



Statement by

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INTRODUCTION

Chairman Scott, Ranking Member Thompson, and members of the Committee, thank you for this opportunity to testify about the importance of broadband infrastructure to rural areas and how rural broadband networks are deployed and sustained. I am Jennifer Prather, Vice President and General Manager at Totelcom Communications in De Leon, TX. My remarks today are on behalf of Totelcom, as well as NTCA–The Rural Broadband Association, which represents approximately 850 rural community-based carriers that offer advanced communications services throughout the most sparsely-populated areas of the nation.

NTCA members and companies like them serve approximately one-third of the U.S. landmass; in most of these sparsely populated rural areas, they are the only fixed networks available, providing essential communications services to just under five percent of the U.S. population and critical connections for businesses, anchor institutions, and providers of wireless services across rural America. Indeed, small telecommunications providers connect rural Americans with the world – making every effort to deploy advanced networks that respond to consumer and business demands for cutting-edge, innovative services that help rural communities overcome the challenges of distance and density. Fixed and mobile broadband, video, and voice are among the services that many rural Americans can access thanks to the commitment of small, local providers to serving sparsely populated areas.

Totelcom is a community-based telecommunications provider with 45 employees serving a 1,182-square mile area with an average of 3.4 customers per square mile. Nineteen percent of our customers reside in just two square miles, while the remaining 81 percent reside in the other 1,180 square miles – so the population density of the more rural areas is just 2.75 customers per square mile. We provide more than 4,500 total connections to customers, delivering voice services and broadband using a variety of methods. Using every available “tool in the toolkit,” we employ fiber-to-the-home technology and traditional copper-based facilities to provide broadband to most customers, and we also leverage fixed wireless point-to-point broadband to reach customers in some of the most remote portions of our service area.

Our networks allow agricultural producers and other rural businesses to communicate with suppliers and sell to new markets, they enable education of our children on par with opportunities in urban areas, and they make our communities attractive destinations for people and businesses to relocate. Throughout the pandemic, our networks connected the local hospitals, supported health care delivery, and enabled thousands of Americans to work or learn from home. In rural America, that translates into economic development that produces and preserves jobs, not only in agriculture, energy, and other industries with a strong rural presence, but also in the healthcare, education, and other retail industries.

UNIQUE CHALLENGES OF RURAL BROADBAND DEPLOYMENT

Building broadband networks is capital-intensive and time-consuming; building them in rural areas involves a special further set of obstacles. The primary challenge of rural network deployment is in crossing hundreds or thousands of miles where the terrain is diverse. The costs of constructing networks in areas where there are only a handful of customers per route mile or square mile are significant, and the ability to recover those costs is difficult when these communities and rural areas are so sparsely populated. To complicate further the unique rural challenges of distance and density, when crossing federal lands or railroad rights-of-way in rural America, network operators must address environmental and historical permitting concerns or contractual obligations that can delay construction projects and increase their already high costs.

Then, once networks are built, they must be maintained over those hundreds or thousands of miles – this requires technicians who regularly travel long distances to make service calls and customer service representatives trained to deal with questions about things like router and device configurations. Even the best local networks in rural markets are then dependent upon “middle mile” or long-haul connections to internet gateways dozens or hundreds of miles away in large cities. Reaching those distant locations is expensive as well, and as customer bandwidth demands increase – moving from Megabytes to Gigabytes to Terabytes of demand per month per customer – so too does the cost of ensuring sufficient capacity to handle customer demand on those long-haul fiber routes that connect rural America to the rest of the world. Indeed, especially as applications like video streaming increase and place greater strains on these connections, we incur these costs and make the investments that make it possible for firms like Amazon and Netflix and others to reach their customers in rural America.

Small rural providers like Totalcom are eager to meet and overcome all of these challenges for the rural communities in which they live and serve, but it is important that they have the resources and regulatory stability to do so considering the importance of broadband to the current and future success and quality of life of rural America. Again, the delivery of broadband involves not only the one-time act of deploying a network, but the ongoing challenges of delivering services and keeping pace with user demand over the decades that the network will be operational. There is a great deal of understandable focus on the challenges associated with connecting every American to broadband in the first instance – and companies like Totalcom are front and center in this effort – but it cannot be lost that we need to take steps as well to make sure that these networks remain sustainable and that the services offered atop them remain affordable and relevant to customers for years to come.

