkansas, Illinois, Mississippi, Missouri, and Oklahoma. In 2020, Aristotle received \$30.8 million in CARES Act funding through the Arkansas Rural Connect Grant program, which we used to build a broadband network that serves nine counties throughout the Arkansas Delta. In 2021, Aristotle was awarded \$62 million in the RDOF auction, again to serve counties in the Delta in both Arkansas and Mississippi Delta. Aristotle's network now brings reliable, high-speed broadband access to over 77,000 households that otherwise would lack access to broadband.

In its *Fourteenth Annual Broadband Deployment Report*, issued in January 2021,¹ the FCC found that “fixed and mobile providers continue to make impressive gains in bring high-speed broadband service to all Americans and the number of Americans living in areas without access to at least 25/3 Mbps has dropped from more than 18.1 million Americans at the end of 2018 to fewer than 14.5 million Americans at the end of 2019, a decrease of more than 20%.”

While I do agree that we have made considerable gains over the past few years to extend broadband services to both unserved and underserved communities, we have not yet reached the point where every American has access to broadband. We can and must do better in providing

¹ [See FCC Fourteenth Annual Broadband Deployment Report, January 19, 2021.](#)

better and more reliable internet speeds to the homes, businesses, farms, and small communities that are interdependent on providing goods and services in our digital economy.

Through the bi-partisan Infrastructure Investment and Jobs Act (IIJA), the Federal Government has made a once-in-a generation investment of \$65 billion to eliminate the digital divide, with the bulk of the funding – up to \$42.45 billion – allocated under NTIA’s Broadband Equity, Access, and Deployment (BEAD) program. Although there are serious concerns with the program requirements and costs, and states are not likely to make grant awards until 2024, over time this funding should help move the needle by providing more communities with the broadband services they currently lack, but it will not be sufficient to bring broadband to everyone who needs it.

So while the IIJA provides a generational opportunity, the 2023 Farm Bill in many ways is of greater immediate importance. As Members of this committee know, the Farm Bill is reauthorized every five years and serves as a model of bi-partisanship in which Congress ensures that the needs of America’s farmers and rural areas are met. Just as technology evolves, and with it demand for broadband access increases, so does the Farm Bill operate to help rural America adapt and keep pace with the digital age. The Farm Bill has been assisting rural Americans entering the digital age for many years and will continue to do so long after the BEAD money is spent. For this reason, it is critical that the Farm Bill broadband programs stay focused on truly unserved rural communities and not become distracted by hype that pushes for

maximum speeds today, when those speeds will come at the cost of getting reliable and affordable broadband service to all of rural America. No community should be asked to shoulder the burden of waiting years for broadband just to meet the needs of special interest groups that are pushing a single technology.

For example, the BEAD program requirements are written in such a way that fiber is the preferred technology, not just for middle mile, but for the last mile as well. I submit to you that this fiber-first, fiber-only mindset when applied to the last mile will result in the rural areas of this country being left behind just as they historically have been. Fiber is expensive to deploy, more so in sparsely populated, geographically dispersed areas. It can take years to deploy, especially in rural areas, meaning that the communities most in need of broadband—and specifically those rural residents who live miles outside of the nearest town—will be waiting years until fiber broadband is available at their home. There is no real debate that fiber is the gold standard where it is possible and affordable to deploy, and a path to fiber should be top-of-mind in every federal government broadband funding program. However, rural communities do not have years to wait for broadband connectivity, nor will \$65 billion be sufficient to cover the cost of a fully fiber-to-the-home deployment everywhere in rural America, especially as we see the cost of all construction materials increase dramatically due to inflation.

For these reasons, it is important that the Farm Bill broadband programs remain truly technologically neutral, both explicitly and by not using proxies—such as the requirement of

symmetrical 100 Mbps upload and download speeds—whereby only a single technology can meet the required standard. A failure to adhere to technological neutrality will only exponentially increase costs and serve to delay broadband deployment to high-cost rural areas. If the Farm Bill goes down that path, we will run out of money before we get to the rural farms and residents most in need of connectivity.