BROADBAND IS ESSENTIAL RURAL INFRASTRUCTURE

Rural broadband has far-reaching effects for both urban and rural America, creating efficiencies in health care, education, agriculture, energy, and commerce, and enhancing the quality of life for citizens across the country. Totalcom serves many important community anchor institutions, including a rural hospital and related emergency medical services, a medical clinic that serves low-income populations in three area towns, five school districts, three public libraries, and nine public safety entities, including police and rural volunteer fire departments. In recent years, Totalcom has built broadband to a number of dairies in the area to provide the bandwidth

necessary for state-of-the-art smart dairy and farming practices, including radio-frequency identification, or RFID, tags on cows to track production and health. Totelcom also operates our own “genius bar” in the form of the Totelcom Learning Center, open weekly to assist customers in a one-to-one setting in a comfortable environment. Customers can bring in their electronic devices and seek assistance with email, saving and sending pictures, and even social media.

During the pandemic, we took the Federal Communications Commission (FCC) Keep Americans Connected Pledge to keep customers connected, regardless of their ability to pay. Totelcom stepped up to help our community, and in the beginning of the lockdowns, worked evenings and weekends to accommodate the sudden and intense increase in demand for new connections—many at no additional cost to the consumer. We set up several rural Wi-Fi hotspots for anyone to use; upgraded area medical and educational facilities’ bandwidth at no charge; provided free installs to any customer with a K-12 or college student in the household; partnered with the local schools to provide free service for students in need; and assisted the county emergency management center in setting up a communications center free of charge. NTCA estimates that on average, small, rural providers incurred \$80,000 in uncollectibles during the pandemic due to customers’ inability to pay. For Totelcom, we estimate our uncollectibles and lost revenue as a result of all of these efforts to keep customers connected to be more than \$300,000.

As we look to future data needs of our customers and our communities, we have taken aggressive steps to focus on the anticipated increase in usage, including establishing a robust and reliable connection to a statewide fiber network that provides our “middle-mile transport” between our local communities and the rest of the world. We have also added a second connection to a separate internet point-of-presence as part of our network resiliency plan in case of an outage or damage to our network’s backhaul infrastructure. This puts our customers in a great position as data needs grow, as we have seen our average data usage increase over 750% in recent years. Due to this demand, we continue to pursue fiber deployment as fast as possible, even as we also look to employ new technology in our copper and wireless networks to increase the pace of bandwidth upgrades to our customers.

The pandemic has highlighted the need to continue these investments as demand for bandwidth increases. Over the last year, while everyone began to work and learn from home, we saw an increase of more than 200% in usage, both download and upload. Due to our investments in our networks, we had the capacity to meet that demand. The speed and sustainability of deployment, however, will depend on both reasonable access to capital to finance construction and the availability of Universal Service Fund (USF) support to make sure user rates on these rural networks, once upgraded, are not astronomical and unaffordable. Again, while so many focus on the upfront financing aspects of this debate – which is important, to be sure – it is equally important that we not overlook the long-term viability of networks in these sparsely populated rural areas and the kinds of support mechanisms needed to sustain them and keep services affordable on them.

Much Progress, but Much More Work to Do

Despite the progress discussed above, many parts of rural America still need better connectivity. The good news is NTCA members have led the charge in getting rural America connected. Nearly two-thirds of NTCA member customers have access to 100 Mbps or better broadband and, on average, roughly the same proportion of customers are connected by fiber despite the very rural nature of the areas in question. But even as we believe the data show that there has been no better sector of the telecom industry when it comes to advancing rural broadband, seven percent of their customers still lack access to 10/1 broadband. In a country where the FCC has indicated that 94 percent of Americans already have affordable access to 25/3 Mbps service and many urban consumers and businesses benefit from 100 Mbps or Gigabit speeds, broadband access in rural America lags behind urban areas despite the best efforts, innovation, and entrepreneurial spirit of NTCA's members.

And, as I have noted earlier in this testimony, there is more to the equation than just building a network. It does no good to build a network if the provider cannot afford to operate it and repay the capital used to construct it – and even the very best network is certainly of little use if no one can afford to make effective use of the services offered atop it. Services must be activated and delivered, maintenance must be performed before troubles arise, “middle mile” capacity must be procured, and upgrades must be made to facilities and electronics to enable services to keep pace with consumer demand and business needs. In addition to these ongoing operating costs, networks are hardly ever “paid for” once built; rather, they are often built leveraging substantial loans that must be repaid over a series of years or even decades.

All of these factors make the delivery of broadband in rural America an ongoing effort that requires sustained commitment, rather than a one-time declaration of “success” just for the very preliminary act of connecting a certain number of locations. Particularly when one considers that even where networks are available many rural Americans pay far more for broadband than urban consumers, it becomes apparent that the job of really connecting rural America – and, just as importantly, sustaining those connections – is far from complete. Federal law mandates that the federal USF ensures reasonably comparable services are available at reasonably comparable rates in rural and urban areas alike. This mission cannot be lost as we focus on deployment. The rural broadband industry and our nation as a whole has a great story of success, but we also have much more work to do in both deploying and operating networks – and this is where public policy plays such an important role in helping to build and sustain broadband in rural markets that would not otherwise justify such investments and ongoing operations.

Aiming Higher and Doing Better

When it comes to solving broadband challenges, we as a nation can aim higher and do better than we have to date. Too many programs end up funding broadband that becomes irrelevant and unhelpful for consumers in short order. Instead of creating programs where the goal is simply that “every provider can play” on a “technologically neutral” basis, we must focus on the consumer experience and require the deployment of networks that in a decade or more will still deliver speeds and other performance capabilities that customers can rely upon in working or

learning from home and that businesses feel will be worth the effort in considering relocation to a rural market.

If broadband is the critical infrastructure of the 21st century, we should aim to build sustainable infrastructure rather than stitching things together in ways that require starting the effort all over again just a few years later. Put plainly, when we are choosing what kinds of new networks to build, we need more fiber to help promote better broadband and to further a 5G future. Driving adoption should also become an express complementary goal of any efforts aimed at tackling availability – we are not building networks for their own sake but for the use of as many consumers as possible, and providers should be charged specifically to promote digital equity and inclusion on networks as they deploy them.

A HOLISTIC APPROACH TO BROADBAND INFRASTRUCTURE

The critical role of communications infrastructure is as necessary to the present and future needs of rural America as is electricity and other infrastructure that enables the ordinary course of a thriving society. President Biden expressly recognized the importance of advanced communications networks by including broadband within his broader infrastructure initiative. NTCA applauds the apparent consensus that Congress is also making broadband an infrastructure priority and welcomes the opportunity to participate in a further discussion on how best to tackle this priority. Before turning to specific thoughts on paths forward, it may make sense first to outline a few key objectives for consideration with respect to any broadband infrastructure plan:

- ***Future-Proof Networks:*** Any resources provided as part of an infrastructure plan should look to get the best return on such long-term investments. For networks with useful lives measured in decades – especially private investments that leverage federal dollars – this should mean the deployment of infrastructure capable of meeting consumer demands not only of today and tomorrow, but for ten or twenty years. Putting resources toward infrastructure that needs to be substantially rebuilt in only a few years’ time could turn out to be federal resources wasted – and would still risk leaving rural America behind.
- ***Coordinate with and Leverage Existing Broadband Programs:*** The plan should leverage what is already in place and has worked before. Creating new programs from scratch is not easy, and if a new broadband infrastructure initiative conflicts with existing efforts, that could undermine our nation’s shared broadband deployment goals. Any new federal broadband program must coordinate with existing federal broadband programs at the FCC, United States Department of Agriculture (USDA), and National Telecommunications and Information Administration, and also state broadband programs. Additionally, existing programs that have worked well and are successful in promoting both accountability and proven results should receive additional support to build upon their successes rather than having all new funds directed only to new programs that may duplicate efforts.