As stated above, Aristotle deploys both fixed wireless and fiber-to-the-home networks. Our current network covers Pulaski County, Arkansas, where the City of Little Rock is, and nine counties in the Arkansas Delta. For those who are not familiar with the Delta, it is rural, high cost, predominantly lower-income, and sparsely populated. Eight of the nine counties we serve are persistent poverty counties. The Delta and areas like it throughout this country have been overlooked precisely because large broadband providers could not find a way to serve these rural populations and make a profit. Companies like Aristotle have stepped into this gap by providing robust, affordable broadband using a hybrid combination of fiber and fixed wireless. Aristotle's Delta network is a blend of fiber backhaul, fiber and licensed fixed wireless middle mile, and either fiber-to-the-home or fixed wireless last mile. This blend of technologies allowed Aristotle to construct a network capable of delivering speeds of at least 100 Mbps down and 20 Mbps up—and in many cases higher—with low latency and high reliability. Our network now covers over 77,000 households that previously did not have broadband service. We completed the project in under 12 months at an average cost of less than \$400 per passing.

By way of comparison, American Rescue Plan Act funded fiber-to-the-home networks awarded by the ARC program in 2021, when complete, will cover 20,072 households at an average cost of \$6,215 per passing. Several of the awards were over \$14,000 per passing. For example, the award for the town of Medlock will serve just 55 households at a per-household cost of over \$14,400. Because the ARPA program uses a symmetrical 100/100 Mbps requirement, which as noted above is a proxy for fiber only, it will cost nearly \$125 million to serve just over 20,000 rural homes in the last round of Arkansas Rural Connect grants. Of course, not all fiber projects are this expensive, but there is no argument that the cost of a fiber-to-the-home network is multiple times more expensive than a hybrid network and takes far longer to deploy.

The BEAD program is designed to address unserved and underserved areas in urban, suburban, ex-urban, and rural areas, whereas the Farm Bill broadband programs are specifically designed to address the needs of rural America. I am the last person who will argue that rural America is not entitled to broadband parity with urban areas, but that said, no resident and few businesses require 100 Mbps upload speeds in order to benefit from everything broadband offers. Unlike the BEAD program, which is one-time money, the Farm Bill has the ability to architect a path to fiber-to-the-home by funding hybrid last-mile networks that will bring broadband to these farms and communities within months rather than years. We can, in fact, achieve broadband parity for rural America without running fiber everywhere. The USDA can play a critical role in

filling the gaps that necessarily will be left once the IJA money is deployed, but only if those broadband programs do not fall into the same trap that will limit the effectiveness of BEAD.

I want to take a moment to address the argument that fiber is “future proof.” First off, I don’t like the term “future proof” because nothing in broadband is ever future proof. In the 1990s, we were confident that DSL would deliver all the speeds we would ever need. We could not then conceive of the uses we would make of the Internet today, and we cannot now predict what we may use it for in the future. Fiber appears today to be more future proof than other technologies, but even that is dependent on how many strands have been placed in the ground and what equipment has been put in the cabinet. Fixed wireless radios at one time maxed out at 10 Mbps, but now are capable of multi-Gig speeds, both up and down. The exponential growth of radio technology as fixed wireless grows to meet the increasing demand for higher speeds clearly demonstrates that we do not know today that fixed wireless is not “future proof” any more than we can say with certainty that fiber is. For this reason, while the more-future-proof-than-not argument may have some nominal relevancy to one-time money, it is not an appropriate standard for the Farm Bill, which in the course of the next five years may see new technologies we cannot conceive of today that we should be able to take advantage of through the Farm Bill programs.

While most of my testimony has been focused on broadband funding and standards, there are two additional areas where the USDA can play an important role that I would like to touch on.

The first of these is accurate and granular mapping, which is paramount to ensuring that broadband funding in rural areas gets to those who need it the most. Broadband maps provide the tools needed to ensure all are connected by accurately identifying those who are not, and as is well recognized, existing FCC maps overstate broadband coverage, particularly in rural America. To correct this, the FCC is building a broadband “fabric,” which, when complete, is supposed to provide a comprehensive broadband map that will show where broadband service is and is not.