- ***Direct Funding to Unserved Areas:*** Prioritize funding for new construction to unserved areas to limit overbuilding of existing networks that are meeting federal broadband standards. We should focus funding on the areas most lacking in broadband and seek to build the best kinds of networks in those areas – and we can then turn our attention to the areas next most in need once that is complete. This approach will ensure the best possible use of federal resources in the form of targeting funds for new networks to the consumers that need help most and ensuring that the networks then built to serve those consumers will last for decades thereafter.
- ***Hold Providers Accountable:*** There should be clear standards for what will be expected of and achievable by providers looking to leverage any resources made available through such an initiative. Looking to providers with proven track records in delivering real results makes the most sense, but whoever receives any support should be required to show clearly that they used those resources to deliver better, more affordable broadband that will satisfy consumer demand over the life of the network in question.
- ***Networks Must be Maintained:*** Any broadband infrastructure plan needs to be carefully designed and sufficiently supported to tackle the challenges presented. This is a question of both program focus and program scope.
 - From a focus perspective, any infrastructure plan should aim toward getting broadband where it is not and sustaining it where it already is; deployment of duplicative infrastructure in rural areas that are uneconomic – and may not even support a single network on their own – will undermine the sustainability of existing network assets.
 - From a scope perspective, deploying and sustaining rural broadband is neither cheap nor easy; we need to recognize that finite resources are available to address any number of priorities, but any plan that calls for broadband deployment – especially in high-cost rural America – should match resources to the size of the problem to be solved.
- ***Leverage Community-Based Providers:*** Providers like Totalcom live in or very close to the areas they serve – we know our customers, we know the geography, and we know the business of delivering communications services in these areas. As policymakers look for solutions to deliver broadband in unserved parts of rural America, small businesses based in or near those areas offer the greatest promise for achieving results quickly and effectively. Regardless of whether a provider is a cooperative or a commercial operator, like Totalcom, we strongly urge Congress and the Biden administration to “look local” when it comes to identifying broadband solutions – and to leverage the expertise and experience of smaller community-based providers like Totalcom, regardless of corporate form, in overcoming these challenges.

- ***Promote Local Partnerships:*** Based in the small rural communities they serve, service providers like Totalcom have deep long-standing relationships with their local governments and anchor institutions. The best results can often be achieved when private operators with significant experience in building networks and delivering communications services work together with stakeholders in the community to identify and respond to specific needs. Creating programs that encourage and incentivize such partnerships and collaboration could unleash broadband investment and help sustain those networks once built.

RURAL UTILITIES SERVICE (RUS) TELECOM FINANCING

The Strength of RUS Experience

Deploying a communications network in a rural area requires a large capital outlay due to the challenges of distance and terrain. The number of rural network users (as compared with more densely populated urban areas) is too small to justify investment in many cases and pay the costs of deployment and ongoing operations through customer charges. As Congress considers the details of legislation to promote infrastructure deployment, the crucial role that USDA’s Rural Utilities Service has long played in addressing rural broadband challenges must not be overlooked. Since the early 1990s, the RUS telecom programs have financed advanced network plant at a net profit for taxpayers and helped deploy state-of-the-art networks to rural Americans left behind by providers unable or unwilling to serve low-population-density markets. With rare exception, RUS, CoBank and Rural Telephone Finance Cooperative are the primary lenders that small, rural providers can turn to for outside financing. Not only does RUS help rural America remain connected, but its various telecom programs make loans that must be paid back with interest – creating a win/win situation for rural broadband consumers and American taxpayers.

RUS and USF Work in Concert

While RUS lending programs finance the substantial upfront costs of network deployment, the USF High-Cost Fund helps make the business case for construction and sustains ongoing operations at affordable rates. More specifically, USF by law aims to ensure “reasonably comparable” services are available at “reasonably comparable” rates. Not to be confused or conflated, RUS capital and ongoing USF support serve distinctly important, but complementary rather than redundant, purposes in furthering rural broadband deployment. Ensuring that USDA financing and USF support continue to work in concert not only avoids duplication and helps deliver high-speed reliable broadband to the consumer, but it recognizes the hard realities of both deploying networks and then delivering services in the most remote, sparsely-populated areas of the nation.

Farm Bill and Other Considerations

Apart from infrastructure legislation, the pending expiration of the current Farm Bill affords opportunity to review the Farm Bill Rural Broadband Program - previously referred to as the Rural Broadband Access Loan and Loan Guarantee Program - that was first authorized in the 2002 Farm Bill. Each subsequent Farm Bill has made extensive reforms to the program with the

goal of greater accountability, efficiency, and effectiveness. Extensive rounds of program reforms in less than 20 years means that the Rural Broadband Program has been almost continuously “under construction” since its inception, rendering the program inaccessible to borrowers for long periods of time. While the program is not perfect, it may be helpful to simply let borrowers use the Rural Broadband Program in current form with minor updates - and full funding - before undertaking another extensive reform effort. NTCA urges the Committee to continue to support the Rural Broadband Program that is subject to the Farm Bill reauthorization process at full funding levels as you formulate recommendations. Furthermore, we urge the Committee to continue its history of support for all RUS telecom programs, which are also vital to the ongoing deployment and maintenance of advanced communications infrastructure throughout rural America. While more resources for rural broadband deployment are needed, involving more government entities and programs in broadband financing should be undertaken cautiously to avoid duplicating efforts and undermining a coherent, cohesive approach to financing and then sustaining rural broadband networks.