In my opinion, the USDA has a better grasp of where the holes in rural broadband coverage exist and on how accurate mapping should be done. This is one of USDA RUS’s area of expertise, and no agency understands the complexities of rural America better than the USDA. In mapping, the USDA RUS takes a holistic approach to determine the needs of the area, whereas the FCC geographically sketches an area to see if it is connected or not, then decides if the area merits connectivity funding. The USDA RUS puts boots on the ground and uses technology to map an identified area with a level of accuracy greater than what the FCC maps have historically accomplished. The Farm Bill should recommend that the USDA consult with the FCC to ensure accuracy of their fabric – a “whole of government” approach. Where there is no agreement, USDA should actively challenge any inaccuracies that may exist in the final

product. In this way, we can ensure that rural broadband maps are reliable, accurate, and serve the needs of rural America.

Second, in the upcoming Farm Bill, we have an opportunity to craft a definition of “rural” that will provide clarity for where grants can be awarded. Prior definitions have had negative consequences for broadband deployment by excluding rural areas due to their proximity to an urban cluster, defined as a population of at least 2,500 and less than 50,000.² Many of these locations are no less rural and no easier to serve with broadband than an area located a few more miles away. Other definitions of “rural” are simply ambiguous. For example, the Census Bureau definition of rural is “any population, housing, or territory NOT in an urban area.”³

One of the actions the FCC Broadband Deployment Advisory Committee took while I was Chair was to craft a recommended definition of rural that would address actual rurality, not define “rural” simply as “not urban.” To that end, we sought guidance from states and key stakeholders, particularly States and municipalities, to determine what definition would work for them when looking at where funding should flow for broadband deployment. We ultimately landed on the following definition: “a county with an average population density of less than 500 persons per square mile, excluding the county seat.”⁴ In the Farm Bill, Congress should adopt

² [*See U.S. Census Bureau Define Rural, Urban Area Delineation.*](#)

³ [*See U.S. Census How Does the U.S. Census Bureau Define “Rural”.*](#)

⁴ [*See BDAC State Model Code for Accelerating Broadband Infrastructure Deployment and Investment, pg.10. The Model Code for States Working Group recommends this definition of “Rural,” but recognizes that individual States may wish to adopt a different definition, particularly with respect to population thresholds.*](#)

the BDAC's definition of rural, at least for the broadband programs, since this definition will ensure that broadband dollars will flow to the areas that have been excluded due to the lack of density of population, which is one of the hallmarks of rurality.

Ensuring continuity of broadband funding is key to success of our farmers and rural small businesses and homes. While the bi-partisan IJA serves as catalyst for robust long-term deployment, it is one-time money, and the reality is that is even if all the BEAD money is spent—which given the burdensome regulations and corresponding cost in that program is not a given—it still will not be enough to ensure all rural Americans have access to broadband. If the covid pandemic has taught us anything, it is that broadband needs are ever evolving, and more funding will be needed over the course of the next 10 years to ensure rural America is truly connected. The Farm Bill can fill the gap in funding that the IJA will leave behind in rural areas, and Congress has the opportunity now to ensure that this is the case. The Farm Bill presents an evolving opportunity for Congress to continually fund connectivity to rural America every five years and to scale appropriately as demand increases. Our nation's farmers are undergoing difficult times and cannot wait years to obtain broadband access. Supply chain issues and delivering high quality commodities are at the forefront of every farmer's mind. Connectivity, real time data, and opportunities to sell their commodities in an expedient and efficient manner is now, more than ever, critical. For this reason, the Farm Bill must not favor one technology over others and should provide an achievable standard for broadband speeds with the understanding

that this is just the first step along the path to gigabit service everywhere in rural America. We can't start at the end of that path—or even in the middle—and reasonably expect all of rural America to be served with broadband anytime in the near future.

Thank you again for the opportunity to speak before you today, and I look forward to answering your questions.