INFRASTRUCTURE INVESTMENT AND BARRIERS TO DEPLOYMENT

Infrastructure investment depends not only on financing but also on prompt acquisition or receipt of permissions to build networks. Barriers or impediments to broadband deployment must also be addressed as part of any holistic plan to promote and sustain infrastructure investment. Such roadblocks, delays, and increased costs are particularly problematic for NTCA members, each of which is a small business that operates only in rural areas where construction projects must range across wide swaths of land. Permitting and access, particularly with respect to federal lands and pole attachments, can present significant impediments to the deployment of rural broadband infrastructure. Navigating byzantine application and review processes within individual federal land-managing and property-managing agencies can be burdensome for any network provider, but particularly the smaller network operators that serve the most rural portions of the U.S. landmass. The review procedures can take substantial amounts of time, undermining the ability to plan for and deploy broadband infrastructure – especially in those areas of the country with shorter construction seasons due to weather. Additionally, obtaining reasonable terms and conditions for attaching network facilities to poles that are owned and operated by other entities can result in long delays and costly fees charged to providers seeking to build out networks to rural communities lacking service.

The lack of coordination and standardization in application and approval processes across federal agencies further complicates the deployment of broadband infrastructure. From my experience at Totelcom, I can attest that when building new fixed wireless towers for deployment, the cost of the various permits and approvals normally runs higher than the actual construction of the tower. We have seen much agreement for some time now on solutions to simplifying the administrative barriers to deployment. The standardization of application, fee and approval policies and procedures across federal land-managing and property-managing agencies to the extent possible should be a high priority.

Finally, though small rural providers have long enjoyed productive working relationships with RUS, there is always room for improvement. Small carriers typically spend about two years and about \$250,000 securing loan approval from RUS. Some providers would love to take advantage

of RUS's low financing rates, but the procedural barriers to borrowing from RUS send them to private lenders that offer higher rates. In particular, we look forward to working with this committee to address some of the more time-consuming processes in the various RUS programs that could expedite approvals and deployment.

Addressing Supply Chain Concerns

As numerous broadband infrastructure programs work now to help fill gaps in coverage across our country, and as additional programs are considered to help finally overcome persistent digital divides, it is important to monitor the status of the communications supply chain. We are currently hearing of shortages and increasing delays in order fulfillment – ranging from several weeks to up to one year – for critical communications equipment like fiber, routers, antennas, network terminals, and customer premise equipment due to a mix of pandemic-related impacts and increased demand for broadband investment. To ensure that existing and new infrastructure initiatives are as successful as possible in responding to consumer needs and demands, we believe it is important that the federal government play a central role in working closely and directly with manufacturers, distributors, and other suppliers to avoid disruptions in the communications supply chain. Just recently, we placed an order for fiber pedestals that has a 365-day lead time to delivery. As Congress is poised to make future investments to solve the digital divide once and for all, supply chain shortages must be addressed – or else the billions of dollars in funds intended for immediate broadband deployment risk being tied up in held orders and delayed shipments.

CONCLUSION

Robust broadband infrastructure is crucial to the current and future success of rural America. But the characteristics that enable the unique beauty and enterprise of rural America make it very expensive to deploy advanced communications services there. Our nation's small, rural, community-based telecom providers are deploying faster broadband throughout their service areas, but no carrier – whether cooperative or commercial, and regardless of size – can deliver high-speed, high-capacity broadband in rural America without the ability to justify and then recover the initial and ongoing costs of sustaining infrastructure investment in high-cost areas.

A legislative infrastructure initiative offers a unique opportunity to provide the resources needed to make these investments, and mechanisms that ensure efficiency and accountability in the expenditure of funds are already in place. Our industry is excited to participate in this conversation regarding broadband infrastructure initiatives, and we look forward to working with policymakers and other stakeholders on a comprehensive infrastructure strategy to ensure that all Americans will experience the numerous agricultural, economic, health, and public safety benefits of broadband. Thank you for the opportunity to testify, and for the Committee's commitment to broadband infrastructure investment in rural America.